









201: Prinashef_44+4	88	97	118	146	168	178	203	209	203	308	313	329	343	358	372	394	410	428	482
202: Coog_43+	74	88	100	118	141	153	153	209	209	308	313	329	343	358	372	394	410	428	482
203: Marysvil_52	88	97	102	118	141	153	153	198	209	308	313	329	343	358	372	394	410	428	482
204: Naca_46	88	97	102	118	141	153	153	209	209	308	313	329	343	358	372	394	410	428	482
205: Entiger69	74	88	100	118	146	168	178	209	209	308	313	329	343	358	372	394	410	428	482
206: SydNat_45+1	88	97	118	146	168	178	203	209	209	308	313	329	343	358	372	394	410	428	482
207: HuntEnerson15_44+	88	97	102	118	141	153	153	209	209	308	313	329	343	358	372	394	410	428	482
208: Airmid_44	88	97	118	146	168	178	203	209	209	308	313	329	343	358	372	394	410	428	482
209: Tarynearal_42+2	88	97	118	146	168	178	203	209	209	308	313	329	343	358	372	394	410	428	482
210: George_43	88	97	118	146	168	178	203	209	209	308	313	329	343	358	372	394	410	428	482
211: Micasa_45+1	88	97	102	118	141	153	153	198	209	308	313	329	343	358	372	394	410	428	482
212: PeterA_47	88	97	102	118	141	153	153	209	209	308	313	329	343	358	372	394	410	428	482
213: Jabiru_44	88	97	102	118	141	153	153	209	209	308	313	329	343	358	372	394	410	428	482
214: OrionJack_54	88	97	118	146	168	178	203	209	209	308	313	329	343	358	372	394	410	428	482
215: Bonamassa_44	88	97	102	118	141	153	153	198	209	308	313	329	343	358	372	394	410	428	482
216: Scorpio_47	88	97	102	118	123	141	153	153	209	209	308	313	329	343	372	394	410	428	482
217: Cuco_43	74	88	100	118	146	168	178	209	209	308	313	329	343	358	372	394	410	428	482
218: Ghoubry_49	88	97	102	118	123	141	153	153	209	209	308	313	329	343	372	394	410	428	482
219: ChadWilk_59	88	97	102	118	123	141	153	153	209	209	308	313	329	343	372	394	410	428	482
220: Benedict_49	74	88	100	118	146	168	178	209	209	308	313	329	343	358	372	394	410	428	482
221: Theia_49	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	428	482
222: Isiphiwo_39	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	428	482
223: Jordennis_53+19	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	428	482
224: Hammer_36+1	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	428	482
225: Gruunaga_54+2	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	428	482
226: BABulsey_547	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	428	482
227: Ritter_54+	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	428	482
228: ToneTong_61+14	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	428	482
229: JewelBug_51	74	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	482
230: BlinnI_51	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	428	482
231: Jeffabun_564	74	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	482
232: Priamo_35	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	428	482
233: Gladiator_51	88	97	102	118	121	146	168	178	203	209	308	313	329	343	372	394	410	428	482
234: PP_52	75	88	97	102	118	121	141	153	153	209	209	308	313	329	343	372	394	410	482
235: Toro_53+	88	97	102	118	141	153	153	209	209	308	313	329	343	358	372	394	410	428	482
236: DroogsAime_46	88	97	102	118	131	141	153	153	209	209	308	313	329	343	372	394	410	428	482
237: Timshei_48	88	97	102	118	134	141	153	153	209	209	308	313	329	343	372	394	410	428	482
238: HiNder_46	75	88	97	102	118	123	141	153	153	209	209	308	313	329	372	394	410	428	482
239: Sainius_42	75	88	97	102	118	123	141	153	153	209	209	308	313	329	372	394	410	428	482
240: Groundhog_516+2	75	88	97	102	118	121	141	153	153	209	209	308	313	329	372	394	410	428	482
241: StepnighI_49	75	88	97	102	118	121	141	153	153	209	209	308	313	329	372	394	410	428	482
242: Roary_48	75	88	97	102	118	121	141	153	153	209	209	308	313	329	372	394	410	428	482
243: Astro_47	75	88	97	102	118	121	141	153	153	209	209	308	313	329	372	394	410	428	482
244: Danforth_48	75	88	97	102	118	121	141	153	153	209	209	308	313	329	372	394	410	428	482
245: NearyHeadass_47	75	88	97	102	118	121	141	153	153	209	209	308	313	329	372	394	410	428	482
246: Dixon_47	74	88	97	102	118	123	141	153	153	209	209	308	313	329	372	394	410	428	482
247: Phillis_49	75	88	97	102	118	121	141	153	153	209	209	308	313	329	372	394	410	428	482
248: Spouty_51	73	88	97	102	118	121	141	153	153	209	209	308	313	329	372	394	410	428	482
249: Beemo_51	7	88	97	102	118	121	141	153	153	209	209	308	313	329	372	394	410	428	482
250: Elephantoch_50	75	88	97	102	118	121	141	153	153	209	209	308	313	329	372	394	410	428	482



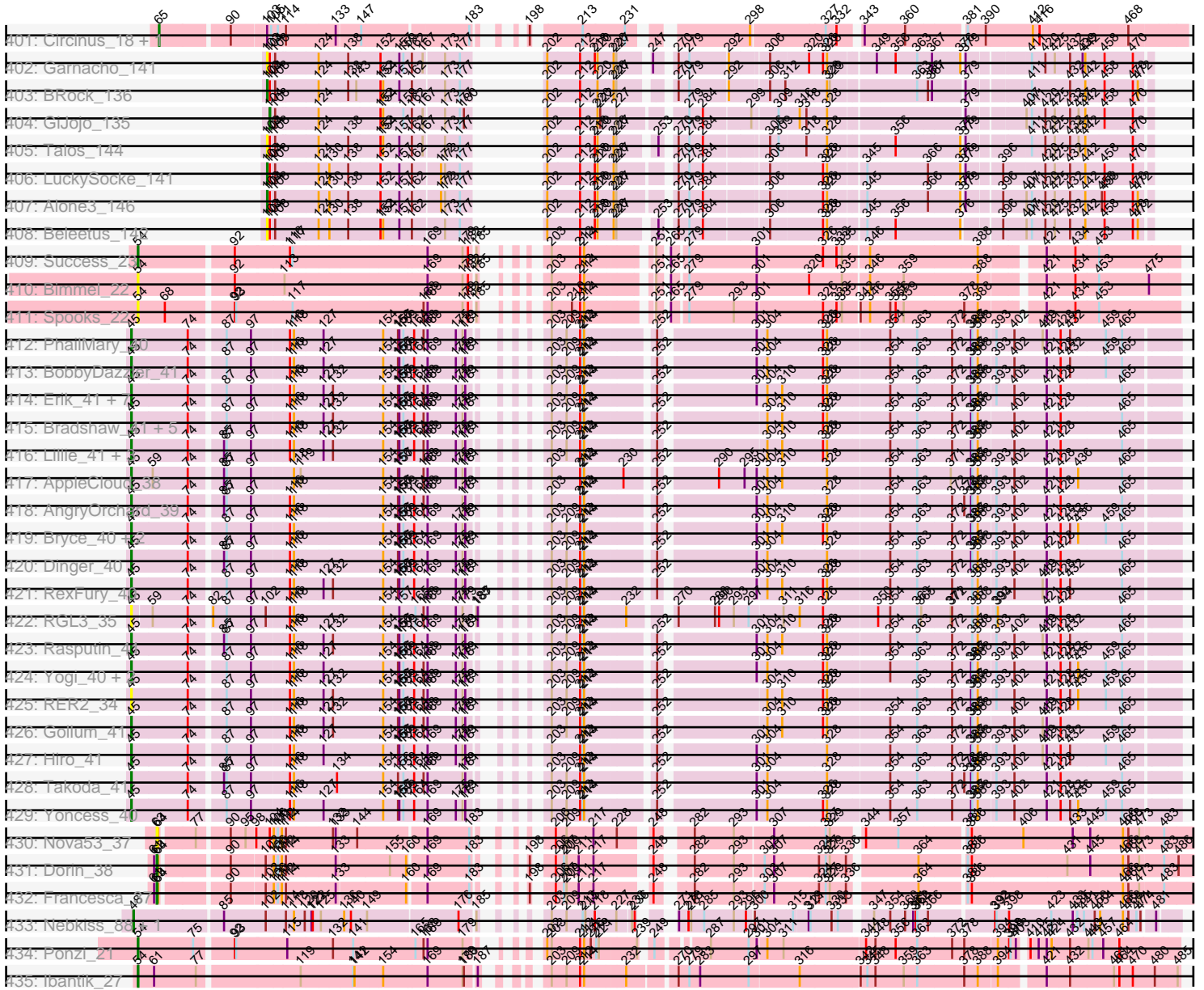


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551: Cadmus_44 +	31	84	93	133	166	198	217	235	248	302	333	349	366	369	390	438	468	483
552: PinkiePie_48	56	84	93	133	144	170	211	235	248	302	333	349	366	369	390	438	468	483
553: Larnav_43	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
554: LiviMartin_40	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
555: Pepperwood_42 + 2	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
556: Teutsch_42	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
557: EGole_44	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
558: Cross_43	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
559: Bartholomew_41 + 4	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
560: Lululemon_41	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
561: MulchiVians_40 + 1	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
562: Peebs_42	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
563: Marsus_41	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
564: Targaryen_44	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
565: Squillum_41	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
566: Mildred21_41	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
567: Bmoc_41	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
568: Shuckie_41	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
569: Bordeaux_43 + 13	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
570: Mugiwara_45	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
571: Eimer_47	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
572: KentuckyRace_45 + 1	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
573: Genie2_45 +	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
574: IchabodCrane_42 + 2	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
575: Enygra_42	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
576: Jolison_44	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
577: BoomerJR_45 + 2	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
578: StarPlatinum_45	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
579: Wolford_43	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
580: Gibbi_48	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
581: Tomas_46	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
582: LukeCage_44	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
583: Forrest_24 +	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
584: TunaTartare_42	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
585: ComPage_21	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
586: Limplo_20 +	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
587: FausC_20	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
588: Francob_20	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
589: Kenrey_24	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
590: SparkieGoddess_41 + 1	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
591: SeresaTree_22	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
592: Moab_21	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
593: Sham_18	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
594: Blueeyedbeard_22	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
595: Karp_20	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
596: PimpNick_22	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
597: Bealiren_19	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
598: Pateigo_21	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
599: Muntana_16	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483
600: Wakanda_16	84	93	133	144	151	170	211	235	248	302	333	349	366	369	390	438	468	483



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Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly with annotated starts, the track will be further scaled to only show that region of the ORF with annotated starts. This action will be indicated by adding "Zoomed" to the title. For starts, yellow indicates the location of called starts comprised solely of Glimmer/GeneMark auto-annotations, green indicates the location of called starts with at least 1 manual gene annotation.

## Pham 222731 Report

This analysis was run 03/28/25 on database version 593.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 222731 has 892 members, 92 are drafts.

Phages represented in each track:

- Track 1 : Chargerpower\_50
- Track 2 : Drake94\_47
- Track 3 : WalterMcMickey\_47, Twister\_47, Rebeuca\_49, Kristoff\_49
- Track 4 : Rowdy\_53, DustyMartin\_53, Shapes\_53
- Track 5 : Chupacabra\_48, Goose\_49, OKCentral2016\_48
- Track 6 : DontArgue\_48
- Track 7 : Trike\_47, Poompha\_48, Severus\_47, PeaceMeal1\_47, KittenMittens\_46
- Track 8 : Topanga\_47
- Track 9 : Eaglepride\_50
- Track 10 : RhynO\_50
- Track 11 : Edison31\_48
- Track 12 : Ebony\_51, Salz\_50
- Track 13 : Bud\_51, Hutc2\_51, Fibonacci\_51
- Track 14 : Mulciber\_51, Flaverint\_52, Snape\_51
- Track 15 : MaCh\_52, Bachome\_53
- Track 16 : Jabith\_52, TinyTimmy\_51
- Track 17 : Et2Brutus\_50
- Track 18 : Orange\_51, Bowtie\_52
- Track 19 : Insomnia\_52
- Track 20 : Petersenfast\_50
- Track 21 : Joselito\_52, Aneem\_52, Munch\_52, Gilberta\_52
- Track 22 : Sham4\_51
- Track 23 : Mabel\_51
- Track 24 : Timothy\_51
- Track 25 : Lucivia\_52
- Track 26 : Steamy\_47
- Track 27 : DARTHPhader\_48
- Track 28 : Refuge\_50
- Track 29 : Zimmer\_48
- Track 30 : Pharaoh\_46
- Track 31 : Phlei\_40
- Track 32 : Sunhee\_54
- Track 33 : Gail\_55

- Track 34 : Jeeves\_55
- Track 35 : Luchador\_55
- Track 36 : SororFago\_53
- Track 37 : Strosahl\_56, Remus\_56
- Track 38 : Boohoo\_56, LastResort\_55, JSwag\_55, Epsocamisio\_54, Nebulosus\_55, Looper\_56, ReMo\_55, DekHockey33\_56, ShayRa\_57, Anaysia\_56, Switzerland\_56
- Track 39 : KatherineG\_57
- Track 40 : MinecraftSteve\_57
- Track 41 : Waits\_56
- Track 42 : Oofda\_57, Warrior24\_59
- Track 43 : Nedarya\_51
- Track 44 : Soups\_57
- Track 45 : Rosalind\_55
- Track 46 : Anon\_52
- Track 47 : Battleship\_58
- Track 48 : PainterBoy\_52, Lucyedi\_52, EagleEye\_53
- Track 49 : 40AC\_52
- Track 50 : MyraDee\_44
- Track 51 : Kimona\_50
- Track 52 : Adzzy\_53
- Track 53 : XianYue\_50
- Track 54 : ChipMunk\_53, EvilGenius\_53
- Track 55 : Dignity\_53
- Track 56 : Phaded\_52, Jaan\_51, Landor\_51
- Track 57 : Georgie2\_52, FiringLine\_51, SemperFi\_52, SweetiePie\_51, SnapTap\_51, Crucio\_51, QueenBeesly\_51
- Track 58 : Tristan\_49
- Track 59 : CRB1\_55
- Track 60 : Acolyte\_47
- Track 61 : Miko\_48
- Track 62 : HarryHoudini\_52
- Track 63 : Echild\_51, Benvolio\_48
- Track 64 : DBQu4n\_53
- Track 65 : AbbyPaige\_53, Whabigail7\_52, LilTurb\_52, Turbido\_52
- Track 66 : Jsquared\_49
- Track 67 : Power\_50
- Track 68 : NaSiaTalie\_51, Drake55\_53, Baehexic\_50
- Track 69 : IronMan\_51
- Track 70 : Herbertwm\_51
- Track 71 : EZMoney23\_49
- Track 72 : Lökk\_48
- Track 73 : GaugeLDP\_49
- Track 74 : Jerm\_53
- Track 75 : Quokka\_49, MajorMajor\_50
- Track 76 : Centaur\_52
- Track 77 : Dalmatian\_52, Anselm\_52
- Track 78 : Updawg\_52, WideWale\_52, Equemioh13\_52
- Track 79 : C3\_49, AN9\_54, VC3\_54, ANI8\_54
- Track 80 : Pomar16\_53
- Track 81 : BabyBack\_50
- Track 82 : SwirlSquare\_56
- Track 83 : Buggy\_53
- Track 84 : Flare16\_51

- Track 85 : Travvers\_53
- Track 86 : Trooper\_52
- Track 87 : Odin\_50
- Track 88 : Gratitude\_51
- Track 89 : Malec\_51, Larenn\_50
- Track 90 : RedRock\_53
- Track 91 : Bradman\_50
- Track 92 : DudeLittle\_50
- Track 93 : VA6\_52
- Track 94 : Sknot\_53
- Track 95 : Leviathan\_53
- Track 96 : QueenB2\_50
- Track 97 : LionsBait\_53
- Track 98 : Agape74\_53
- Track 99 : Fameo\_51
- Track 100 : Leogania\_51, BiancaTri92\_51
- Track 101 : WeiHuaDA\_53
- Track 102 : Iwokeuplikedis\_54
- Track 103 : Changeling\_50
- Track 104 : Deloris\_52, BengiVuitton\_53
- Track 105 : Kalpine\_49, Colin\_51
- Track 106 : Rachaly\_50
- Track 107 : L5\_50, Koduck\_52
- Track 108 : Heffalump\_50
- Track 109 : BobSwaget\_47
- Track 110 : NothingSpecial\_49
- Track 111 : AnnaL29\_53
- Track 112 : MiculUcigas\_51
- Track 113 : Naji\_53, D29\_50, D32\_52
- Track 114 : TopsytheTRex\_47
- Track 115 : 20ES\_54
- Track 116 : Ph8s\_53
- Track 117 : Tomathan\_53
- Track 118 : Superchunk\_50
- Track 119 : ArcherNM\_46
- Track 120 : Terrific\_54
- Track 121 : TarsusIV\_50
- Track 122 : First\_0053
- Track 123 : Journey13\_45
- Track 124 : LadyBird\_56
- Track 125 : Bactobuster\_50
- Track 126 : Pukovnik\_50
- Track 127 : JoshKayV\_53
- Track 128 : Smeagan\_54
- Track 129 : Retro23\_52
- Track 130 : NicoleTera\_50
- Track 131 : Loser\_53
- Track 132 : Piro94\_51
- Track 133 : Kerberos\_53, Duplo\_53
- Track 134 : Trixie\_49
- Track 135 : KingCyrus\_53
- Track 136 : MissWhite\_50
- Track 137 : StarStuff\_53

- Track 138 : Caraxes\_51
- Track 139 : Serenity\_51
- Track 140 : Che12\_53
- Track 141 : FatCactus\_43
- Track 142 : Anthony\_47
- Track 143 : Kinmap\_48
- Track 144 : Phoxy\_54, Spike509\_54, Methuselah\_50, BuzzBuzz\_52, LarryKay\_54, AgronaGT15\_53, HashRod\_55, KADY\_54, Daishi\_53, Farber\_54, TinyPebbles\_53, Misomonster\_55, Louie6\_53, Soshari\_56, Bxz2\_50, Rummer\_53
- Track 145 : Bigflo\_54, Hercules11\_54, Wooldri\_56, Aglet\_55, Snickers\_54, Beauxregard13\_54, Anubis\_57, PotatoSplit\_56, Phoebe\_55, P28Green\_55, Sabinator\_53, Vix\_54, SoYo\_54, DaHudson\_54, BreSam8\_54, Watson\_54, Dieselweasel\_55, Mainiac\_54, JHC117\_54, Penny1\_55, Grif\_54, Colbster\_54, EpicPhail\_55, MarQuardt\_54, StepMih\_54, Grum1\_54, LBerry\_55, GtownJaz\_54, Tiffany\_54, Stagni\_54
- Track 146 : SoilDragon\_54, Jobu08\_53
- Track 147 : Fernando\_54, LugYA\_57, Taurus\_55, MoneyMay\_54, Marie\_54, JenCasNa\_55, Cullens\_54
- Track 148 : Lilith\_55, Malinsilva\_56, Grub\_54, Sabia\_54, MuchMore\_57, PGHhamlin\_56, Microwolf\_54, Pembroke\_54, AugsMagnumOpus\_57, Iowa\_54
- Track 149 : MA5\_51
- Track 150 : Groupthink\_55, Phranny\_55, Manu\_54, Reba\_54, Calvinny\_54, PurpleHaze\_54, Kalb97\_55, Heliosoles\_53
- Track 151 : Bugatti\_52, Idleandcovert\_52, Pistachio\_53, Puppy\_53, TNguyen7\_52, SaturnRing\_52, BlueBird\_53, Giroux\_52
- Track 152 : Hookmount\_50, Noella\_50, Texage\_49, Pocahontas\_50, Popcicle\_50, ResDef\_50, QuinnKiro\_49, Norbert\_49, Panamaxus\_48, Lambert1\_50, Caviar\_50, Veracruz\_49, Todacoro\_50
- Track 153 : JF4\_49, JF2\_49, B1\_46, MK4\_51
- Track 154 : Marchesa\_51, DropBear\_51
- Track 155 : Chiqui\_49, BabyJohn\_49
- Track 156 : BabyRay\_51
- Track 157 : Kachowdy\_51, Heathen\_51
- Track 158 : HelDan\_51, Scout\_51, Fred313\_51
- Track 159 : Ollie\_54, GingkoMaracino\_54
- Track 160 : Phantastic\_52
- Track 161 : MadMarie\_54
- Track 162 : HaveUMetTed\_55, PhishRPhriends\_52, OlanP\_53
- Track 163 : JeppNRM\_55, ACFishhook\_53, Kalnoky\_55, Marius\_55
- Track 164 : Rockstar\_51
- Track 165 : Margo\_50
- Track 166 : Gemma\_53
- Track 167 : Isca\_50
- Track 168 : Pawn\_54
- Track 169 : Zetzy\_53
- Track 170 : Nyxis\_50, Peaches\_50, Connomayer\_50, Citius\_50, Sabertooth\_50, Holli\_49, Sparxx\_51, Broseidon\_50
- Track 171 : Jaykayelowell\_48, Relief\_49, HamSlice\_49, Chaph\_50, Mayonnaise\_50, Obama12\_51, Caelakin\_50, Clarenza\_49, Phacado\_50, Albee\_50, Gadost\_50, Wizard007\_50, Burger\_48, Thanksgivukkah\_49, Eurydice\_51, Tinybot\_49, Kremtemulon\_50, LeoAvram\_50, MeeZee\_50, Koreni\_49, Eagle\_50, BellusTerra\_51, Eros\_50, Shaka\_50, JetBlade\_50, Eapen\_50, Phontbonne\_50, Ohfah\_51, Annyong\_50, BubbleTrouble\_49, Palestino\_49, OKaNui\_50, ICleared\_50, Wilbur\_50,

Mazhar510\_50, Roosevelt\_49, Pipcraft\_48, Polymorphads\_51, Millski\_49, NorthStar\_49, Nebs\_51, NotAPhaseMom\_50, Medusa\_50, Rosa24\_49, Cintron\_49, Lunsford\_51, Morrow\_51, Abdiel\_50, Bruiser\_49, Camperdownii\_48, Iracema64\_51, Iceman\_50, Houdini22\_50, Koan\_48, Flux\_50, Eris\_49, Pumbaa\_50, LochMonster\_51, Kingmustik0402\_50, Melvin\_52, Wander\_50, Nemo27\_50, Ulysses\_49, JoongJeon\_49, PeterPeter\_50, Bombshell\_50, Funston\_49, Phelipe\_51, Ruin\_50, Avle17\_50, Alberto7\_51, Maxo\_51, SenorClean\_48, LittleB\_50, Romney\_50, Kyee\_50, Scamp\_50, LappelDuVide\_50, Cocoaberry\_50, Spino\_49, KFPoly\_49, Skipitt\_49, Kampy\_50, CentreCat\_50

- Track 172 : Morpher26\_49, Xena\_48, Cici\_49, Datway\_49, Perplexer\_49, Achebe\_48, Badger\_48, Wile\_49, Bumblebee11\_48, AbbysRanger\_49, PetiteSangsue\_49, Backyardigan\_48, Katalie136\_49
- Track 173 : Lemur\_50
- Track 174 : Stink\_49, Miramae\_48
- Track 175 : TroyPia\_51
- Track 176 : Huxley\_50, YoSam321\_50
- Track 177 : Lorenzo\_50
- Track 178 : Florean\_50, Blackmoor\_50, Bartimeaus\_50, Baby16\_50, TiroTheta9\_50, Druantia\_50
- Track 179 : Maverick\_50
- Track 180 : Commander\_50
- Track 181 : AvatarAhPeg\_48
- Track 182 : Cindaradix\_47
- Track 183 : LHTSCC\_52
- Track 184 : Phighter1804\_50, Arturo\_49
- Track 185 : BangNhom\_51, Cerulean\_51, SheldonCooper\_52
- Track 186 : LittleGuy\_50
- Track 187 : TygerBlood\_50
- Track 188 : DirtyDunning\_49
- Track 189 : Mundrea\_49
- Track 190 : Taquarus\_50
- Track 191 : Deano\_49
- Track 192 : Dhanush\_50
- Track 193 : Shygu2\_49
- Track 194 : TinaFeyge\_50
- Track 195 : Noelle\_50
- Track 196 : Happiness\_49, ChampagnePapi\_52
- Track 197 : Kratark\_50
- Track 198 : Stasia\_49
- Track 199 : Dublin\_42
- Track 200 : Aragog\_42, Conspiracy\_43, Tiger\_42, PickleBack\_43, AgentM\_42, Jovo\_43, ForGetIt\_43, Lev2\_43
- Track 201 : Prinashe11\_44, Discoknowium\_42, Milcery\_44, Phlorence\_42, Archetta\_43
- Track 202 : Coog\_43, Midas2\_43
- Track 203 : MarysWell\_42
- Track 204 : Naca\_45
- Track 205 : EITiger69\_45
- Track 206 : SydNat\_45, Zolita\_44
- Track 207 : HuhtaEnerson15\_44, LittleCherry\_44
- Track 208 : Airmid\_44
- Track 209 : Tarynearal\_42, Swirley\_46, Twigg\_44
- Track 210 : George\_43

- Track 211 : Micasa\_45, Bluefalcon\_42
- Track 212 : PetterN\_47
- Track 213 : Jabiru\_44
- Track 214 : UnionJack\_44
- Track 215 : Bonamassa\_44
- Track 216 : Scorpio\_47
- Track 217 : Cuco\_43
- Track 218 : Ghoulboy\_45
- Track 219 : Chadwick\_47
- Track 220 : Benedict\_46
- Track 221 : Theia\_41
- Track 222 : Isiphiwo\_51
- Track 223 : Jordennis\_53, Kipper29\_53, SuperAwesome\_53, Chartreuse\_52, VohminGhazi\_53, Pmask\_53, DaVinci\_52, Cookiedough\_53, SuperCallie99\_52, Hoot\_48, Dorothea\_53, Candra\_53, SmellyB\_53, Kazan\_54, EricB\_53, Polyphemus\_55, GreedyLawyer\_53, Newrala\_53, McFly\_53, Neeharika16\_52
- Track 224 : Hammer\_54, Roksolana\_55
- Track 225 : Gruunaga\_54, Koko\_55, Hexamo\_54
- Track 226 : BABullseye\_47
- Track 227 : Rifter\_54, Tucker\_54
- Track 228 : ToneTone\_51, CloudWang3\_54, Indra\_57, Yokurt\_54, Blue7\_55, Zulu\_55, Lilbunny\_53, Artemis2UCLA\_54, Helmet\_56, Garak\_56, WunderPhul\_54, Wiks\_53, Temprado\_56, Zaka\_54, BlessJoy\_54
- Track 229 : JewelBug\_54
- Track 230 : Blinn1\_56
- Track 231 : Jeffabunny\_54
- Track 232 : Priamo\_55
- Track 233 : Gladiator\_51
- Track 234 : PP\_52
- Track 235 : Toro\_53, FlyCatcher\_55, Sheen\_51
- Track 236 : DroogsArmy\_46
- Track 237 : Timshel\_48
- Track 238 : HINdeR\_46
- Track 239 : Saintus\_42
- Track 240 : Groundhog\_46, Expelliarmus\_47, Smeadley\_48
- Track 241 : Stephig9\_48
- Track 242 : Roary\_48
- Track 243 : Astro\_47
- Track 244 : Danforth\_47
- Track 245 : NearlyHeadless\_47
- Track 246 : Dixon\_47
- Track 247 : Phillis\_49
- Track 248 : Spouty\_51, Qobbit\_51, EmyBug\_50, PackMan\_50, Phaeder\_51, Fayely\_51, Priya\_51, Eidsmoe\_51, Myxus\_51, Aliter\_51, Conquerage\_51, Catalina\_52, HortumSL17\_51, Tubs\_51
- Track 249 : Beemo\_51, RyeScarlet\_52, ExplosioNervosa\_51, Pioneer\_51, Phonnegut\_51, Horex\_50, Hanray\_49, Onglai\_49
- Track 250 : Elephantoon\_50
- Track 251 : Charm\_50
- Track 252 : BogosyJay\_50, Maminiaina\_50
- Track 253 : Sachima\_48
- Track 254 : Rahalelujah\_51
- Track 255 : Arissanæ\_50

- Track 256 : SheaKeira\_50
- Track 257 : Ugenie5\_48, Scherzo\_51
- Track 258 : DreamTeam1\_50
- Track 259 : LoneWolf\_52
- Track 260 : Yecey3\_52
- Track 261 : Vanisoa\_51
- Track 262 : Jiawan\_49
- Track 263 : Alma\_51
- Track 264 : Darrell\_53
- Track 265 : Lilleskat\_49
- Track 266 : Toaka\_51
- Track 267 : EdogawaKiddo\_49
- Track 268 : Keziacharles14\_51
- Track 269 : Jash\_48, Oliynyk\_48, Izzy\_48, Eddasa\_48, BryanRecycles\_48, Rusticus\_48
- Track 270 : Maneekul\_47
- Track 271 : Asten\_47
- Track 272 : Chucky\_47
- Track 273 : Esperer\_47, Aaronocolus\_47, Unstoppable\_47, Bovely\_47, Nerdos\_46, Phettuccine\_47, Leviticus\_47
- Track 274 : Dattran\_49, Goby\_47, Toma\_47
- Track 275 : Indigo\_46, Hydra\_48, Legacy\_46, Caliburn\_46, SunsetPointe\_46
- Track 276 : South40\_47, Katalie\_47
- Track 277 : Nanodon\_49
- Track 278 : Werner\_47
- Track 279 : Zemlya\_49
- Track 280 : Nabi\_48, Rana\_48, Lorelei\_48
- Track 281 : SarahRose\_47, BarryBee\_50, Snorlax\_47, OzzyJ\_48
- Track 282 : Ozzie\_46
- Track 283 : Dwayne\_47, Emaanora\_50
- Track 284 : Ejemplo\_46, TuanPN\_46
- Track 285 : Lika\_47
- Track 286 : Whatever\_47
- Track 287 : Danzina\_49
- Track 288 : Lannister\_49
- Track 289 : RedBear\_48
- Track 290 : Sujidade\_48
- Track 291 : BeardedLady\_47
- Track 292 : Celeste\_48
- Track 293 : Brataylor\_50
- Track 294 : Godpower\_48
- Track 295 : TagePhighter\_49
- Track 296 : EnochSoames\_50
- Track 297 : Hippo\_47
- Track 298 : Yasdnii\_47
- Track 299 : Animus\_47
- Track 300 : Caelum\_49
- Track 301 : SqueakyClean\_47, GirlDinner\_47, Janus\_48
- Track 302 : Nishikigoi\_49
- Track 303 : TinaBelcher\_47, Bowden\_47
- Track 304 : Diane\_47
- Track 305 : Omar\_50
- Track 306 : Puginator\_50



- Track 307 : Jevington\_50
- Track 308 : R4\_49
- Track 309 : Alvy\_50
- Track 310 : Axiom\_52, Triumph\_50
- Track 311 : Pablito\_48
- Track 312 : Paedore\_48, Loofah\_49
- Track 313 : Thestral\_49
- Track 314 : Amethyst\_47
- Track 315 : Marav\_51
- Track 316 : TrvxScott\_46
- Track 317 : Paolo\_50
- Track 318 : Zainub\_50
- Track 319 : BartholomewSD\_50
- Track 320 : Superstar\_52
- Track 321 : Issmi\_49
- Track 322 : Daudau\_48
- Track 323 : Haizum\_49, Tefunt\_49
- Track 324 : ELB20\_47
- Track 325 : Andris\_48
- Track 326 : Hank144\_50
- Track 327 : Provolone\_48
- Track 328 : phiCAM\_45
- Track 329 : Pavo\_48
- Track 330 : Conan\_48, ElGato\_48
- Track 331 : Celery\_50
- Track 332 : Alsaber\_48
- Track 333 : Saftant\_47
- Track 334 : Dexers\_46
- Track 335 : Speedwell\_52
- Track 336 : Yosif\_50
- Track 337 : Kaine\_47
- Track 338 : Verabelle\_51
- Track 339 : Amela\_47
- Track 340 : Vanseggelen\_52
- Track 341 : Verse\_47
- Track 342 : phiHau3\_48
- Track 343 : BroPlease\_47
- Track 344 : GreenWeasel\_48
- Track 345 : Tribute\_41
- Track 346 : BlueOtter\_43, Cursive\_40, HangryHippo\_43, Leo04\_43, Watermoore\_42
- Track 347 : Jay2Jay\_47, Evy\_44, Warpy\_47
- Track 348 : Riptide\_41, Anedea\_40
- Track 349 : Paradiddles\_38, NootNoot\_38
- Track 350 : Scheme\_43
- Track 351 : Cadmus\_44, Daubenski\_44
- Track 352 : PinkiePie\_40, Liandry\_41
- Track 353 : Larnav\_43
- Track 354 : LilMartin\_40
- Track 355 : Pepperwood\_43, Sushi23\_43, Samisti12\_42
- Track 356 : Teutsch\_42
- Track 357 : EGole\_44
- Track 358 : Cross\_43

- Track 359 : Bartholomune\_41, Braelyn\_41, Navo\_40, WhereRU\_39, Persimmon\_38
- Track 360 : Lululemon\_42, PacManQ\_42
- Track 361 : MulchMansion\_40, Angela\_40
- Track 362 : Peebs\_42
- Track 363 : Marsus\_41
- Track 364 : Targaryen\_44
- Track 365 : Squillium\_41
- Track 366 : Mildred21\_41
- Track 367 : Bmoc\_41
- Track 368 : Shuckle\_41
- Track 369 : Bordeaux\_43, SaltySpittoon\_45, JimJam\_45, Starbow\_43, MindFlayer\_43, Wipeout\_42, Battuta\_43, Quaran19\_45, Rikishi\_48, TomSawyer\_43, Amabiko\_45, Birchlyn\_42, Spelly\_45, PumpkinSpice\_44
- Track 370 : Mugiwara\_46
- Track 371 : Elmer\_47
- Track 372 : KentuckyRacer\_45, CeilingFan\_44
- Track 373 : Genie2\_45, Yaboi\_45
- Track 374 : IchabodCrane\_42, Karimac\_44, Spilled\_45
- Track 375 : Enygma\_42
- Track 376 : Jollison\_44
- Track 377 : BoomerJR\_45, Stanimal\_45, Sollertia\_45
- Track 378 : StarPlatinum\_44
- Track 379 : Wofford\_43
- Track 380 : Gibbi\_48
- Track 381 : Tomas\_46
- Track 382 : LukeCage\_44
- Track 383 : Forrest\_24, Emma1919\_24, Gilson\_24, MeganTheeKilla\_22, Jada\_22
- Track 384 : TunaTartare\_19
- Track 385 : Comrade\_21, Belfort\_22, Westy\_21
- Track 386 : Limpid\_20, Annadreamy\_20
- Track 387 : Faust\_20
- Track 388 : Francob\_20
- Track 389 : Kenrey\_24
- Track 390 : SparkleGoddess\_21, Stigma\_21
- Track 391 : SeresaTree\_20
- Track 392 : Moab\_21
- Track 393 : Sham\_18
- Track 394 : Blueeyedbeauty\_22
- Track 395 : Karp\_20
- Track 396 : Phredrick\_22
- Track 397 : Beuffert\_19
- Track 398 : Patelgo\_21
- Track 399 : Muntaha\_16
- Track 400 : Wakanda\_16
- Track 401 : Circinus\_18, BillNye\_16
- Track 402 : Garnacho\_141
- Track 403 : BRock\_136
- Track 404 : GiJojo\_135
- Track 405 : Talos\_144
- Track 406 : LuckySocke\_141
- Track 407 : Alone3\_146
- Track 408 : Beleetus\_142
- Track 409 : Success\_23

- Track 410 : Bimmel\_22
- Track 411 : Spooks\_22
- Track 412 : PhailMary\_40
- Track 413 : BobbyDazzler\_41
- Track 414 : Erik\_41, Nancinator\_41, Shuman\_41, Natosaleda\_40, Espica\_41, Phrankenstien\_41, Belenaria\_41, UhSalsa\_41
- Track 415 : Bradshaw\_41, StCroix\_40, Krishelle\_41, Naiad\_40, Alatin\_40, Swann\_41
- Track 416 : Lillie\_41, CosmicSans\_41, Rhodalysa\_41, TWAMP\_41
- Track 417 : AppleCloud\_38
- Track 418 : AngryOrchard\_39
- Track 419 : Bryce\_40, Jester\_40, Harlequin\_40
- Track 420 : Dinger\_40
- Track 421 : RexFury\_40
- Track 422 : RGL3\_35
- Track 423 : Rasputin\_41
- Track 424 : Yogi\_40, Alpacados\_40, Bonanza\_41
- Track 425 : RER2\_34
- Track 426 : Gollum\_41
- Track 427 : Hiro\_41
- Track 428 : Takoda\_41
- Track 429 : Yoncess\_40
- Track 430 : Nova53\_37
- Track 431 : Dorin\_38
- Track 432 : Francesca\_37
- Track 433 : Nebkiss\_88, Gaia\_89
- Track 434 : Ponzi\_21
- Track 435 : Ibantik\_27

***Summary of Final Annotations (See graph section above for start numbers):***

The start number called the most often in the published annotations is 45, it was called in 304 of the 800 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 20ES\_54, 40AC\_52, Aaronocolus\_47, AbbyPaige\_53, Adzzy\_53, Agape74\_53, Alatin\_40, Aliter\_51, Alma\_51, Alpacados\_40, Alsaber\_48, Alvy\_50, Amela\_47, Amethyst\_47, Andris\_48, AngryOrchard\_39, Animus\_47, Anselm\_52, AppleCloud\_38, ArcherNM\_46, Arissanae\_50, Artemis2UCLA\_54, Asten\_47, Axiom\_52, BABullseye\_47, BabyBack\_50, Bactobuster\_50, Baehexic\_50, BarryBee\_50, BartholomewSD\_50, BeardedLady\_47, Beemo\_51, Belenaria\_41, BengiVuitton\_53, Benvolio\_48, BlessJoy\_54, Blinn1\_56, Blue7\_55, BobSwaget\_47, BobbyDazzler\_41, BogosyJay\_50, Bonanza\_41, Bovely\_47, Bowden\_47, Bradshaw\_41, Brataylor\_50, BroPlease\_47, BryanRecycles\_48, Bryce\_40, Buggy\_53, CRB1\_55, Caelum\_49, Caliburn\_46, Candra\_53, Catalina\_52, Celery\_50, Celeste\_48, Centaur\_52, Changeling\_50, Charm\_50, Chartreuse\_52, Che12\_53, ChipMunk\_53, Chucky\_47, CloudWang3\_54, Colin\_51, Conan\_48, Conquerage\_51, Cookiedough\_53, CosmicSans\_41, Crucio\_51, DaVinci\_52, Dalmatian\_52, Danzina\_49, Darrell\_53, DarthPhader\_48, Dattran\_49, Daudau\_48, Deloris\_52, Dexters\_46, Diane\_47, Dignity\_53, Dinger\_40, Dorothea\_53, Drake55\_53,

DreamTeam1\_50, DudeLittle\_50, Dwayne\_47, ELB20\_47, EZMoney23\_49, EagleEye\_53, Echild\_51, Eddasa\_48, EdogawaKiddo\_49, Eidsmoe\_51, Ejemplo\_46, ElGato\_48, Elephantoon\_50, Emaanora\_50, EmyBug\_50, EnochSoames\_50, Equemioh13\_52, EricB\_53, Erik\_41, Esperer\_47, Espica\_41, EvilGenius\_53, ExplosioNervosa\_51, Fameo\_51, Fayely\_51, FiringLine\_51, First\_0053, Flare16\_51, Gail\_55, Garak\_56, GaugeLDP\_49, Georgie2\_52, GirlDinner\_47, Gladiator\_51, Goby\_47, Godpower\_48, Gollum\_41, GreedyLawyer\_53, GreenWeasel\_48, Gruunaga\_54, Haizum\_49, Hammer\_54, Hank144\_50, Hanray\_49, Harlequin\_40, HarryHoudini\_52, Heffalump\_50, Helmet\_56, Herbertwm\_51, Hexamo\_54, Hippo\_47, Hiro\_41, Horex\_50, Hoot\_48, HortumSL17\_51, Hydra\_48, Indigo\_46, Indra\_57, IronMan\_51, Isiphiwo\_51, Issmi\_49, Iwokeuplikedis\_54, Izzy\_48, Jaan\_51, Janus\_48, Jash\_48, Jeeves\_55, Jeffabunny\_54, Jerm\_53, Jester\_40, Jevington\_50, JewelBug\_54, Jiawan\_49, Jordennis\_53, JoshKayV\_53, Journey13\_45, Jsquared\_49, Kaine\_47, Kalpine\_49, Katalie\_47, Kazan\_54, Keziacharles14\_51, KingCyrus\_53, Kipper29\_53, Koduck\_52, Koko\_55, Krishelle\_41, L5\_50, LadyBird\_56, Landor\_51, Lannister\_49, Larenn\_50, Legacy\_46, Leviathan\_53, Leviticus\_47, Lika\_47, LiITurb\_52, Lilbunny\_53, Lilleskat\_49, Lillie\_41, LionsBait\_53, Lokk\_48, LoneWolf\_52, Loofah\_49, Lorelei\_48, Loser\_53, Luchador\_55, Lucyedi\_52, Malec\_51, Maminiaina\_50, Maneekul\_47, Marav\_51, McFly\_53, MiculUcigas\_51, Miko\_48, Myxus\_51, NaSiaTalie\_51, Nabi\_48, Naiad\_40, Nancinator\_41, Nanodon\_49, Natosaleda\_40, Neeharika16\_52, Nerdos\_46, Newrala\_53, NicoleTera\_50, Nishikigoi\_49, NothingSpecial\_49, Oliynyk\_48, Omar\_50, Onglai\_49, Ozzie\_46, OzzyJ\_48, Pablito\_48, PackMan\_50, Paedore\_48, PainterBoy\_52, Paolo\_50, Pavo\_48, Ph8s\_53, Phaded\_52, Phaeder\_51, PhailMary\_40, Pharaoh\_46, Phettuccine\_47, Phlei\_40, Phonnegut\_51, Phrankenstein\_41, Pioneer\_51, Piro94\_51, Pmask\_53, Polyphemus\_55, Power\_50, Priamo\_55, Priya\_51, Provolone\_48, Puginator\_50, Pukovnik\_50, Qobbit\_51, QueenB2\_50, QueenBeesly\_51, R4\_49, RER2\_34, RGL3\_35, Rachaly\_50, Rahalelujah\_51, Rana\_48, Rasputin\_41, RedBear\_48, Refuge\_50, Retro23\_52, RexFury\_40, Rhodalysa\_41, Rifter\_54, Roksolana\_55, Rusticus\_48, RyeScarlet\_52, Sachima\_48, Saftant\_47, SarahRose\_47, Scherzo\_51, SemperFi\_52, Serenity\_51, SheaKeira\_50, Shuman\_41, Smeagan\_54, SmellyB\_53, SnapTap\_51, Snorlax\_47, SororFago\_53, South40\_47, Speedwell\_52, Spouty\_51, SqueakyClean\_47, StCroix\_40, Steamy\_47, Sujidade\_48, Sunhee\_54, SunsetPointe\_46, SuperAwesome\_53, SuperCallie99\_52, Superchunk\_50, Superstar\_52, Swann\_41, SweetiePie\_51, SwirlSquare\_56, TWAMP\_41, TagePhighter\_49, Takoda\_41, TarsusIV\_50, Tefunt\_49, Temprado\_56, Thestral\_49, TinaBelcher\_47, TipsytheTRex\_47, Toaka\_51, Toma\_47, ToneTone\_51, Tristan\_49, Triumph\_50, Trixie\_49, Trooper\_52, TuanPN\_46, Tubs\_51, Tucker\_54, Turbido\_52, Ugenie5\_48, UhSalsa\_41, Unstoppable\_47, Updawg\_52, VA6\_52, Vanisoa\_51, Vanseggelen\_52, Verabelle\_51, Verse\_47, VohminGhazi\_53, WeiHuaDA\_53, Werner\_47, Whabigail7\_52, Whatever\_47, WideWale\_52, Wiks\_53, WunderPhul\_54, XianYue\_50, Yasdnil\_47, Yecey3\_52, Yogi\_40, Yokurt\_54, Yoncess\_40, Zainub\_50, Zaka\_54, Zemlya\_49, Zimmer\_48, Zulu\_55, phiHau3\_48,

Genes that have the "Most Annotated" start but do not call it:

- Acolyte\_47, Bradman\_50, Caraxes\_51, Gratitude\_51, Kinmap\_48, MajorMajor\_50, MissWhite\_50, Quokka\_49, Sknot\_53, Terrific\_54, TrvxScott\_46, phiCAM\_45,

Genes that do not have the "Most Annotated" start:

- ACFishhook\_53, AN9\_54, AN18\_54, AbbysRanger\_49, Abdiel\_50, Achebe\_48, AgentM\_42, Aglet\_55, AgronaGT15\_53, Airmid\_44, Albee\_50, Alberto7\_51, Alone3\_146, Amabiko\_45, Anaysia\_56, Anedea\_40, Aneem\_52, Angela\_40,

AnnaL29\_53, Annadreamy\_20, Annyong\_50, Anon\_52, Anthony\_47, Anubis\_57, Aragog\_42, Archetta\_43, Arturo\_49, Astro\_47, AugsMagnumOpus\_57, AvatarAhPeg\_48, Avle17\_50, B1\_46, BRock\_136, Baby16\_50, BabyJohn\_49, BabyRay\_51, Bachome\_53, Backyardigan\_48, Badger\_48, BangNhom\_51, Bartholomune\_41, Bartimeaus\_50, Battleship\_58, Battuta\_43, Beauxregard13\_54, Beleetus\_142, Belfort\_22, BellusTerra\_51, Benedict\_46, Beuffert\_19, BiancaTri92\_51, Bigflo\_54, BillNye\_16, Bimmel\_22, Birchlyn\_42, Blackmoor\_50, BlueBird\_53, BlueOtter\_43, Blueeyedbeauty\_22, Bluefalcon\_42, Bmoc\_41, Bombshell\_50, Bonamassa\_44, Boohoo\_56, BoomerJR\_45, Bordeaux\_43, Bowtie\_52, Braelyn\_41, BreSam8\_54, Broseidon\_50, Bruiser\_49, BubbleTrouble\_49, Bud\_51, Bugatti\_52, Bumblebee11\_48, Burger\_48, BuzzBuzz\_52, Bxz2\_50, C3\_49, Cadmus\_44, Caelakin\_50, Calvinny\_54, Camperdownii\_48, Caviar\_50, CeilingFan\_44, CentreCat\_50, Cerulean\_51, Chadwick\_47, ChampagnePapi\_52, Chaph\_50, Chargerpower\_50, Chiqui\_49, Chupacabra\_48, Cici\_49, Cindaradix\_47, Cintron\_49, Circinus\_18, Citius\_50, Clarenza\_49, Cocoaberry\_50, Colbster\_54, Commander\_50, Comrade\_21, Connomayer\_50, Conspiracy\_43, Coog\_43, Cross\_43, Cuco\_43, Cullens\_54, Cursive\_40, D29\_50, D32\_52, DBQu4n\_53, DaHudson\_54, Daishi\_53, Danforth\_47, Datway\_49, Daubenski\_44, Deano\_49, DekHockey33\_56, Dhanush\_50, Dieselweasel\_55, DirtyDunning\_49, Discoknowium\_42, Dixon\_47, DontArgue\_48, Dorin\_38, Drake94\_47, DroogsArmy\_46, DropBear\_51, Druantia\_50, Dublin\_42, Duplo\_53, DustyMartin\_53, EGole\_44, Eagle\_50, Eaglepride\_50, Eapen\_50, Ebony\_51, Edison31\_48, EITiger69\_45, Elmer\_47, Emma1919\_24, Enygma\_42, EpicPhail\_55, Epsocamisio\_54, Eris\_49, Eros\_50, Et2Brutus\_50, Eurydice\_51, Evy\_44, Expelliarmus\_47, Farber\_54, FatCactus\_43, Faust\_20, Fernando\_54, Fibonacci\_51, Flaverint\_52, Florean\_50, Flux\_50, FlyCatcher\_55, ForGetIt\_43, Forrest\_24, Francesca\_37, Francob\_20, Fred313\_51, Funston\_49, Gadost\_50, Gaia\_89, Garnacho\_141, Gemma\_53, Genie2\_45, George\_43, Ghoulboy\_45, GiJojo\_135, Gibbi\_48, Gilberta\_52, Gilson\_24, GingkoMaracino\_54, Giroux\_52, Goose\_49, Grif\_54, Groundhog\_46, Groupthink\_55, Grub\_54, Grum1\_54, GtownJaz\_54, HINdeR\_46, HamSlice\_49, HangryHippo\_43, Happiness\_49, HashRod\_55, HaveUMetTed\_55, Heathen\_51, HelDan\_51, Heliosoles\_53, Hercules11\_54, Holli\_49, Hookmount\_50, Houdini22\_50, HuhtaEnerson15\_44, Hutc2\_51, Huxley\_50, ICleared\_50, Ibantik\_27, Iceman\_50, IchabodCrane\_42, Idleandcovert\_52, Insomnia\_52, Iracema64\_51, Isca\_50, JF2\_49, JF4\_49, JHC117\_54, JSwag\_55, Jabiru\_44, Jabith\_52, Jada\_22, Jay2Jay\_47, Jaykayelowell\_48, JenCasNa\_55, JeppNRM\_55, JetBlade\_50, JimJam\_45, Jobu08\_53, Jollison\_44, JoongJeon\_49, Joselito\_52, Jovo\_43, KADY\_54, KFPoly\_49, Kachowdy\_51, Kalb97\_55, Kalnoky\_55, Kampy\_50, Karimac\_44, Karp\_20, Katalie136\_49, KatherineG\_57, Kenrey\_24, KentuckyRacer\_45, Kerberos\_53, Kimona\_50, Kingmustik0402\_50, KittenMittens\_46, Koan\_48, Koreni\_49, Kratark\_50, Kremtemulon\_50, Kristoff\_49, Kyee\_50, LBerry\_55, LHTSCC\_52, Lambert1\_50, LappelDuVide\_50, Larnav\_43, LarryKay\_54, LastResort\_55, Lemur\_50, Leo04\_43, LeoAvram\_50, Leogania\_51, Lev2\_43, Liandry\_41, LilMartin\_40, Lilith\_55, Limpid\_20, LittleB\_50, LittleCherry\_44, LittleGuy\_50, LochMonster\_51, Looper\_56, Lorenzo\_50, Louie6\_53, Iowa\_54, Lucivia\_52, LuckySocke\_141, LugYA\_57, LukeCage\_44, Lululemon\_42, Lunsford\_51, MA5\_51, MK4\_51, MaCh\_52, Mabel\_51, MadMarie\_54, Mainiac\_54, Malinsilva\_56, Manu\_54, MarQuardt\_54, Marchesa\_51, Margo\_50, Marie\_54, Marius\_55, Marsus\_41, MarysWell\_42, Maverick\_50, Maxo\_51, Mayonnaise\_50, Mazhar510\_50, Medusa\_50, MeeZee\_50, MeganTheeKilla\_22, Melvin\_52, Methuseloh\_50, Micasa\_45, Microwolf\_54, Midas2\_43, Milcery\_44, Mildred21\_41, Millski\_49, MindFlayer\_43, MinecraftSteve\_57, Miramae\_48, Misomonster\_55, Moab\_21, MoneyMay\_54, Morpher26\_49, Morrow\_51, MuchMore\_57, Mugiwara\_46,

MulchMansion\_40, Mulciber\_51, Munch\_52, Mundrea\_49, Muntaha\_16, MyraDee\_44, Naca\_45, Naji\_53, Navo\_40, NearlyHeadless\_47, Nebkiss\_88, Nebs\_51, Nebulosus\_55, Nedarya\_51, Nemo27\_50, Noella\_50, Noelle\_50, NootNoot\_38, Norbert\_49, NorthStar\_49, NotAPhaseMom\_50, Nova53\_37, Nyxis\_50, OKCentral2016\_48, OKaNui\_50, Obama12\_51, Odin\_50, Ohfah\_51, OlanP\_53, Ollie\_54, Oofda\_57, Orange\_51, P28Green\_55, PGHhamlin\_56, PP\_52, PacManQ\_42, Palestino\_49, Panamaxus\_48, Paradiddles\_38, Patelgo\_21, Pawn\_54, PeaceMeal1\_47, Peaches\_50, Peebs\_42, Pembroke\_54, Penny1\_55, Pepperwood\_43, Perplexer\_49, Persimmon\_38, PeterPeter\_50, Petersenfast\_50, PetiteSangsue\_49, PetterN\_47, Phacado\_50, Phantastic\_52, Phelipe\_51, Phighter1804\_50, Phillis\_49, PhishRPhriends\_52, Phlorence\_42, Phoebe\_55, Phontbonne\_50, Phoxy\_54, Phranny\_55, Phredrick\_22, PickleBack\_43, PinkiePie\_40, Pipcraft\_48, Pistachio\_53, Pocahontas\_50, Polymorphads\_51, Pomar16\_53, Ponzi\_21, Poompha\_48, Popcicle\_50, PotatoSplit\_56, Prinashe11\_44, Pumbaa\_50, PumpkinSpice\_44, Puppy\_53, PurpleHaze\_54, Quarant19\_45, QuinnKiro\_49, ReMo\_55, Reba\_54, Rebeuca\_49, RedRock\_53, Relief\_49, Remus\_56, ResDef\_50, RhynO\_50, Rikishi\_48, Riptide\_41, Roary\_48, Rockstar\_51, Romney\_50, Roosevelt\_49, Rosa24\_49, Rosalind\_55, Rowdy\_53, Ruin\_50, Rummer\_53, Sabertooth\_50, Sabia\_54, Sabinator\_53, Saintus\_42, SaltySpitoon\_45, Salz\_50, Samisti12\_42, SaturnRing\_52, Scamp\_50, Scheme\_43, Scorpia\_47, Scout\_51, SenorClean\_48, SeresaTree\_20, Severus\_47, Shaka\_50, Sham4\_51, Sham\_18, Shapes\_53, ShayRa\_57, Sheen\_51, SheldonCooper\_52, Shuckle\_41, Shygu2\_49, Skipitt\_49, Smeadley\_48, Snape\_51, Snickers\_54, SoYo\_54, SoilDragon\_54, Sollertia\_45, Soshari\_56, Soups\_57, SparkleGoddess\_21, Sparxx\_51, Spelly\_45, Spike509\_54, Spilled\_45, Spino\_49, Spooks\_22, Squillium\_41, Stagni\_54, Stanimal\_45, StarPlatinum\_44, StarStuff\_53, Starbow\_43, Stasia\_49, StepMih\_54, Stephig9\_48, Stigma\_21, Stink\_49, Strosahl\_56, Success\_23, Sushi23\_43, Swirley\_46, Switzerland\_56, SydNat\_45, TNguyen7\_52, Talos\_144, Taquarus\_50, Targaryen\_44, Tarynearal\_42, Taurus\_55, Deutsch\_42, Texage\_49, Thanksgivukkah\_49, Theia\_41, Tiffany\_54, Tiger\_42, Timothy\_51, Timshe1\_48, TinaFeyge\_50, TinyPebbles\_53, TinyTimmy\_51, Tinybot\_49, TiroTheta9\_50, Todacoro\_50, TomSawyer\_43, Tomas\_46, Tomathan\_53, Topanga\_47, Toro\_53, Travvers\_53, Tribute\_41, Trike\_47, TroyPia\_51, TunaTartare\_19, Twigg\_44, Twister\_47, TygerBlood\_50, Ulysses\_49, UnionJack\_44, VC3\_54, Veracruz\_49, Vix\_54, Waits\_56, Wakanda\_16, WalterMcMickey\_47, Wander\_50, Warpy\_47, Warrior24\_59, Watermoore\_42, Watson\_54, Westy\_21, WhereRU\_39, Wilbur\_50, Wile\_49, Wipeout\_42, Wizard007\_50, Wofford\_43, Wooldri\_56, Xena\_48, Yaboi\_45, YoSam321\_50, Yosif\_50, Zetzy\_53, Zolita\_44,

### Summary by start number:

#### Start 20:

- Found in 5 of 892 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 800
- Called 20.0% of time when present
- Phage (with cluster) where this start called: TrvxScott\_46 (BD2),

#### Start 24:

- Found in 2 of 892 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 800
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Naca\_45 (A5),

Start 26:

- Found in 6 of 892 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 800
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Yosif\_50 (BD3),

Start 34:

- Found in 21 of 892 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 17 of 800
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chupacabra\_48 (A10), DontArgue\_48 (A10), Drake94\_47 (A10), DustyMartin\_53 (A10), Eaglepride\_50 (A10), Edison31\_48 (A10), Goose\_49 (A10), KittenMittens\_46 (A10), Kristoff\_49 (A10), OKCentral2016\_48 (A10), PeaceMeal1\_47 (A10), Poompha\_48 (A10), Rebeuca\_49 (A10), RhynO\_50 (A10), Rowdy\_53 (A10), Severus\_47 (A10), Shapes\_53 (A10), Topanga\_47 (A10), Trike\_47 (A10), Twister\_47 (A10), WalterMcMickey\_47 (A10),

Start 36:

- Found in 1 of 892 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 800
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Odin\_50 (A2),

Start 37:

- Found in 3 of 892 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 800
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Acolyte\_47 (A2),

Start 40:

- Found in 23 of 892 ( 2.6% ) of genes in pham
- Manual Annotations of this start: 21 of 800
- Called 91.3% of time when present
- Phage (with cluster) where this start called: Anaysia\_56 (A15), Anon\_52 (A15), Battleship\_58 (A15), Boohoo\_56 (A15), DekHockey33\_56 (A15), Epsocamisio\_54 (A15), JSwag\_55 (A15), KatherineG\_57 (A15), LastResort\_55 (A15), Looper\_56 (A15), MinecraftSteve\_57 (A15), Nebulosus\_55 (A15), Nedarya\_51 (A15), ReMo\_55 (A15), Remus\_56 (A15), Rosalind\_55 (A15), ShayRa\_57 (A15), Soups\_57 (A15), Strosahl\_56 (A15), Switzerland\_56 (A15), Waits\_56 (A15),

Start 42:

- Found in 1 of 892 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 800
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RedRock\_53 (A2),

Start 43:

- Found in 4 of 892 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 3 of 800
- Called 75.0% of time when present
- Phage (with cluster) where this start called: AnnaL29\_53 (A2), BiancaTri92\_51 (A2), Leogania\_51 (A2),

Start 45:

- Found in 352 of 892 ( 39.5% ) of genes in pham
- Manual Annotations of this start: 304 of 800
- Called 96.6% of time when present
- Phage (with cluster) where this start called: 20ES\_54 (A2), 40AC\_52 (A17), Aaronocolus\_47 (BD1), AbbyPaige\_53 (A2), Adzzy\_53 (A2), Agape74\_53 (A2), Alatin\_40 (CA), Aliter\_51 (A9), Alma\_51 (A9), Alpacados\_40 (CA), Alsaber\_48 (BD3), Alvy\_50 (BD2), Amela\_47 (BD3), Amethyst\_47 (BD2), Andris\_48 (BD2), AngryOrchard\_39 (CA), Animus\_47 (BD2), Anselm\_52 (A2), AppleCloud\_38 (CA), ArcherNM\_46 (A2), Arissanae\_50 (A9), Artemis2UCLA\_54 (A6), Asten\_47 (BD1), Axiom\_52 (BD2), BABullseye\_47 (A6), BabyBack\_50 (A2), Bactobuster\_50 (A2), Baehexic\_50 (A2), BarryBee\_50 (BD1), BartholomewSD\_50 (BD2), BeardedLady\_47 (BD1), Beemo\_51 (A9), Belenaria\_41 (CA), BengiVuitton\_53 (A2), Benvolio\_48 (A2), BlessJoy\_54 (A6), Blinn1\_56 (A6), Blue7\_55 (A6), BobSwaget\_47 (A2), BobbyDazzler\_41 (CA), BogosyJay\_50 (A9), Bonanza\_41 (CA), Bovely\_47 (BD1), Bowden\_47 (BD2), Bradshaw\_41 (CA), Brataylor\_50 (BD1), BroPlease\_47 (BD4), BryanRecycles\_48 (BD1), Bryce\_40 (CA), Buggy\_53 (A2), CRB1\_55 (A2), Caelum\_49 (BD2), Caliburn\_46 (BD1), Candra\_53 (A6), Catalina\_52 (A9), Celery\_50 (BD3), Celeste\_48 (BD1), Centaur\_52 (A2), Changeling\_50 (A2), Charm\_50 (A9), Chartreuse\_52 (A6), Che12\_53 (A2), ChipMunk\_53 (A2), Chucky\_47 (BD1), CloudWang3\_54 (A6), Colin\_51 (A2), Conan\_48 (BD3), Conquerage\_51 (A9), Cookiedough\_53 (A6), CosmicSans\_41 (CA), Crucio\_51 (A2), DaVinci\_52 (A6), Dalmatian\_52 (A2), Danzina\_49 (BD1), Darrell\_53 (A9), DarthPhader\_48 (A12), Dattran\_49 (BD1), Daudau\_48 (BD2), Deloris\_52 (A2), Dexers\_46 (BD3), Diane\_47 (BD2), Dignity\_53 (A2), Dinger\_40 (CA), Dorothea\_53 (A6), Drake55\_53 (A2), DreamTeam1\_50 (A9), DudeLittle\_50 (A2), Dwayne\_47 (BD1), ELB20\_47 (BD2), EZMoney23\_49 (A2), EagleEye\_53 (A16), Echild\_51 (A2), Eddasa\_48 (BD1), EdogawaKiddo\_49 (A9), Eidsmoe\_51 (A9), Ejemplo\_46 (BD1), ElGato\_48 (BD3), Elephantoon\_50 (A9), Emaanora\_50 (BD1), EmyBug\_50 (A9), EnochSoames\_50 (BD1), Equemioh13\_52 (A2), EricB\_53 (A6), Erik\_41 (CA), Esperer\_47 (BD1), Espica\_41 (CA), EvilGenius\_53 (A2), ExplosioNervosa\_51 (A9), Fameo\_51 (A2), Fayely\_51 (A9), FiringLine\_51 (A2), First\_0053 (A2), Flare16\_51 (A2), Gail\_55 (A14), Garak\_56 (A6), GaugeLDP\_49 (A2), Georgie2\_52 (A2), GirlDinner\_47 (BD2), Gladiator\_51 (A6), Goby\_47 (BD1), Godpower\_48 (BD1), Gollum\_41 (CA), GreedyLawyer\_53 (A6), GreenWeasel\_48 (BD4), Gruunaga\_54 (A6), Haizum\_49 (BD2), Hammer\_54 (A6), Hank144\_50 (BD2), Hanray\_49 (A9), Harlequin\_40 (CA), HarryHoudini\_52 (A2), Heffalump\_50 (A2), Helmet\_56 (A6), Herbertwm\_51 (A2), Hexamo\_54 (A6), Hippo\_47 (BD1), Hiro\_41 (CA), Horex\_50 (A9), Hoot\_48 (A6), HortumSL17\_51 (A9), Hydra\_48 (BD1), Indigo\_46 (BD1), Indra\_57 (A6), IronMan\_51 (A2), Isiphiwo\_51 (A6), Issmi\_49 (BD2), Iwokeuplikedis\_54 (A2), Izzy\_48 (BD1), Jaan\_51 (A2), Janus\_48 (BD2), Jash\_48 (BD1), Jeeves\_55 (A14), Jeffabunny\_54 (A6), Jerm\_53 (A2), Jester\_40 (CA), Jevington\_50 (BD2), JewelBug\_54 (A6), Jiawan\_49 (A9), Jordennis\_53 (A6), JoshKayV\_53 (A2), Journey13\_45 (A2), Jsquared\_49 (A2), Kaine\_47 (BD3), Kalpine\_49 (A2), Katalie\_47 (BD1), Kazan\_54 (A6), Keziacharles14\_51 (A9), KingCyrus\_53 (A2), Kipper29\_53 (A6), Koduck\_52 (A2), Koko\_55 (A6), Krishelle\_41 (CA), L5\_50 (A2), LadyBird\_56 (A2), Landor\_51 (A2), Lannister\_49 (BD1), Larenn\_50 (A2), Legacy\_46 (BD1), Leviathan\_53 (A2), Leviticus\_47 (BD1), Lika\_47 (BD1), LiITurb\_52 (A2), Lilbunny\_53 (A6), Lilleskat\_49 (A9), Lillie\_41 (CA), LionsBait\_53 (A2), Lokk\_48 (A2), LoneWolf\_52 (A9), Loofah\_49 (BD2), Lorelei\_48 (BD1), Loser\_53 (A2), Luchador\_55 (A14), Lucyedi\_52 (A16), Malec\_51 (A2), Maminina\_50 (A9), Maneekul\_47 (BD1), Marav\_51 (BD2), McFly\_53 (A6), MiculUcigas\_51 (A2), Miko\_48 (A2), Myxus\_51 (A9), NaSiaTalie\_51 (A2), Nabi\_48 (BD1), Naiad\_40 (CA), Nancinator\_41 (CA), Nanodon\_49 (BD1),



Natosaleda\_40 (CA), Neeharika16\_52 (A6), Nerdos\_46 (BD1), Newrala\_53 (A6), NicoleTera\_50 (A2), Nishikigoi\_49 (BD2), NothingSpecial\_49 (A2), Oliynyk\_48 (BD1), Omar\_50 (BD2), Onglai\_49 (A9), Ozzie\_46 (BD1), OzzyJ\_48 (BD1), Pablito\_48 (BD2), PackMan\_50 (A9), Paedore\_48 (BD2), PainterBoy\_52 (A16), Paolo\_50 (BD2), Pavo\_48 (BD3), Ph8s\_53 (A2), Phaded\_52 (A2), Phaeder\_51 (A9), PhailMary\_40 (CA), Pharaoh\_46 (A12), Phettuccine\_47 (BD1), Phlei\_40 (A13), Phonnegut\_51 (A9), Phrankenstien\_41 (CA), Pioneer\_51 (A9), Piro94\_51 (A2), Pmask\_53 (A6), Polyphemus\_55 (A6), Power\_50 (A2), Priamo\_55 (A6), Priya\_51 (A9), Provolone\_48 (BD3), Puginator\_50 (BD2), Pukovnik\_50 (A2), Qobbit\_51 (A9), QueenB2\_50 (A2), QueenBeesly\_51 (A2), R4\_49 (BD2), RER2\_34 (CA), RGL3\_35 (CA), Rachaly\_50 (A2), Rahalelujah\_51 (A9), Rana\_48 (BD1), Rasputin\_41 (CA), RedBear\_48 (BD1), Refuge\_50 (A12), Retro23\_52 (A2), RexFury\_40 (CA), Rhodalysa\_41 (CA), Rifter\_54 (A6), Roksolana\_55 (A6), Rusticus\_48 (BD1), RyeScarlet\_52 (A9), Sachima\_48 (A9), Saftant\_47 (BD3), SarahRose\_47 (BD1), Scherzo\_51 (A9), SemperFi\_52 (A2), Serenity\_51 (A2), SheaKeira\_50 (A9), Shuman\_41 (CA), Smeagan\_54 (A2), SmellyB\_53 (A6), SnapTap\_51 (A2), Snorlax\_47 (BD1), SororFago\_53 (A14), South40\_47 (BD1), Speedwell\_52 (BD3), Spouty\_51 (A9), SqueakyClean\_47 (BD2), StCroix\_40 (CA), Steamy\_47 (A12), Sujidade\_48 (BD1), Sunhee\_54 (A14), SunsetPointe\_46 (BD1), SuperAwesome\_53 (A6), SuperCallie99\_52 (A6), Superchunk\_50 (A2), Superstar\_52 (BD2), Swann\_41 (CA), SweetiePie\_51 (A2), SwirlSquare\_56 (A2), TWAMP\_41 (CA), TagePghter\_49 (BD1), Takoda\_41 (CA), TarsusIV\_50 (A2), Tefunt\_49 (BD2), Temprado\_56 (A6), Thestral\_49 (BD2), TinaBelcher\_47 (BD2), TipsytheTRex\_47 (A2), Toaka\_51 (A9), Toma\_47 (BD1), ToneTone\_51 (A6), Tristan\_49 (A2), Triumph\_50 (BD2), Trixie\_49 (A2), Trooper\_52 (A2), TuanPN\_46 (BD1), Tubs\_51 (A9), Tucker\_54 (A6), Turbido\_52 (A2), Ugenie5\_48 (A9), UhSalsa\_41 (CA), Unstoppable\_47 (BD1), Updawg\_52 (A2), VA6\_52 (A2), Vanisoa\_51 (A9), Vanseggelen\_52 (BD3), Verabelle\_51 (BD3), Verse\_47 (BD3), VohminGhazi\_53 (A6), WeiHuaDA\_53 (A2), Werner\_47 (BD1), Whabigail7\_52 (A2), Whatever\_47 (BD1), WideWale\_52 (A2), Wiks\_53 (A6), WunderPhul\_54 (A6), XianYue\_50 (A2), YasdniI\_47 (BD1), Yecey3\_52 (A9), Yogi\_40 (CA), Yokurt\_54 (A6), Yoncess\_40 (CA), Zainub\_50 (BD2), Zaka\_54 (A6), Zemlya\_49 (BD1), Zimmer\_48 (A12), Zulu\_55 (A6), phiHau3\_48 (BD4),

#### Start 47:

- Found in 1 of 892 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 800
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PP\_52 (A7),

#### Start 48:

- Found in 2 of 892 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 2 of 800
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gaia\_89 (X), Nebkiss\_88 (X),

#### Start 49:

- Found in 240 of 892 ( 26.9% ) of genes in pham
- Manual Annotations of this start: 219 of 800
- Called 97.9% of time when present
- Phage (with cluster) where this start called: AN9\_54 (A2), ANI8\_54 (A2), AbbysRanger\_49 (A4), Abdiel\_50 (A4), Achebe\_48 (A4), AgentM\_42 (A5), Airmid\_44 (A5), Albee\_50 (A4), Alberto7\_51 (A4), Annyong\_50 (A4), Anthony\_47 (A20), Aragog\_42 (A5), Archetta\_43 (A5), Arturo\_49 (A4), Astro\_47 (A8), AvatarAhPeg\_48

(A4), Avle17\_50 (A4), B1\_46 (A3), Baby16\_50 (A4), BabyJohn\_49 (A3), BabyRay\_51 (A3), Backyardigan\_48 (A4), Badger\_48 (A4), BangNhom\_51 (A4), Bartimeaus\_50 (A4), BellusTerra\_51 (A4), Benedict\_46 (A5), Blackmoor\_50 (A4), BlueBird\_53 (A3), Bluefalcon\_42 (A5), Bombshell\_50 (A4), Bonamassa\_44 (A5), Broseidon\_50 (A4), Bruiser\_49 (A4), BubbleTrouble\_49 (A4), Bugatti\_52 (A3), Bumblebee11\_48 (A4), Burger\_48 (A4), C3\_49 (A2), Caelakin\_50 (A4), Camperdownii\_48 (A4), CentreCat\_50 (A4), Cerulean\_51 (A4), Chadwick\_47 (A5), ChampagnePapi\_52 (A4), Chaph\_50 (A4), Chiqui\_49 (A3), Cici\_49 (A4), Cindaradix\_47 (A4), Cintron\_49 (A4), Citius\_50 (A4), Clarenza\_49 (A4), Cocoaberry\_50 (A4), Commander\_50 (A4), Connomayer\_50 (A4), Conspiracy\_43 (A5), Coog\_43 (A5), Cuco\_43 (A5), D29\_50 (A2), D32\_52 (A2), DBQu4n\_53 (A2), Danforth\_47 (A8), Datway\_49 (A4), Deano\_49 (A4), Dhanush\_50 (A4), DirtyDunning\_49 (A4), Discoknowium\_42 (A5), Dixon\_47 (A8), DroogsArmy\_46 (A7), DropBear\_51 (A3), Druantia\_50 (A4), Dublin\_42 (A5), Duplo\_53 (A2), Eagle\_50 (A4), Eapen\_50 (A4), ElTiger69\_45 (A5), Eris\_49 (A4), Eros\_50 (A4), Eurydice\_51 (A4), Expelliarmus\_47 (A8), FatCactus\_43 (A20), Florean\_50 (A4), Flux\_50 (A4), ForGetIt\_43 (A5), Fred313\_51 (A3), Funston\_49 (A4), Gadost\_50 (A4), Ghoulyboy\_45 (A5), Giroux\_52 (A3), Groundhog\_46 (A8), HINdeR\_46 (A7), HamSlice\_49 (A4), Happiness\_49 (A4), Heathen\_51 (A3), HelDan\_51 (A3), Holli\_49 (A4), Houdini22\_50 (A4), HuhtaEnerson15\_44 (A5), Huxley\_50 (A4), ICleared\_50 (A4), Iceman\_50 (A4), Idleandcovert\_52 (A3), Iracema64\_51 (A4), Isca\_50 (A3), JF2\_49 (A3), JF4\_49 (A3), Jabiru\_44 (A5), Jaykayelowell\_48 (A4), JetBlade\_50 (A4), JoongJeon\_49 (A4), Jovo\_43 (A5), KFPoly\_49 (A4), Kachowdy\_51 (A3), Kampy\_50 (A4), Katalie136\_49 (A4), Kerberos\_53 (A2), Kimona\_50 (A19), Kingmustik0402\_50 (A4), Koan\_48 (A4), Koreni\_49 (A4), Kratak\_50 (A4), Kremtemulon\_50 (A4), Kyee\_50 (A4), LHTSCC\_52 (A4), LappelDuVide\_50 (A4), Lemur\_50 (A4), LeoAvram\_50 (A4), Lev2\_43 (A5), LittleB\_50 (A4), LittleCherry\_44 (A5), LittleGuy\_50 (A4), LochMonster\_51 (A4), Lorenzo\_50 (A4), Lunsford\_51 (A4), MA5\_51 (A3), MK4\_51 (A3), Marchesa\_51 (A3), MarysWell\_42 (A5), Maverick\_50 (A4), Maxo\_51 (A4), Mayonnaise\_50 (A4), Mazhar510\_50 (A4), Medusa\_50 (A4), MeeZee\_50 (A4), Melvin\_52 (A4), Micasa\_45 (A5), Midas2\_43 (A5), Milcery\_44 (A5), Millski\_49 (A4), Miramae\_48 (A4), Morpher26\_49 (A4), Morrow\_51 (A4), Mundrea\_49 (A4), MyraDee\_44 (A18), Naji\_53 (A2), NearlyHeadless\_47 (A8), Nebs\_51 (A4), Nemo27\_50 (A4), Noelle\_50 (A4), NorthStar\_49 (A4), NotAPhaseMom\_50 (A4), Nyxis\_50 (A4), OKaNui\_50 (A4), Obama12\_51 (A4), Ohfah\_51 (A4), Palestino\_49 (A4), Peaches\_50 (A4), Perplexer\_49 (A4), PeterPeter\_50 (A4), PetiteSangsue\_49 (A4), PetterN\_47 (A5), Phacado\_50 (A4), Phantastic\_52 (A3), Felipe\_51 (A4), Phighter1804\_50 (A4), Phillis\_49 (A8), Phlorence\_42 (A5), Phontbonne\_50 (A4), PickleBack\_43 (A5), Pipcraft\_48 (A4), Pistachio\_53 (A3), Polymorphads\_51 (A4), Pomar16\_53 (A2), Prinashe11\_44 (A5), Pumbaa\_50 (A4), Puppy\_53 (A3), Relief\_49 (A4), Roary\_48 (A8), Rockstar\_51 (A3), Romney\_50 (A4), Roosevelt\_49 (A4), Rosa24\_49 (A4), Ruin\_50 (A4), Sabertooth\_50 (A4), Saintus\_42 (A8), SaturnRing\_52 (A3), Scamp\_50 (A4), Scorpia\_47 (A5), Scout\_51 (A3), SenorClean\_48 (A4), Shaka\_50 (A4), SheldonCooper\_52 (A4), Shygu2\_49 (A4), Skipitt\_49 (A4), Smeadley\_48 (A8), Sparxx\_51 (A4), Spino\_49 (A4), StarStuff\_53 (A2), Stasia\_49 (A4), Stephig9\_48 (A8), Stink\_49 (A4), Swirley\_46 (A5), TNguyen7\_52 (A3), Taquarus\_50 (A4), Tarynearal\_42 (A5), Thanksgivukkah\_49 (A4), Theia\_41 (A5), Tiger\_42 (A5), Timshel\_48 (A7), TinaFeyge\_50 (A4), Tinybot\_49 (A4), TiroTheta9\_50 (A4), Tomathan\_53 (A2), TroyPia\_51 (A4), Twigg\_44 (A5), TygerBlood\_50 (A4), Ulysses\_49 (A4), UnionJack\_44 (A5), VC3\_54 (A2), Wander\_50 (A4), Wilbur\_50 (A4), Wile\_49 (A4), Wizard007\_50 (A4), Xena\_48 (A4), YoSam321\_50 (A4),

Start 50:

- Found in 26 of 892 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 19 of 800
- Called 73.1% of time when present
- Phage (with cluster) where this start called: Aneem\_52 (A11), Bachome\_53 (A11), Bowtie\_52 (A11), Bud\_51 (A11), Chargerpower\_50 (A), Et2Brutus\_50 (A11), Fibonacci\_51 (A11), Flaverint\_52 (A11), Gilberta\_52 (A11), Hutc2\_51 (A11), Jabith\_52 (A11), Joselito\_52 (A11), MaCh\_52 (A11), Mulciber\_51 (A11), Munch\_52 (A11), Orange\_51 (A11), Sham4\_51 (A11), Snape\_51 (A11), TinyTimmy\_51 (A11),

#### Start 51:

- Found in 6 of 892 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 3 of 800
- Called 83.3% of time when present
- Phage (with cluster) where this start called: FlyCatcher\_55 (A7), Sheen\_51 (A7), SydNat\_45 (A5), Toro\_53 (A7), Zolita\_44 (A5),

#### Start 53:

- Found in 17 of 892 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 2 of 800
- Called 23.5% of time when present
- Phage (with cluster) where this start called: Scheme\_43 (BE1), Shuckle\_41 (BE1), Teutsch\_42 (BE1), Tribute\_41 (BE1),

#### Start 54:

- Found in 5 of 892 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 3 of 800
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bimmel\_22 (BT), Ibantik\_27 (singleton), Ponzi\_21 (singleton), Spooks\_22 (BT), Success\_23 (BT),

#### Start 55:

- Found in 100 of 892 ( 11.2% ) of genes in pham
- Manual Annotations of this start: 95 of 800
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ACFishhook\_53 (A3), Aglet\_55 (A3), AgronaGT15\_53 (A3), Anubis\_57 (A3), AugsMagnumOpus\_57 (A3), Beauxregard13\_54 (A3), Bigflo\_54 (A3), BreSam8\_54 (A3), BuzzBuzz\_52 (A3), Bxz2\_50 (A3), Calvinny\_54 (A3), Caviar\_50 (A3), Colbster\_54 (A3), Cullens\_54 (A3), DaHudson\_54 (A3), Daishi\_53 (A3), Dieselweasel\_55 (A3), EpicPhail\_55 (A3), Farber\_54 (A3), Fernando\_54 (A3), Gemma\_53 (A3), GingkoMaracino\_54 (A3), Grif\_54 (A3), Groupthink\_55 (A3), Grub\_54 (A3), Grum1\_54 (A3), GtownJaz\_54 (A3), HashRod\_55 (A3), HaveUMetTed\_55 (A3), Heliosoles\_53 (A3), Hercules11\_54 (A3), Hookmount\_50 (A3), JHC117\_54 (A3), JenCasNa\_55 (A3), JeppNRM\_55 (A3), Jobu08\_53 (A3), KADY\_54 (A3), Kalb97\_55 (A3), Kalnoky\_55 (A3), LBerry\_55 (A3), Lambert1\_50 (A3), LarryKay\_54 (A3), Lilith\_55 (A3), Louie6\_53 (A3), Lowa\_54 (A3), LugYA\_57 (A3), MadMarie\_54 (A3), Mainiac\_54 (A3), Malinsilva\_56 (A3), Manu\_54 (A3), MarQuardt\_54 (A3), Margo\_50 (A3), Marie\_54 (A3), Marius\_55 (A3), Methuselah\_50 (A3), Microwolf\_54 (A3), Misomonster\_55 (A3), MoneyMay\_54 (A3), MuchMore\_57 (A3), Noella\_50 (A3), Norbert\_49 (A3), OlanP\_53 (A3), Ollie\_54 (A3), P28Green\_55 (A3), PGHhamlin\_56 (A3), Panamaxus\_48 (A3), Pawn\_54 (A3), Pembroke\_54 (A3), Penny1\_55 (A3), PhishRPhriends\_52 (A3), Phoebe\_55 (A3), Phoxy\_54 (A3), Phranny\_55 (A3), Pocahontas\_50 (A3), Popcicle\_50 (A3), PotatoSplit\_56 (A3), PurpleHaze\_54 (A3), QuinnKiro\_49 (A3), Reba\_54 (A3),

ResDef\_50 (A3), Rummer\_53 (A3), Sabia\_54 (A3), Sabinator\_53 (A3), Snickers\_54 (A3), SoYo\_54 (A3), SoilDragon\_54 (A3), Soshari\_56 (A3), Spike509\_54 (A3), Stagni\_54 (A3), StepMih\_54 (A3), Taurus\_55 (A3), Texage\_49 (A3), Tiffany\_54 (A3), TinyPebbles\_53 (A3), Todacoro\_50 (A3), Veracruz\_49 (A3), Vix\_54 (A3), Watson\_54 (A3), Wooldri\_56 (A3), Zetzy\_53 (A3),

Start 61:

- Found in 59 of 892 ( 6.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.1% of time when present
- Phage (with cluster) where this start called: Gratitude\_51 (A2), Sknot\_53 (A2), Terrific\_54 (A2),

Start 63:

- Found in 3 of 892 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 2 of 800
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dorin\_38 (CG), Francesca\_37 (CG), Nova53\_37 (CG),

Start 64:

- Found in 78 of 892 ( 8.7% ) of genes in pham
- Manual Annotations of this start: 64 of 800
- Called 89.7% of time when present
- Phage (with cluster) where this start called: Amabiko\_45 (BE2), Anedea\_40 (BE1), Angela\_40 (BE1), Bartholomune\_41 (BE1), Battuta\_43 (BE2), Birchlyn\_42 (BE2), BlueOtter\_43 (BE1), Bmoc\_41 (BE1), BoomerJR\_45 (BE2), Bordeaux\_43 (BE2), Braelyn\_41 (BE1), Cadmus\_44 (BE1), CeilingFan\_44 (BE2), Cursive\_40 (BE1), Daubenski\_44 (BE1), EGole\_44 (BE1), Elmer\_47 (BE2), Enygma\_42 (BE2), Evy\_44 (BE1), Genie2\_45 (BE2), Gibbi\_48 (BE2), HangryHippo\_43 (BE1), IchabodCrane\_42 (BE2), Jay2Jay\_47 (BE1), JimJam\_45 (BE2), Jollison\_44 (BE2), Karimac\_44 (BE2), KentuckyRacer\_45 (BE2), Larnav\_43 (BE1), Leo04\_43 (BE1), Liandry\_41 (BE1), LilMartin\_40 (BE1), LukeCage\_44 (BE2), Lululemon\_42 (BE1), Marsus\_41 (BE1), Mildred21\_41 (BE1), MindFlayer\_43 (BE2), Mugiwara\_46 (BE2), MulchMansion\_40 (BE1), Navo\_40 (BE1), NootNoot\_38 (BE1), PacManQ\_42 (BE1), Paradiddles\_38 (BE1), Peebs\_42 (BE1), Pepperwood\_43 (BE1), Persimmon\_38 (BE1), PinkiePie\_40 (BE1), PumpkinSpice\_44 (BE2), Quarant19\_45 (BE2), Rikishi\_48 (BE2), Riptide\_41 (BE1), SaltySpittoon\_45 (BE2), Samisti12\_42 (BE1), Sollertia\_45 (BE2), Spelly\_45 (BE2), Spilled\_45 (BE2), Squillium\_41 (BE1), Stanimal\_45 (BE2), StarPlatinum\_44 (BE2), Starbow\_43 (BE2), Sushi23\_43 (BE1), Targaryen\_44 (BE1), TomSawyer\_43 (BE2), Tomas\_46 (BE2), Warpy\_47 (BE1), Watermoore\_42 (BE1), WhereRU\_39 (BE1), Wipeout\_42 (BE2), Wofford\_43 (BE2), Yaboi\_45 (BE2),

Start 65:

- Found in 28 of 892 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 26 of 800
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Annadreamy\_20 (BK1), Belfort\_22 (BK1), Beuffert\_19 (BK1), BillNye\_16 (BK2), Blueeyedbeauty\_22 (BK1), Circinus\_18 (BK2), Comrade\_21 (BK1), Emma1919\_24 (BK1), Faust\_20 (BK1), Forrest\_24 (BK1), Francob\_20 (BK1), Gilson\_24 (BK1), Jada\_22 (BK1), Karp\_20 (BK1), Kenrey\_24 (BK1), Limpid\_20 (BK1), MeganTheeKilla\_22 (BK1), Moab\_21 (BK1), Muntaha\_16 (BK2), Patelgo\_21 (BK1), Phredrick\_22 (BK1), SeresaTree\_20 (BK1), Sham\_18

(BK1), SparkleGoddess\_21 (BK1), Stigma\_21 (BK1), TunaTartare\_19 (BK1), Wakanda\_16 (BK2), Westy\_21 (BK1),

Start 67:

- Found in 41 of 892 ( 4.6% ) of genes in pham
- Manual Annotations of this start: 1 of 800
- Called 2.4% of time when present
- Phage (with cluster) where this start called: Cross\_43 (BE1),

Start 71:

- Found in 148 of 892 ( 16.6% ) of genes in pham
- Manual Annotations of this start: 1 of 800
- Called 1.4% of time when present
- Phage (with cluster) where this start called: Bradman\_50 (A2), MissWhite\_50 (A2),

Start 73:

- Found in 466 of 892 ( 52.2% ) of genes in pham
- Manual Annotations of this start: 3 of 800
- Called 1.3% of time when present
- Phage (with cluster) where this start called: Caraxes\_51 (A2), Insomnia\_52 (A11), Lucivia\_52 (A11), Oofda\_57 (A15), Timothy\_51 (A11), Warrior24\_59 (A15),

Start 88:

- Found in 440 of 892 ( 49.3% ) of genes in pham
- Manual Annotations of this start: 3 of 800
- Called 2.0% of time when present
- Phage (with cluster) where this start called: Ebony\_51 (A11), Kinmap\_48 (A21), Mabel\_51 (A11), MajorMajor\_50 (A2), Petersenfast\_50 (A11), Quokka\_49 (A2), Salz\_50 (A11), Travvers\_53 (A2), phiCAM\_45 (BD3),

Start 97:

- Found in 607 of 892 ( 68.0% ) of genes in pham
- Manual Annotations of this start: 1 of 800
- Called 0.2% of time when present
- Phage (with cluster) where this start called: George\_43 (A5),

Start 103:

- Found in 14 of 892 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 3 of 800
- Called 42.9% of time when present
- Phage (with cluster) where this start called: Alone3\_146 (BS), BRock\_136 (BS), Beleetus\_142 (BS), Garnacho\_141 (BS), LuckySocke\_141 (BS), Talos\_144 (BS),

Start 104:

- Found in 8 of 892 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 800
- Called 12.5% of time when present
- Phage (with cluster) where this start called: GiJojo\_135 (BS),

### **Summary by clusters:**

There are 35 clusters represented in this pham: singleton, BT, BS, A15, A14, A17, A16, A11, A10, A13, A12, A19, A18, BD4, A3, A2, BD1, A4, A7, BD2, A9, A5, A, BD3,

CA, A6, CG, BK1, BK2, A8, X, A20, A21, BE2, BE1,

Info for manual annotations of cluster A:

- Start number 50 was manually annotated 1 time for cluster A.

Info for manual annotations of cluster A10:

- Start number 34 was manually annotated 17 times for cluster A10.

Info for manual annotations of cluster A11:

- Start number 50 was manually annotated 18 times for cluster A11.
- Start number 73 was manually annotated 3 times for cluster A11.
- Start number 88 was manually annotated 3 times for cluster A11.

Info for manual annotations of cluster A12:

- Start number 45 was manually annotated 5 times for cluster A12.

Info for manual annotations of cluster A14:

- Start number 45 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A15:

- Start number 40 was manually annotated 21 times for cluster A15.

Info for manual annotations of cluster A16:

- Start number 45 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A18:

- Start number 49 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A19:

- Start number 49 was manually annotated 1 time for cluster A19.

Info for manual annotations of cluster A2:

- Start number 36 was manually annotated 1 time for cluster A2.
- Start number 37 was manually annotated 1 time for cluster A2.
- Start number 42 was manually annotated 1 time for cluster A2.
- Start number 43 was manually annotated 3 times for cluster A2.
- Start number 45 was manually annotated 81 times for cluster A2.
- Start number 49 was manually annotated 13 times for cluster A2.
- Start number 71 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A20:

- Start number 49 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A3:

- Start number 49 was manually annotated 18 times for cluster A3.
- Start number 55 was manually annotated 95 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 49 was manually annotated 137 times for cluster A4.

Info for manual annotations of cluster A5:

- Start number 24 was manually annotated 1 time for cluster A5.
- Start number 49 was manually annotated 34 times for cluster A5.
- Start number 51 was manually annotated 2 times for cluster A5.
- Start number 97 was manually annotated 1 time for cluster A5.

Info for manual annotations of cluster A6:

- Start number 45 was manually annotated 42 times for cluster A6.

Info for manual annotations of cluster A7:

- Start number 47 was manually annotated 1 time for cluster A7.
- Start number 49 was manually annotated 3 times for cluster A7.
- Start number 51 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster A8:

- Start number 49 was manually annotated 11 times for cluster A8.

Info for manual annotations of cluster A9:

- Start number 45 was manually annotated 35 times for cluster A9.

Info for manual annotations of cluster BD1:

- Start number 45 was manually annotated 54 times for cluster BD1.

Info for manual annotations of cluster BD2:

- Start number 20 was manually annotated 1 time for cluster BD2.
- Start number 45 was manually annotated 31 times for cluster BD2.

Info for manual annotations of cluster BD3:

- Start number 26 was manually annotated 1 time for cluster BD3.
- Start number 45 was manually annotated 11 times for cluster BD3.

Info for manual annotations of cluster BD4:

- Start number 45 was manually annotated 3 times for cluster BD4.

Info for manual annotations of cluster BE1:

- Start number 53 was manually annotated 2 times for cluster BE1.
- Start number 64 was manually annotated 34 times for cluster BE1.
- Start number 67 was manually annotated 1 time for cluster BE1.

Info for manual annotations of cluster BE2:

- Start number 64 was manually annotated 30 times for cluster BE2.

Info for manual annotations of cluster BK1:

- Start number 65 was manually annotated 22 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 65 was manually annotated 4 times for cluster BK2.

Info for manual annotations of cluster BS:

- Start number 103 was manually annotated 3 times for cluster BS.
- Start number 104 was manually annotated 1 time for cluster BS.

Info for manual annotations of cluster BT:

- Start number 54 was manually annotated 1 time for cluster BT.

Info for manual annotations of cluster CA:

- Start number 45 was manually annotated 35 times for cluster CA.

Info for manual annotations of cluster CG:

- Start number 63 was manually annotated 2 times for cluster CG.

Info for manual annotations of cluster X:

- Start number 48 was manually annotated 2 times for cluster X.

### **Gene Information:**

Gene: 20ES\_54 Start: 36264, Stop: 34231, Start Num: 45

Candidate Starts for 20ES\_54:

(Start: 45 @36264 has 304 MA's), (Start: 71 @36159 has 1 MA's), (Start: 73 @36150 has 3 MA's), (74, 36147), (78, 36126), (Start: 88 @36075 has 3 MA's), (Start: 97 @36024 has 1 MA's), (118, 35934), (126, 35877), (127, 35874), (141, 35814), (169, 35658), (170, 35649), (179, 35580), (192, 35544), (198, 35532), (203, 35514), (208, 35484), (209, 35481), (210, 35469), (212, 35451), (213, 35445), (214, 35442), (272, 35283), (283, 35238), (290, 35196), (311, 35058), (316, 35022), (329, 34956), (331, 34944), (344, 34884), (354, 34830), (357, 34812), (378, 34680), (382, 34671), (388, 34650), (393, 34617), (402, 34578), (403, 34575), (410, 34545), (417, 34524), (419, 34518), (432, 34461), (447, 34413), (451, 34404),

Gene: 40AC\_52 Start: 36996, Stop: 34954, Start Num: 45

Candidate Starts for 40AC\_52:

(Start: 45 @36996 has 304 MA's), (61, 36957), (Start: 71 @36894 has 1 MA's), (Start: 73 @36885 has 3 MA's), (74, 36882), (94, 36774), (102, 36726), (118, 36669), (141, 36549), (169, 36393), (179, 36315), (203, 36243), (204, 36240), (208, 36213), (209, 36210), (212, 36180), (213, 36174), (214, 36171), (237, 36063), (256, 36030), (270, 36009), (283, 35961), (287, 35937), (290, 35919), (293, 35886), (311, 35781), (316, 35745), (329, 35679), (331, 35667), (344, 35607), (354, 35553), (357, 35535), (361, 35502), (377, 35403), (393, 35340), (394, 35337), (398, 35313), (399, 35310), (403, 35298), (411, 35265), (432, 35184), (447, 35136),

Gene: ACFishhook\_53 Start: 35868, Stop: 33853, Start Num: 55

Candidate Starts for ACFishhook\_53:

(Start: 55 @35868 has 95 MA's), (Start: 71 @35775 has 1 MA's), (Start: 73 @35766 has 3 MA's), (Start: 88 @35691 has 3 MA's), (Start: 97 @35640 has 1 MA's), (116, 35559), (118, 35550), (127, 35493), (141, 35433), (154, 35373), (157, 35337), (169, 35277), (170, 35268), (179, 35199), (182, 35187), (203, 35127), (208, 35097), (209, 35094), (210, 35082), (212, 35064), (213, 35058), (214, 35055), (221, 35022), (253, 34920), (279, 34890), (304, 34719), (313, 34668), (316, 34647), (321, 34623), (329, 34581), (333, 34563), (343, 34515), (357, 34440), (363, 34398), (370, 34335), (371, 34329), (377, 34305), (402, 34200), (421, 34131), (426, 34113), (428, 34104), (432, 34083), (459, 34005), (465, 33969), (481, 33906),

Gene: AN9\_54 Start: 35980, Stop: 33899, Start Num: 49

Candidate Starts for AN9\_54:

(Start: 49 @35980 has 219 MA's), (78, 35842), (102, 35707), (116, 35659), (118, 35650), (127, 35590), (147, 35512), (153, 35473), (156, 35437), (169, 35374), (175, 35311), (179, 35296), (203, 35200), (208, 35170), (209, 35167), (212, 35137), (213, 35131), (214, 35128), (232, 35041), (270, 34966), (283, 34918), (286, 34903), (311, 34738), (329, 34636), (331, 34624), (344, 34564), (346, 34555),



(354, 34510), (356, 34498), (360, 34477), (363, 34450), (393, 34285), (398, 34258), (402, 34246), (411, 34210), (432, 34129),

Gene: ANI8\_54 Start: 35980, Stop: 33899, Start Num: 49

Candidate Starts for ANI8\_54:

(Start: 49 @35980 has 219 MA's), (78, 35842), (102, 35707), (116, 35659), (118, 35650), (127, 35590), (147, 35512), (153, 35473), (156, 35437), (169, 35374), (175, 35311), (179, 35296), (203, 35200), (208, 35170), (209, 35167), (212, 35137), (213, 35131), (214, 35128), (232, 35041), (270, 34966), (283, 34918), (286, 34903), (311, 34738), (329, 34636), (331, 34624), (344, 34564), (346, 34555), (354, 34510), (356, 34498), (360, 34477), (363, 34450), (393, 34285), (398, 34258), (402, 34246), (411, 34210), (432, 34129),

Gene: Aaronocolus\_47 Start: 31664, Stop: 33754, Start Num: 45

Candidate Starts for Aaronocolus\_47:

(Start: 45 @31664 has 304 MA's), (78, 31805), (79, 31820), (Start: 88 @31874 has 3 MA's), (90, 31880), (Start: 97 @31925 has 1 MA's), (116, 32006), (118, 32015), (132, 32093), (134, 32102), (141, 32135), (156, 32228), (161, 32252), (169, 32294), (179, 32372), (180, 32375), (203, 32462), (212, 32525), (214, 32534), (275, 32699), (279, 32711), (297, 32843), (302, 32870), (311, 32921), (313, 32936), (316, 32957), (329, 33023), (357, 33167), (358, 33173), (360, 33182), (365, 33218), (369, 33266), (371, 33278), (378, 33305), (384, 33317), (392, 33371), (404, 33422), (411, 33443), (421, 33476), (426, 33494), (432, 33524), (434, 33536), (443, 33563), (462, 33623), (478, 33692), (479, 33695), (485, 33746),

Gene: AbbyPaige\_53 Start: 36195, Stop: 34156, Start Num: 45

Candidate Starts for AbbyPaige\_53:

(Start: 45 @36195 has 304 MA's), (Start: 97 @35955 has 1 MA's), (118, 35865), (119, 35850), (141, 35745), (169, 35589), (179, 35511), (203, 35439), (208, 35409), (209, 35406), (210, 35394), (212, 35376), (213, 35370), (214, 35367), (272, 35208), (283, 35163), (290, 35121), (311, 34983), (316, 34947), (329, 34881), (331, 34869), (344, 34809), (354, 34755), (357, 34737), (402, 34503), (403, 34500), (417, 34449), (432, 34386), (447, 34338), (451, 34329), (484, 34188),

Gene: AbbysRanger\_49 Start: 35423, Stop: 33405, Start Num: 49

Candidate Starts for AbbysRanger\_49:

(Start: 49 @35423 has 219 MA's), (Start: 73 @35312 has 3 MA's), (92, 35222), (Start: 97 @35186 has 1 MA's), (102, 35153), (116, 35105), (118, 35096), (127, 35036), (141, 34976), (169, 34820), (170, 34811), (179, 34742), (182, 34730), (201, 34679), (203, 34670), (208, 34640), (209, 34637), (212, 34607), (213, 34601), (214, 34598), (248, 34478), (270, 34454), (279, 34430), (311, 34226), (329, 34124), (333, 34106), (343, 34055), (356, 33986), (360, 33965), (363, 33938), (392, 33794), (393, 33791), (399, 33761), (411, 33716), (426, 33665), (428, 33656), (432, 33635), (465, 33521), (479, 33464),

Gene: Abdiel\_50 Start: 35449, Stop: 33416, Start Num: 49

Candidate Starts for Abdiel\_50:

(Start: 49 @35449 has 219 MA's), (68, 35386), (Start: 73 @35338 has 3 MA's), (78, 35314), (92, 35248), (Start: 97 @35212 has 1 MA's), (102, 35179), (116, 35131), (118, 35122), (127, 35065), (134, 35038), (141, 35005), (169, 34849), (170, 34840), (179, 34771), (203, 34699), (208, 34669), (209, 34666), (212, 34636), (213, 34630), (214, 34627), (232, 34540), (244, 34510), (255, 34498), (261, 34489), (279, 34441), (311, 34237), (329, 34135), (333, 34117), (360, 33976), (363, 33949), (392, 33805), (393, 33802), (399, 33772), (417, 33709), (426, 33676), (428, 33667), (432, 33646), (447, 33598), (465, 33532),

Gene: Achebe\_48 Start: 35406, Stop: 33388, Start Num: 49

Candidate Starts for Achebe\_48:

(Start: 49 @35406 has 219 MA's), (Start: 73 @35295 has 3 MA's), (92, 35205), (Start: 97 @35169 has 1 MA's), (102, 35136), (116, 35088), (118, 35079), (127, 35019), (141, 34959), (169, 34803), (170, 34794), (179, 34725), (182, 34713), (201, 34662), (203, 34653), (208, 34623), (209, 34620), (212, 34590), (213, 34584), (214, 34581), (248, 34461), (270, 34437), (279, 34413), (311, 34209), (329, 34107), (333, 34089), (343, 34038), (356, 33969), (360, 33948), (363, 33921), (392, 33777), (393, 33774), (399, 33744), (411, 33699), (426, 33648), (428, 33639), (432, 33618), (465, 33504), (479, 33447),

Gene: Acolyte\_47 Start: 35157, Stop: 33094, Start Num: 37

Candidate Starts for Acolyte\_47:

(Start: 37 @35157 has 1 MA's), (38, 35154), (Start: 45 @35136 has 304 MA's), (Start: 73 @35028 has 3 MA's), (77, 35007), (Start: 97 @34902 has 1 MA's), (116, 34821), (118, 34812), (119, 34797), (128, 34749), (141, 34692), (156, 34599), (169, 34536), (179, 34458), (203, 34392), (208, 34362), (209, 34359), (212, 34329), (213, 34323), (214, 34320), (270, 34149), (272, 34146), (283, 34101), (311, 33921), (321, 33861), (329, 33819), (331, 33807), (333, 33801), (344, 33747), (357, 33675), (361, 33642), (363, 33633), (369, 33576), (382, 33531), (393, 33480), (398, 33453), (399, 33450), (402, 33441), (403, 33438), (417, 33387), (432, 33324),

Gene: Adzzy\_53 Start: 34679, Stop: 32661, Start Num: 45

Candidate Starts for Adzzy\_53:

(Start: 45 @34679 has 304 MA's), (Start: 71 @34577 has 1 MA's), (Start: 73 @34568 has 3 MA's), (Start: 88 @34493 has 3 MA's), (116, 34361), (118, 34352), (127, 34292), (141, 34232), (156, 34139), (158, 34130), (169, 34076), (174, 34028), (179, 33998), (197, 33953), (203, 33932), (208, 33902), (209, 33899), (212, 33869), (213, 33863), (214, 33860), (232, 33773), (270, 33716), (272, 33713), (283, 33668), (301, 33542), (311, 33488), (321, 33428), (326, 33401), (329, 33386), (344, 33314), (346, 33305), (357, 33242), (361, 33209), (363, 33200), (373, 33119), (380, 33101), (393, 33047), (402, 33008), (417, 32954), (432, 32891), (444, 32849), (477, 32726),

Gene: Agape74\_53 Start: 36189, Stop: 34150, Start Num: 45

Candidate Starts for Agape74\_53:

(Start: 45 @36189 has 304 MA's), (82, 36033), (Start: 97 @35949 has 1 MA's), (118, 35859), (119, 35844), (141, 35739), (169, 35583), (179, 35505), (203, 35433), (208, 35403), (209, 35400), (210, 35388), (212, 35370), (213, 35364), (214, 35361), (272, 35202), (283, 35157), (290, 35115), (311, 34977), (316, 34941), (329, 34875), (344, 34803), (354, 34749), (357, 34731), (393, 34536), (402, 34497), (403, 34494), (417, 34443), (432, 34380), (447, 34332), (451, 34323),

Gene: AgentM\_42 Start: 34160, Stop: 32091, Start Num: 49

Candidate Starts for AgentM\_42:

(Start: 49 @34160 has 219 MA's), (Start: 88 @33974 has 3 MA's), (Start: 97 @33923 has 1 MA's), (102, 33890), (116, 33842), (118, 33833), (141, 33713), (146, 33698), (164, 33587), (165, 33584), (169, 33557), (170, 33548), (176, 33488), (179, 33479), (184, 33455), (203, 33368), (208, 33338), (209, 33335), (212, 33305), (213, 33299), (214, 33296), (283, 33104), (308, 32942), (313, 32909), (322, 32861), (329, 32822), (343, 32753), (354, 32696), (356, 32684), (357, 32678), (363, 32636), (365, 32627), (392, 32480), (399, 32447), (410, 32405), (421, 32369), (426, 32351), (428, 32342), (482, 32132),

Gene: Aglet\_55 Start: 35907, Stop: 33889, Start Num: 55

Candidate Starts for Aglet\_55:

(Start: 55 @35907 has 95 MA's), (Start: 71 @35814 has 1 MA's), (Start: 73 @35805 has 3 MA's), (78, 35781), (Start: 88 @35730 has 3 MA's), (Start: 97 @35679 has 1 MA's), (116, 35598), (118, 35589), (141, 35469), (154, 35409), (157, 35373), (169, 35313), (179, 35235), (203, 35163), (208, 35133), (212, 35100), (213, 35094), (214, 35091), (230, 35010), (239, 34980), (279, 34926), (304, 34755), (321, 34659), (329, 34617), (333, 34599), (343, 34551), (346, 34539), (356, 34482), (357, 34476),

(360, 34461), (363, 34434), (370, 34371), (371, 34365), (377, 34341), (402, 34236), (421, 34167), (426, 34149), (428, 34140), (432, 34119), (459, 34041), (465, 34005), (481, 33942),

Gene: AgronaGT15\_53 Start: 35755, Stop: 33737, Start Num: 55

Candidate Starts for AgronaGT15\_53:

(Start: 55 @35755 has 95 MA's), (Start: 71 @35662 has 1 MA's), (Start: 73 @35653 has 3 MA's), (78, 35629), (Start: 88 @35578 has 3 MA's), (Start: 97 @35527 has 1 MA's), (116, 35446), (118, 35437), (141, 35320), (157, 35224), (169, 35164), (176, 35095), (179, 35086), (180, 35083), (182, 35074), (203, 35014), (208, 34984), (209, 34981), (210, 34969), (212, 34951), (213, 34945), (214, 34942), (235, 34837), (239, 34831), (279, 34774), (311, 34570), (313, 34555), (316, 34534), (321, 34510), (326, 34483), (329, 34468), (356, 34330), (357, 34324), (360, 34309), (363, 34282), (370, 34219), (371, 34213), (377, 34189), (402, 34084), (411, 34048), (432, 33967), (459, 33889), (465, 33853), (481, 33790),

Gene: Airmid\_44 Start: 34153, Stop: 32126, Start Num: 49

Candidate Starts for Airmid\_44:

(Start: 49 @34153 has 219 MA's), (Start: 88 @33967 has 3 MA's), (Start: 97 @33916 has 1 MA's), (102, 33883), (116, 33835), (118, 33826), (123, 33784), (147, 33688), (153, 33649), (158, 33604), (168, 33559), (169, 33550), (175, 33487), (176, 33481), (179, 33472), (203, 33400), (208, 33370), (209, 33367), (212, 33337), (213, 33331), (214, 33328), (260, 33205), (283, 33139), (290, 33097), (308, 32977), (310, 32962), (313, 32944), (322, 32896), (329, 32857), (343, 32788), (354, 32731), (356, 32719), (357, 32713), (363, 32671), (365, 32662), (372, 32599), (394, 32509), (399, 32482), (410, 32440), (421, 32404), (426, 32386), (428, 32377), (482, 32167),

Gene: Alatin\_40 Start: 32141, Stop: 30096, Start Num: 45

Candidate Starts for Alatin\_40:

(Start: 45 @32141 has 304 MA's), (74, 32021), (87, 31952), (Start: 97 @31898 has 1 MA's), (116, 31817), (118, 31808), (127, 31748), (132, 31730), (154, 31628), (156, 31595), (157, 31592), (159, 31583), (164, 31562), (168, 31541), (169, 31532), (175, 31469), (179, 31454), (181, 31448), (203, 31388), (209, 31355), (212, 31325), (213, 31319), (214, 31316), (252, 31181), (304, 30968), (310, 30935), (326, 30845), (328, 30836), (354, 30704), (363, 30644), (372, 30572), (385, 30533), (387, 30530), (388, 30518), (402, 30446), (421, 30374), (428, 30347), (465, 30212),

Gene: Albee\_50 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Albee\_50:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Alberto7\_51 Start: 35785, Stop: 33752, Start Num: 49

Candidate Starts for Alberto7\_51:

(Start: 49 @35785 has 219 MA's), (68, 35722), (Start: 73 @35674 has 3 MA's), (78, 35650), (92, 35584), (Start: 97 @35548 has 1 MA's), (102, 35515), (116, 35467), (118, 35458), (127, 35401), (134, 35374), (141, 35341), (169, 35185), (170, 35176), (179, 35107), (203, 35035), (208, 35005), (209, 35002), (212, 34972), (213, 34966), (214, 34963), (232, 34876), (244, 34846), (255, 34834), (261, 34825), (279, 34777), (311, 34573), (329, 34471), (333, 34453), (360, 34312), (363, 34285), (392, 34141), (393, 34138), (399, 34108), (417, 34045), (426, 34012), (428, 34003), (432, 33982), (447, 33934), (465, 33868),

Gene: Aliter\_51 Start: 35598, Stop: 33559, Start Num: 45

Candidate Starts for Aliter\_51:

(Start: 45 @35598 has 304 MA's), (Start: 73 @35484 has 3 MA's), (75, 35469), (78, 35460), (Start: 97 @35358 has 1 MA's), (118, 35268), (127, 35208), (141, 35148), (168, 35001), (169, 34992), (179, 34914), (182, 34902), (202, 34857), (203, 34848), (208, 34818), (210, 34803), (212, 34785), (213, 34779), (214, 34776), (272, 34611), (280, 34587), (283, 34566), (311, 34386), (331, 34272), (344, 34212), (361, 34107), (363, 34098), (393, 33945), (399, 33915), (417, 33852), (432, 33789),

Gene: Alma\_51 Start: 35778, Stop: 33757, Start Num: 45

Candidate Starts for Alma\_51:

(Start: 45 @35778 has 304 MA's), (Start: 73 @35664 has 3 MA's), (102, 35505), (118, 35448), (127, 35388), (128, 35385), (141, 35328), (169, 35172), (179, 35094), (182, 35082), (203, 35028), (210, 34983), (212, 34965), (213, 34959), (214, 34956), (272, 34809), (283, 34764), (311, 34584), (316, 34548), (331, 34470), (344, 34410), (361, 34305), (363, 34296), (393, 34143), (399, 34113), (417, 34050), (432, 33987), (484, 33789),

Gene: Alone3\_146 Start: 78919, Stop: 80550, Start Num: 103

Candidate Starts for Alone3\_146:

(Start: 103 @78919 has 3 MA's), (Start: 104 @78925 has 1 MA's), (108, 78937), (124, 79030), (130, 79054), (138, 79093), (152, 79159), (157, 79198), (162, 79222), (172, 79279), (173, 79288), (177, 79321), (202, 79354), (212, 79426), (218, 79456), (220, 79462), (226, 79495), (227, 79501), (270, 79603), (279, 79627), (284, 79657), (306, 79783), (326, 79894), (328, 79903), (345, 79975), (366, 80104), (376, 80173), (379, 80176), (396, 80245), (407, 80287), (411, 80299), (420, 80329), (425, 80350), (432, 80383), (442, 80416), (456, 80449), (458, 80455), (470, 80518), (472, 80527),

Gene: Alpacados\_40 Start: 32046, Stop: 30001, Start Num: 45

Candidate Starts for Alpacados\_40:

(Start: 45 @32046 has 304 MA's), (74, 31926), (87, 31857), (Start: 97 @31803 has 1 MA's), (116, 31722), (118, 31713), (127, 31653), (154, 31533), (156, 31500), (157, 31497), (159, 31488), (164, 31467), (168, 31446), (169, 31437), (175, 31374), (179, 31359), (181, 31353), (203, 31293), (209, 31260), (212, 31230), (213, 31224), (214, 31221), (252, 31086), (301, 30891), (304, 30873), (326, 30750), (328, 30741), (354, 30609), (363, 30549), (372, 30477), (385, 30438), (387, 30435), (388, 30423), (393, 30390), (402, 30351), (421, 30279), (428, 30252), (432, 30231), (436, 30213), (459, 30153), (465, 30117),

Gene: Alsaber\_48 Start: 33339, Stop: 35402, Start Num: 45

Candidate Starts for Alsaber\_48:

(12, 33237), (13, 33243), (Start: 45 @33339 has 304 MA's), (61, 33378), (Start: 71 @33441 has 1 MA's), (Start: 73 @33450 has 3 MA's), (81, 33501), (82, 33507), (Start: 88 @33540 has 3 MA's), (Start: 97 @33591 has 1 MA's), (118, 33681), (119, 33696), (134, 33768), (141, 33801), (161, 33918), (169, 33960), (179, 34038), (180, 34041), (184, 34062), (203, 34128), (212, 34191), (214, 34200), (270, 34341), (279, 34365), (307, 34554), (316, 34611), (340, 34734), (363, 34860), (365, 34869), (388, 34986), (389, 34998), (392, 35022), (393, 35025), (404, 35073), (421, 35127), (426, 35145), (432, 35175), (451, 35229), (462, 35271), (481, 35349),

Gene: Alvy\_50 Start: 33162, Stop: 35276, Start Num: 45

Candidate Starts for Alvy\_50:

(Start: 45 @33162 has 304 MA's), (82, 33330), (Start: 88 @33363 has 3 MA's), (Start: 97 @33414 has 1 MA's), (116, 33495), (118, 33504), (134, 33591), (135, 33603), (141, 33624), (161, 33741), (169, 33783), (170, 33792), (179, 33861), (203, 33969), (208, 33999), (209, 34002), (212, 34032), (260, 34197), (269, 34206), (279, 34233), (294, 34353), (311, 34443), (313, 34458), (316, 34479), (323, 34506), (328, 34539), (329, 34545), (357, 34689), (358, 34695), (360, 34704), (365, 34740), (369, 34788), (371, 34800), (378, 34827), (384, 34839), (392, 34893), (394, 34899), (404, 34944), (411,

34965), (421, 34998), (426, 35016), (432, 35046), (462, 35145), (478, 35214), (485, 35268),

Gene: Amabiko\_45 Start: 19533, Stop: 21473, Start Num: 64

Candidate Starts for Amabiko\_45:

(Start: 64 @19533 has 64 MA's), (90, 19665), (96, 19701), (102, 19737), (111, 19764), (114, 19776), (133, 19881), (148, 19938), (185, 20163), (206, 20217), (217, 20301), (228, 20352), (235, 20391), (248, 20403), (285, 20481), (297, 20580), (306, 20616), (333, 20763), (366, 20937), (369, 20973), (389, 21042), (390, 21045), (430, 21216), (468, 21354),

Gene: Amela\_47 Start: 34136, Stop: 36250, Start Num: 45

Candidate Starts for Amela\_47:

(8, 34010), (14, 34049), (16, 34055), (Start: 45 @34136 has 304 MA's), (61, 34178), (Start: 71 @34241 has 1 MA's), (Start: 73 @34250 has 3 MA's), (81, 34301), (82, 34307), (Start: 88 @34340 has 3 MA's), (109, 34445), (116, 34475), (118, 34484), (132, 34562), (134, 34571), (135, 34583), (141, 34604), (147, 34622), (161, 34721), (169, 34763), (170, 34772), (179, 34841), (180, 34844), (203, 34949), (208, 34979), (209, 34982), (212, 35012), (269, 35186), (275, 35201), (279, 35213), (290, 35279), (302, 35372), (316, 35459), (329, 35525), (340, 35582), (348, 35615), (363, 35708), (365, 35717), (388, 35834), (389, 35846), (392, 35870), (393, 35873), (404, 35921), (421, 35975), (426, 35993), (432, 36023), (443, 36059), (449, 36071), (451, 36077), (462, 36119), (481, 36197),

Gene: Amethyst\_47 Start: 32641, Stop: 34839, Start Num: 45

Candidate Starts for Amethyst\_47:

(38, 32623), (Start: 45 @32641 has 304 MA's), (79, 32797), (82, 32818), (Start: 88 @32851 has 3 MA's), (90, 32857), (116, 32983), (118, 32992), (134, 33079), (135, 33091), (141, 33112), (161, 33229), (169, 33271), (170, 33280), (179, 33349), (203, 33547), (208, 33577), (209, 33580), (212, 33610), (275, 33784), (279, 33796), (311, 34006), (316, 34042), (329, 34108), (355, 34240), (357, 34252), (358, 34258), (360, 34267), (365, 34303), (371, 34363), (375, 34381), (392, 34456), (394, 34462), (404, 34507), (417, 34546), (421, 34561), (426, 34579), (432, 34609), (449, 34660), (451, 34666), (462, 34708), (485, 34831),

Gene: Anaysia\_56 Start: 34919, Stop: 32856, Start Num: 40

Candidate Starts for Anaysia\_56:

(Start: 40 @34919 has 21 MA's), (87, 34724), (Start: 88 @34721 has 3 MA's), (116, 34589), (118, 34580), (141, 34460), (170, 34295), (174, 34256), (179, 34226), (194, 34184), (203, 34160), (208, 34130), (212, 34097), (213, 34091), (214, 34088), (270, 33914), (275, 33902), (283, 33866), (310, 33689), (311, 33686), (316, 33650), (329, 33584), (337, 33545), (339, 33533), (356, 33446), (357, 33440), (363, 33398), (411, 33167), (432, 33086), (452, 33026), (459, 33008), (479, 32915), (482, 32897),

Gene: Andris\_48 Start: 32794, Stop: 34884, Start Num: 45

Candidate Starts for Andris\_48:

(Start: 45 @32794 has 304 MA's), (79, 32950), (Start: 88 @33004 has 3 MA's), (90, 33010), (Start: 97 @33055 has 1 MA's), (116, 33136), (118, 33145), (134, 33232), (135, 33244), (141, 33265), (161, 33382), (169, 33424), (170, 33433), (179, 33502), (190, 33547), (203, 33592), (212, 33655), (246, 33784), (270, 33817), (279, 33841), (311, 34051), (316, 34087), (329, 34153), (357, 34297), (358, 34303), (360, 34312), (365, 34348), (368, 34387), (371, 34408), (384, 34447), (389, 34477), (392, 34501), (421, 34606), (426, 34624), (434, 34666), (462, 34753), (478, 34822), (485, 34876),

Gene: Anedea\_40 Start: 18408, Stop: 20351, Start Num: 64

Candidate Starts for Anedea\_40:

(Start: 64 @18408 has 64 MA's), (Start: 67 @18414 has 1 MA's), (83, 18516), (86, 18537), (90, 18546), (106, 18636), (111, 18645), (112, 18654), (114, 18657), (133, 18762), (185, 19044), (198, 19071), (217, 19182), (235, 19272), (248, 19284), (306, 19497), (333, 19644), (336, 19662), (366, 19818),

(390, 19926), (430, 20097), (438, 20136), (468, 20235), (483, 20307), (487, 20337),

Gene: Aneem\_52 Start: 35307, Stop: 33283, Start Num: 50

Candidate Starts for Aneem\_52:

(28, 35358), (41, 35325), (Start: 50 @35307 has 19 MA's), (Start: 73 @35199 has 3 MA's), (Start: 88 @35124 has 3 MA's), (116, 34992), (118, 34983), (141, 34863), (169, 34707), (174, 34659), (178, 34632), (179, 34629), (182, 34617), (197, 34584), (203, 34563), (210, 34518), (212, 34500), (213, 34494), (214, 34491), (270, 34341), (283, 34293), (286, 34278), (311, 34113), (329, 34011), (333, 33993), (347, 33921), (357, 33867), (360, 33852), (361, 33834), (393, 33672), (402, 33633), (426, 33543), (432, 33513), (447, 33465),

Gene: Angela\_40 Start: 18390, Stop: 20333, Start Num: 64

Candidate Starts for Angela\_40:

(52, 18345), (Start: 64 @18390 has 64 MA's), (Start: 67 @18396 has 1 MA's), (83, 18498), (86, 18519), (90, 18528), (106, 18618), (111, 18627), (112, 18636), (114, 18639), (133, 18744), (144, 18786), (176, 18996), (198, 19053), (217, 19164), (235, 19254), (248, 19266), (306, 19479), (307, 19488), (324, 19584), (333, 19626), (366, 19800), (390, 19908), (430, 20079), (438, 20118), (468, 20217),

Gene: AngryOrchard\_39 Start: 31939, Stop: 29894, Start Num: 45

Candidate Starts for AngryOrchard\_39:

(Start: 45 @31939 has 304 MA's), (74, 31819), (85, 31756), (87, 31750), (Start: 97 @31696 has 1 MA's), (116, 31615), (118, 31606), (154, 31426), (156, 31393), (157, 31390), (159, 31381), (164, 31360), (168, 31339), (169, 31330), (179, 31252), (181, 31246), (203, 31186), (212, 31123), (213, 31117), (214, 31114), (252, 30979), (301, 30784), (304, 30766), (328, 30634), (354, 30502), (363, 30442), (372, 30370), (378, 30346), (385, 30331), (387, 30328), (388, 30316), (393, 30283), (402, 30244), (421, 30172), (428, 30145), (465, 30010),

Gene: Animus\_47 Start: 33036, Stop: 35159, Start Num: 45

Candidate Starts for Animus\_47:

(Start: 45 @33036 has 304 MA's), (79, 33192), (Start: 88 @33246 has 3 MA's), (90, 33252), (Start: 97 @33297 has 1 MA's), (116, 33378), (118, 33387), (134, 33474), (135, 33486), (141, 33507), (161, 33624), (169, 33666), (179, 33744), (190, 33801), (203, 33852), (212, 33915), (273, 34098), (279, 34116), (311, 34326), (316, 34362), (329, 34428), (346, 34509), (357, 34572), (358, 34578), (360, 34587), (365, 34623), (369, 34671), (371, 34683), (378, 34710), (384, 34722), (389, 34752), (392, 34776), (421, 34881), (426, 34899), (462, 35028), (478, 35097), (485, 35151),

Gene: AnnaL29\_53 Start: 36744, Stop: 34702, Start Num: 43

Candidate Starts for AnnaL29\_53:

(Start: 43 @36744 has 3 MA's), (61, 36702), (Start: 73 @36630 has 3 MA's), (74, 36627), (Start: 88 @36555 has 3 MA's), (102, 36471), (118, 36414), (127, 36354), (141, 36294), (150, 36249), (169, 36138), (170, 36129), (179, 36060), (194, 36012), (203, 35988), (208, 35958), (209, 35955), (210, 35943), (212, 35925), (213, 35919), (214, 35916), (232, 35829), (272, 35754), (277, 35739), (283, 35709), (290, 35667), (311, 35529), (329, 35427), (331, 35415), (344, 35355), (357, 35283), (365, 35232), (377, 35151), (378, 35148), (380, 35142), (393, 35088), (402, 35049), (417, 34995), (419, 34989), (432, 34932), (451, 34875),

Gene: Annadreamy\_20 Start: 7774, Stop: 9717, Start Num: 65

Candidate Starts for Annadreamy\_20:

(11, 7600), (Start: 20 @7636 has 1 MA's), (62, 7765), (Start: 65 @7774 has 26 MA's), (Start: 73 @7831 has 3 MA's), (86, 7903), (90, 7912), (100, 7969), (Start: 103 @7987 has 3 MA's), (105, 7996), (111, 8011), (114, 8023), (133, 8128), (188, 8413), (244, 8641), (295, 8815), (314, 8908), (317, 8935), (327, 8980), (332, 9004), (346, 9055), (366, 9181), (390, 9289), (392, 9307), (408, 9379), (412, 9391), (468, 9598), (473, 9622),

Gene: Annyong\_50 Start: 35493, Stop: 33460, Start Num: 49

Candidate Starts for Annyong\_50:

(Start: 49 @35493 has 219 MA's), (68, 35430), (Start: 73 @35382 has 3 MA's), (78, 35358), (92, 35292), (Start: 97 @35256 has 1 MA's), (102, 35223), (116, 35175), (118, 35166), (127, 35109), (134, 35082), (141, 35049), (169, 34893), (170, 34884), (179, 34815), (203, 34743), (208, 34713), (209, 34710), (212, 34680), (213, 34674), (214, 34671), (232, 34584), (244, 34554), (255, 34542), (261, 34533), (279, 34485), (311, 34281), (329, 34179), (333, 34161), (360, 34020), (363, 33993), (392, 33849), (393, 33846), (399, 33816), (417, 33753), (426, 33720), (428, 33711), (432, 33690), (447, 33642), (465, 33576),

Gene: Anon\_52 Start: 34217, Stop: 32169, Start Num: 40

Candidate Starts for Anon\_52:

(Start: 40 @34217 has 21 MA's), (Start: 73 @34094 has 3 MA's), (87, 34022), (Start: 88 @34019 has 3 MA's), (116, 33887), (118, 33878), (141, 33758), (170, 33593), (179, 33524), (194, 33482), (203, 33458), (208, 33428), (212, 33395), (213, 33389), (214, 33386), (275, 33215), (283, 33179), (307, 33020), (311, 32999), (316, 32963), (329, 32897), (337, 32858), (339, 32846), (356, 32759), (357, 32753), (363, 32711), (393, 32558), (411, 32480), (432, 32399), (452, 32339), (479, 32228), (482, 32210),

Gene: Anselm\_52 Start: 36117, Stop: 34081, Start Num: 45

Candidate Starts for Anselm\_52:

(Start: 45 @36117 has 304 MA's), (59, 36081), (Start: 73 @36006 has 3 MA's), (74, 36003), (Start: 88 @35931 has 3 MA's), (Start: 97 @35880 has 1 MA's), (100, 35862), (110, 35826), (118, 35790), (141, 35670), (168, 35523), (169, 35514), (179, 35436), (203, 35364), (208, 35334), (209, 35331), (210, 35319), (212, 35301), (213, 35295), (214, 35292), (272, 35133), (283, 35088), (290, 35046), (311, 34908), (316, 34872), (329, 34806), (331, 34794), (344, 34734), (354, 34680), (357, 34662), (393, 34467), (402, 34428), (403, 34425), (417, 34374), (432, 34311), (447, 34263), (451, 34254), (484, 34113),

Gene: Anthony\_47 Start: 33618, Stop: 31591, Start Num: 49

Candidate Starts for Anthony\_47:

(Start: 49 @33618 has 219 MA's), (59, 33582), (Start: 88 @33432 has 3 MA's), (102, 33348), (116, 33300), (118, 33291), (127, 33231), (144, 33162), (145, 33159), (153, 33120), (165, 33048), (169, 33021), (172, 32991), (179, 32943), (203, 32880), (208, 32850), (209, 32847), (212, 32817), (213, 32811), (214, 32808), (232, 32721), (260, 32667), (283, 32604), (291, 32559), (297, 32496), (299, 32490), (311, 32424), (326, 32337), (328, 32328), (343, 32253), (348, 32229), (363, 32136), (375, 32049), (394, 31974), (399, 31947), (402, 31938), (417, 31884), (426, 31851), (432, 31821), (447, 31773), (481, 31644), (482, 31632),

Gene: Anubis\_57 Start: 35793, Stop: 33775, Start Num: 55

Candidate Starts for Anubis\_57:

(Start: 55 @35793 has 95 MA's), (Start: 71 @35700 has 1 MA's), (Start: 73 @35691 has 3 MA's), (78, 35667), (Start: 88 @35616 has 3 MA's), (Start: 97 @35565 has 1 MA's), (116, 35484), (118, 35475), (141, 35355), (154, 35295), (157, 35259), (169, 35199), (179, 35121), (203, 35049), (208, 35019), (212, 34986), (213, 34980), (214, 34977), (230, 34896), (239, 34866), (279, 34812), (304, 34641), (321, 34545), (329, 34503), (333, 34485), (343, 34437), (346, 34425), (356, 34368), (357, 34362), (360, 34347), (363, 34320), (370, 34257), (371, 34251), (377, 34227), (402, 34122), (421, 34053), (426, 34035), (428, 34026), (432, 34005), (459, 33927), (465, 33891), (481, 33828),

Gene: AppleCloud\_38 Start: 31871, Stop: 29826, Start Num: 45

Candidate Starts for AppleCloud\_38:

(Start: 45 @31871 has 304 MA's), (59, 31829), (74, 31751), (85, 31688), (87, 31682), (Start: 97 @31628 has 1 MA's), (118, 31538), (119, 31523), (154, 31358), (156, 31325), (157, 31322), (168, 31271), (169, 31262), (175, 31199), (179, 31184), (181, 31178), (203, 31118), (212, 31055), (213, 31049), (214, 31046), (230, 30965), (252, 30911), (290, 30800), (295, 30743), (301, 30716), (304, 30698), (310, 30665), (328, 30566), (354, 30434), (363, 30374), (371, 30305), (385, 30263), (387, 30260), (388, 30248), (393, 30215), (402, 30176), (421, 30104), (428, 30077), (436, 30038), (465, 29942),

Gene: Aragog\_42 Start: 34180, Stop: 32111, Start Num: 49

Candidate Starts for Aragog\_42:

(Start: 49 @34180 has 219 MA's), (Start: 88 @33994 has 3 MA's), (Start: 97 @33943 has 1 MA's), (102, 33910), (116, 33862), (118, 33853), (141, 33733), (146, 33718), (164, 33607), (165, 33604), (169, 33577), (170, 33568), (176, 33508), (179, 33499), (184, 33475), (203, 33388), (208, 33358), (209, 33355), (212, 33325), (213, 33319), (214, 33316), (283, 33124), (308, 32962), (313, 32929), (322, 32881), (329, 32842), (343, 32773), (354, 32716), (356, 32704), (357, 32698), (363, 32656), (365, 32647), (392, 32500), (399, 32467), (410, 32425), (421, 32389), (426, 32371), (428, 32362), (482, 32152),

Gene: ArcherNM\_46 Start: 35706, Stop: 33682, Start Num: 45

Candidate Starts for ArcherNM\_46:

(Start: 45 @35706 has 304 MA's), (Start: 73 @35595 has 3 MA's), (Start: 88 @35520 has 3 MA's), (Start: 97 @35469 has 1 MA's), (102, 35436), (116, 35388), (118, 35379), (127, 35319), (141, 35259), (169, 35103), (170, 35094), (179, 35025), (203, 34953), (208, 34923), (209, 34920), (210, 34908), (212, 34890), (213, 34884), (214, 34881), (270, 34731), (272, 34728), (283, 34683), (290, 34641), (307, 34524), (311, 34503), (316, 34467), (329, 34401), (331, 34389), (344, 34329), (357, 34257), (377, 34125), (380, 34116), (393, 34062), (398, 34035), (417, 33975), (419, 33969), (432, 33912), (447, 33864), (451, 33855),

Gene: Archetta\_43 Start: 34770, Stop: 32641, Start Num: 49

Candidate Starts for Archetta\_43:

(Start: 49 @34770 has 219 MA's), (Start: 88 @34584 has 3 MA's), (Start: 97 @34533 has 1 MA's), (116, 34452), (118, 34443), (141, 34323), (146, 34308), (164, 34197), (165, 34194), (169, 34167), (170, 34158), (176, 34098), (179, 34089), (184, 34065), (203, 33978), (208, 33948), (209, 33945), (212, 33915), (213, 33909), (214, 33906), (239, 33795), (283, 33654), (308, 33492), (313, 33459), (322, 33411), (329, 33372), (343, 33303), (354, 33246), (356, 33234), (357, 33228), (363, 33186), (365, 33177), (372, 33114), (394, 33024), (399, 32997), (410, 32955), (421, 32919), (426, 32901), (428, 32892), (482, 32682),

Gene: Arissanae\_50 Start: 36302, Stop: 34263, Start Num: 45

Candidate Starts for Arissanae\_50:

(Start: 45 @36302 has 304 MA's), (Start: 73 @36188 has 3 MA's), (74, 36185), (102, 36029), (117, 35975), (118, 35972), (127, 35912), (128, 35909), (141, 35852), (169, 35696), (179, 35618), (182, 35606), (203, 35552), (209, 35519), (212, 35489), (213, 35483), (214, 35480), (272, 35315), (280, 35291), (283, 35270), (311, 35090), (316, 35054), (326, 35003), (344, 34916), (357, 34844), (361, 34811), (363, 34802), (393, 34649), (402, 34610), (411, 34574), (432, 34493), (447, 34445),

Gene: Artemis2UCLA\_54 Start: 34910, Stop: 32856, Start Num: 45

Candidate Starts for Artemis2UCLA\_54:

(Start: 45 @34910 has 304 MA's), (Start: 88 @34724 has 3 MA's), (Start: 97 @34673 has 1 MA's), (102, 34640), (116, 34592), (118, 34583), (127, 34523), (141, 34463), (153, 34406), (157, 34367), (165, 34334), (169, 34307), (170, 34298), (175, 34244), (179, 34229), (203, 34157), (208, 34127), (212, 34094), (213, 34088), (214, 34085), (232, 33998), (250, 33944), (270, 33911), (283, 33863), (290, 33821), (311, 33683), (331, 33569), (344, 33509), (346, 33500), (354, 33455), (357, 33437),



(361, 33404), (378, 33302), (380, 33296), (393, 33242), (398, 33215), (402, 33203), (417, 33149), (432, 33086), (440, 33056), (451, 33029), (461, 32990),

Gene: Arturo\_49 Start: 35720, Stop: 33690, Start Num: 49

Candidate Starts for Arturo\_49:

(Start: 49 @35720 has 219 MA's), (92, 35519), (Start: 97 @35483 has 1 MA's), (102, 35450), (116, 35402), (118, 35393), (127, 35336), (141, 35276), (158, 35174), (169, 35120), (170, 35111), (179, 35042), (182, 35030), (202, 34979), (203, 34970), (208, 34940), (209, 34937), (212, 34907), (213, 34901), (214, 34898), (221, 34865), (279, 34715), (311, 34511), (329, 34409), (333, 34391), (356, 34271), (360, 34250), (363, 34223), (392, 34079), (393, 34076), (399, 34046), (411, 34001), (421, 33968), (426, 33950), (428, 33941), (432, 33920), (465, 33806),

Gene: Asten\_47 Start: 31991, Stop: 34081, Start Num: 45

Candidate Starts for Asten\_47:

(15, 31910), (27, 31949), (30, 31955), (Start: 45 @31991 has 304 MA's), (Start: 73 @32108 has 3 MA's), (79, 32147), (82, 32168), (Start: 88 @32201 has 3 MA's), (Start: 97 @32252 has 1 MA's), (116, 32333), (118, 32342), (132, 32420), (141, 32462), (154, 32522), (156, 32555), (161, 32579), (169, 32621), (179, 32699), (180, 32702), (195, 32759), (203, 32789), (212, 32852), (214, 32861), (225, 32912), (242, 32981), (275, 33026), (279, 33038), (297, 33170), (311, 33248), (313, 33263), (316, 33284), (326, 33335), (357, 33494), (358, 33500), (360, 33509), (365, 33545), (371, 33605), (378, 33632), (384, 33644), (385, 33647), (392, 33698), (394, 33704), (411, 33770), (421, 33803), (426, 33821), (432, 33851), (434, 33863), (443, 33890), (457, 33923), (462, 33950), (479, 34022),

Gene: Astro\_47 Start: 33968, Stop: 31923, Start Num: 49

Candidate Starts for Astro\_47:

(Start: 49 @33968 has 219 MA's), (75, 33842), (87, 33785), (Start: 88 @33782 has 3 MA's), (Start: 97 @33731 has 1 MA's), (102, 33698), (116, 33650), (118, 33641), (119, 33626), (123, 33599), (147, 33503), (153, 33464), (158, 33419), (168, 33374), (169, 33365), (175, 33302), (176, 33296), (179, 33287), (180, 33284), (203, 33215), (208, 33185), (209, 33182), (212, 33152), (213, 33146), (214, 33143), (283, 32945), (311, 32762), (316, 32726), (329, 32660), (350, 32561), (356, 32522), (363, 32474), (365, 32465), (377, 32381), (399, 32279), (411, 32234), (426, 32183), (428, 32174), (432, 32153), (436, 32135), (482, 31964),

Gene: AugsMagnumOpus\_57 Start: 35898, Stop: 33880, Start Num: 55

Candidate Starts for AugsMagnumOpus\_57:

(Start: 55 @35898 has 95 MA's), (Start: 73 @35796 has 3 MA's), (78, 35772), (Start: 88 @35721 has 3 MA's), (Start: 97 @35670 has 1 MA's), (116, 35589), (118, 35580), (141, 35460), (154, 35400), (157, 35364), (169, 35304), (179, 35226), (203, 35154), (208, 35124), (212, 35091), (213, 35085), (214, 35082), (230, 35001), (239, 34971), (279, 34917), (304, 34746), (321, 34650), (329, 34608), (333, 34590), (343, 34542), (346, 34530), (356, 34473), (357, 34467), (360, 34452), (363, 34425), (370, 34362), (371, 34356), (377, 34332), (402, 34227), (421, 34158), (426, 34140), (428, 34131), (432, 34110), (459, 34032), (465, 33996), (481, 33933),

Gene: AvatarAhPeg\_48 Start: 35233, Stop: 33197, Start Num: 49

Candidate Starts for AvatarAhPeg\_48:

(Start: 49 @35233 has 219 MA's), (92, 35032), (Start: 97 @34996 has 1 MA's), (102, 34963), (116, 34915), (118, 34906), (141, 34789), (169, 34633), (170, 34624), (176, 34564), (179, 34555), (182, 34543), (202, 34492), (203, 34483), (208, 34453), (209, 34450), (212, 34420), (213, 34414), (214, 34411), (221, 34378), (239, 34300), (274, 34237), (279, 34222), (311, 34018), (333, 33898), (356, 33778), (360, 33757), (363, 33730), (392, 33586), (393, 33583), (399, 33553), (411, 33508), (426, 33457), (428, 33448), (432, 33427), (447, 33379), (465, 33313),

Gene: Avle17\_50 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for Avle17\_50:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: Axiom\_52 Start: 32982, Stop: 35072, Start Num: 45

Candidate Starts for Axiom\_52:

(Start: 45 @32982 has 304 MA's), (82, 33159), (Start: 88 @33192 has 3 MA's), (Start: 97 @33243 has 1 MA's), (116, 33324), (118, 33333), (134, 33420), (135, 33432), (141, 33453), (161, 33570), (169, 33612), (170, 33621), (179, 33690), (190, 33735), (203, 33780), (212, 33843), (246, 33972), (268, 33999), (279, 34029), (297, 34161), (311, 34239), (316, 34275), (323, 34302), (325, 34320), (329, 34341), (357, 34485), (358, 34491), (360, 34500), (365, 34536), (368, 34575), (371, 34596), (378, 34623), (384, 34635), (389, 34665), (392, 34689), (421, 34794), (426, 34812), (434, 34854), (447, 34890), (462, 34941), (478, 35010), (485, 35064),

Gene: B1\_46 Start: 33913, Stop: 31892, Start Num: 49

Candidate Starts for B1\_46:

(Start: 49 @33913 has 219 MA's), (Start: 73 @33802 has 3 MA's), (74, 33799), (92, 33712), (Start: 97 @33676 has 1 MA's), (102, 33643), (116, 33595), (118, 33586), (141, 33466), (146, 33451), (165, 33337), (169, 33310), (170, 33301), (179, 33232), (185, 33211), (187, 33208), (203, 33166), (208, 33136), (210, 33121), (212, 33103), (213, 33097), (214, 33094), (279, 32929), (311, 32725), (321, 32665), (329, 32623), (333, 32605), (356, 32485), (357, 32479), (360, 32464), (372, 32365), (392, 32281), (399, 32248), (403, 32236), (418, 32182), (428, 32143), (432, 32122), (465, 32008),

Gene: BABullseye\_47 Start: 32492, Stop: 30468, Start Num: 45

Candidate Starts for BABullseye\_47:

(32, 32525), (Start: 45 @32492 has 304 MA's), (Start: 88 @32306 has 3 MA's), (102, 32222), (116, 32174), (118, 32165), (127, 32105), (141, 32045), (153, 31988), (157, 31949), (165, 31916), (169, 31889), (170, 31880), (175, 31826), (179, 31811), (203, 31739), (208, 31709), (212, 31676), (213, 31670), (214, 31667), (283, 31475), (307, 31316), (311, 31295), (331, 31181), (344, 31121), (346, 31112), (354, 31067), (357, 31049), (361, 31016), (378, 30914), (380, 30908), (393, 30854), (402, 30815), (417, 30761), (432, 30698), (440, 30668), (451, 30641),

Gene: BRock\_136 Start: 73464, Stop: 75080, Start Num: 103

Candidate Starts for BRock\_136:

(Start: 103 @73464 has 3 MA's), (Start: 104 @73470 has 1 MA's), (108, 73482), (124, 73575), (138, 73638), (143, 73656), (152, 73704), (154, 73710), (157, 73743), (162, 73767), (173, 73833), (177, 73866), (202, 73899), (212, 73971), (220, 74007), (226, 74040), (227, 74046), (270, 74133), (279, 74157), (292, 74238), (306, 74313), (312, 74346), (328, 74433), (329, 74439), (363, 74613), (366, 74634), (367, 74643), (379, 74706), (411, 74829), (432, 74913), (442, 74946), (458, 74985), (470, 75048), (472, 75057),

Gene: Baby16\_50 Start: 35459, Stop: 33426, Start Num: 49

Candidate Starts for Baby16\_50:

(Start: 49 @35459 has 219 MA's), (68, 35396), (Start: 73 @35348 has 3 MA's), (78, 35324), (92, 35258), (Start: 97 @35222 has 1 MA's), (102, 35189), (116, 35141), (118, 35132), (127, 35075), (134, 35048), (141, 35015), (169, 34859), (170, 34850), (179, 34781), (203, 34709), (208, 34679), (209, 34676), (212, 34646), (213, 34640), (214, 34637), (232, 34550), (241, 34526), (244, 34520), (255, 34508), (261, 34499), (279, 34451), (310, 34250), (311, 34247), (329, 34145), (333, 34127), (360,

33986), (363, 33959), (392, 33815), (393, 33812), (399, 33782), (417, 33719), (426, 33686), (428, 33677), (432, 33656), (447, 33608), (465, 33542),

Gene: BabyBack\_50 Start: 36429, Stop: 34393, Start Num: 45

Candidate Starts for BabyBack\_50:

(6, 36570), (Start: 45 @36429 has 304 MA's), (Start: 88 @36240 has 3 MA's), (Start: 97 @36189 has 1 MA's), (116, 36108), (118, 36099), (127, 36039), (139, 35985), (141, 35979), (169, 35823), (170, 35814), (179, 35745), (203, 35673), (208, 35643), (209, 35640), (210, 35628), (212, 35610), (213, 35604), (214, 35601), (224, 35553), (232, 35514), (283, 35400), (290, 35358), (311, 35220), (316, 35184), (329, 35118), (344, 35046), (352, 35010), (357, 34974), (361, 34941), (377, 34842), (380, 34833), (393, 34779), (402, 34740), (417, 34686), (421, 34671), (432, 34623), (447, 34575),

Gene: BabyJohn\_49 Start: 35737, Stop: 33716, Start Num: 49

Candidate Starts for BabyJohn\_49:

(Start: 49 @35737 has 219 MA's), (74, 35623), (92, 35536), (Start: 97 @35500 has 1 MA's), (102, 35467), (116, 35419), (118, 35410), (141, 35290), (165, 35161), (169, 35134), (170, 35125), (179, 35056), (185, 35035), (203, 34990), (208, 34960), (209, 34957), (210, 34945), (212, 34927), (213, 34921), (214, 34918), (279, 34753), (311, 34549), (321, 34489), (329, 34447), (333, 34429), (343, 34378), (356, 34309), (357, 34303), (360, 34288), (372, 34189), (392, 34105), (403, 34060), (428, 33967), (432, 33946), (465, 33832),

Gene: BabyRay\_51 Start: 35710, Stop: 33650, Start Num: 49

Candidate Starts for BabyRay\_51:

(Start: 49 @35710 has 219 MA's), (Start: 73 @35602 has 3 MA's), (92, 35512), (Start: 97 @35476 has 1 MA's), (102, 35443), (116, 35395), (118, 35386), (141, 35269), (157, 35173), (169, 35113), (179, 35035), (203, 34963), (208, 34933), (209, 34930), (210, 34918), (212, 34900), (213, 34894), (214, 34891), (230, 34810), (279, 34687), (280, 34684), (311, 34483), (321, 34423), (329, 34381), (333, 34363), (356, 34243), (357, 34237), (360, 34222), (363, 34195), (372, 34123), (389, 34057), (403, 33994), (428, 33901), (432, 33880), (465, 33766),

Gene: Bachome\_53 Start: 35287, Stop: 33263, Start Num: 50

Candidate Starts for Bachome\_53:

(28, 35338), (41, 35305), (Start: 50 @35287 has 19 MA's), (Start: 73 @35179 has 3 MA's), (Start: 88 @35104 has 3 MA's), (116, 34972), (118, 34963), (141, 34843), (169, 34687), (174, 34639), (178, 34612), (179, 34609), (182, 34597), (197, 34564), (203, 34543), (210, 34498), (212, 34480), (213, 34474), (214, 34471), (270, 34321), (283, 34273), (286, 34258), (311, 34093), (329, 33991), (333, 33973), (347, 33901), (357, 33847), (360, 33832), (361, 33814), (393, 33652), (402, 33613), (414, 33565), (426, 33523), (432, 33493), (447, 33445),

Gene: Backyardigan\_48 Start: 35439, Stop: 33421, Start Num: 49

Candidate Starts for Backyardigan\_48:

(Start: 49 @35439 has 219 MA's), (Start: 73 @35328 has 3 MA's), (92, 35238), (Start: 97 @35202 has 1 MA's), (102, 35169), (116, 35121), (118, 35112), (127, 35052), (141, 34992), (169, 34836), (170, 34827), (179, 34758), (182, 34746), (201, 34695), (203, 34686), (208, 34656), (209, 34653), (212, 34623), (213, 34617), (214, 34614), (248, 34494), (270, 34470), (279, 34446), (311, 34242), (329, 34140), (333, 34122), (343, 34071), (356, 34002), (360, 33981), (363, 33954), (392, 33810), (393, 33807), (399, 33777), (411, 33732), (426, 33681), (428, 33672), (432, 33651), (465, 33537), (479, 33480),

Gene: Bactobuster\_50 Start: 36673, Stop: 34643, Start Num: 45

Candidate Starts for Bactobuster\_50:

(Start: 45 @36673 has 304 MA's), (74, 36559), (118, 36346), (119, 36331), (141, 36226), (169, 36070), (170, 36061), (179, 35992), (194, 35944), (203, 35920), (208, 35890), (209, 35887), (210, 35875),

(212, 35857), (213, 35851), (214, 35848), (232, 35761), (270, 35692), (283, 35644), (290, 35602), (311, 35464), (316, 35428), (329, 35362), (331, 35350), (344, 35290), (357, 35218), (377, 35086), (378, 35083), (380, 35077), (388, 35056), (393, 35023), (398, 34996), (417, 34936), (432, 34873), (447, 34825), (451, 34816),

Gene: Badger\_48 Start: 35407, Stop: 33389, Start Num: 49

Candidate Starts for Badger\_48:

(Start: 49 @35407 has 219 MA's), (Start: 73 @35296 has 3 MA's), (92, 35206), (Start: 97 @35170 has 1 MA's), (102, 35137), (116, 35089), (118, 35080), (127, 35020), (141, 34960), (169, 34804), (170, 34795), (179, 34726), (182, 34714), (201, 34663), (203, 34654), (208, 34624), (209, 34621), (212, 34591), (213, 34585), (214, 34582), (248, 34462), (270, 34438), (279, 34414), (311, 34210), (329, 34108), (333, 34090), (343, 34039), (356, 33970), (360, 33949), (363, 33922), (392, 33778), (393, 33775), (399, 33745), (411, 33700), (426, 33649), (428, 33640), (432, 33619), (465, 33505), (479, 33448),

Gene: Baehexic\_50 Start: 35873, Stop: 33837, Start Num: 45

Candidate Starts for Baehexic\_50:

(Start: 45 @35873 has 304 MA's), (61, 35834), (Start: 73 @35762 has 3 MA's), (Start: 88 @35687 has 3 MA's), (Start: 97 @35636 has 1 MA's), (102, 35603), (118, 35546), (127, 35486), (134, 35459), (141, 35426), (169, 35270), (179, 35192), (182, 35180), (198, 35138), (203, 35120), (208, 35090), (209, 35087), (210, 35075), (212, 35057), (213, 35051), (214, 35048), (272, 34889), (283, 34844), (290, 34802), (311, 34664), (316, 34628), (329, 34562), (331, 34550), (344, 34490), (354, 34436), (357, 34418), (365, 34367), (377, 34286), (380, 34277), (393, 34223), (399, 34193), (402, 34184), (417, 34130), (432, 34067), (447, 34019), (451, 34010),

Gene: BangNhom\_51 Start: 35884, Stop: 33833, Start Num: 49

Candidate Starts for BangNhom\_51:

(Start: 49 @35884 has 219 MA's), (68, 35821), (Start: 73 @35773 has 3 MA's), (74, 35770), (78, 35749), (92, 35683), (Start: 97 @35647 has 1 MA's), (102, 35614), (116, 35566), (118, 35557), (127, 35500), (141, 35440), (146, 35425), (169, 35284), (170, 35275), (179, 35206), (203, 35134), (208, 35104), (209, 35101), (212, 35071), (213, 35065), (214, 35062), (260, 34909), (279, 34858), (311, 34654), (329, 34552), (333, 34534), (360, 34393), (363, 34366), (392, 34222), (393, 34219), (399, 34189), (417, 34126), (426, 34093), (428, 34084), (432, 34063), (447, 34015), (465, 33949),

Gene: BarryBee\_50 Start: 32001, Stop: 34091, Start Num: 45

Candidate Starts for BarryBee\_50:

(15, 31920), (Start: 45 @32001 has 304 MA's), (61, 32046), (79, 32157), (82, 32178), (Start: 88 @32211 has 3 MA's), (90, 32217), (Start: 97 @32262 has 1 MA's), (116, 32343), (118, 32352), (132, 32430), (141, 32472), (154, 32532), (156, 32565), (161, 32589), (169, 32631), (170, 32640), (179, 32709), (180, 32712), (203, 32799), (212, 32862), (214, 32871), (225, 32922), (242, 32991), (275, 33036), (279, 33048), (297, 33180), (307, 33237), (311, 33258), (313, 33273), (316, 33294), (326, 33345), (334, 33381), (335, 33387), (346, 33441), (357, 33504), (358, 33510), (365, 33555), (371, 33615), (378, 33642), (384, 33654), (392, 33708), (394, 33714), (404, 33759), (411, 33780), (421, 33813), (426, 33831), (432, 33861), (434, 33873), (443, 33900), (462, 33960), (479, 34032),

Gene: BartholomewSD\_50 Start: 33161, Stop: 35275, Start Num: 45

Candidate Starts for BartholomewSD\_50:

(Start: 45 @33161 has 304 MA's), (82, 33329), (Start: 88 @33362 has 3 MA's), (Start: 97 @33413 has 1 MA's), (116, 33494), (118, 33503), (134, 33590), (135, 33602), (141, 33623), (161, 33740), (169, 33782), (170, 33791), (179, 33860), (203, 33968), (208, 33998), (209, 34001), (212, 34031), (260, 34196), (279, 34232), (299, 34370), (311, 34442), (316, 34478), (323, 34505), (325, 34523), (329, 34544), (357, 34688), (358, 34694), (360, 34703), (365, 34739), (371, 34799), (378, 34826), (384, 34838), (388, 34856), (392, 34892), (394, 34898), (411, 34964), (421, 34997), (426, 35015), (432,

35045), (462, 35144), (478, 35213), (485, 35267),

Gene: Bartholomune\_41 Start: 18300, Stop: 20243, Start Num: 64

Candidate Starts for Bartholomune\_41:

(Start: 64 @18300 has 64 MA's), (Start: 67 @18306 has 1 MA's), (83, 18408), (86, 18429), (90, 18438), (106, 18528), (111, 18537), (112, 18546), (114, 18549), (133, 18654), (198, 18963), (217, 19074), (235, 19164), (248, 19176), (306, 19389), (333, 19536), (349, 19599), (366, 19710), (390, 19818), (430, 19989), (438, 20028), (468, 20127),

Gene: Bartimeaus\_50 Start: 35450, Stop: 33417, Start Num: 49

Candidate Starts for Bartimeaus\_50:

(Start: 49 @35450 has 219 MA's), (68, 35387), (Start: 73 @35339 has 3 MA's), (78, 35315), (92, 35249), (Start: 97 @35213 has 1 MA's), (102, 35180), (116, 35132), (118, 35123), (127, 35066), (134, 35039), (141, 35006), (169, 34850), (170, 34841), (179, 34772), (203, 34700), (208, 34670), (209, 34667), (212, 34637), (213, 34631), (214, 34628), (232, 34541), (241, 34517), (244, 34511), (255, 34499), (261, 34490), (279, 34442), (310, 34241), (311, 34238), (329, 34136), (333, 34118), (360, 33977), (363, 33950), (392, 33806), (393, 33803), (399, 33773), (417, 33710), (426, 33677), (428, 33668), (432, 33647), (447, 33599), (465, 33533),

Gene: Battleship\_58 Start: 35190, Stop: 33127, Start Num: 40

Candidate Starts for Battleship\_58:

(Start: 40 @35190 has 21 MA's), (77, 35046), (87, 34995), (Start: 88 @34992 has 3 MA's), (116, 34860), (118, 34851), (141, 34731), (170, 34566), (174, 34527), (179, 34497), (194, 34455), (203, 34431), (208, 34401), (212, 34368), (213, 34362), (214, 34359), (270, 34185), (275, 34173), (283, 34137), (310, 33960), (311, 33957), (316, 33921), (329, 33855), (337, 33816), (339, 33804), (356, 33717), (357, 33711), (363, 33669), (393, 33516), (411, 33438), (432, 33357), (452, 33297), (459, 33279), (479, 33186), (482, 33168),

Gene: Battuta\_43 Start: 19509, Stop: 21449, Start Num: 64

Candidate Starts for Battuta\_43:

(Start: 64 @19509 has 64 MA's), (90, 19641), (96, 19677), (102, 19713), (111, 19740), (114, 19752), (133, 19857), (148, 19914), (185, 20139), (206, 20193), (217, 20277), (228, 20328), (235, 20367), (248, 20379), (285, 20457), (297, 20556), (306, 20592), (333, 20739), (366, 20913), (369, 20949), (389, 21018), (390, 21021), (430, 21192), (468, 21330),

Gene: BeardedLady\_47 Start: 32041, Stop: 34131, Start Num: 45

Candidate Starts for BeardedLady\_47:

(Start: 45 @32041 has 304 MA's), (78, 32182), (79, 32197), (82, 32218), (Start: 88 @32251 has 3 MA's), (90, 32257), (Start: 97 @32302 has 1 MA's), (116, 32383), (118, 32392), (132, 32470), (134, 32479), (141, 32512), (156, 32605), (161, 32629), (169, 32671), (179, 32749), (180, 32752), (203, 32839), (212, 32902), (214, 32911), (275, 33076), (279, 33088), (297, 33220), (302, 33247), (311, 33298), (313, 33313), (316, 33334), (329, 33400), (357, 33544), (358, 33550), (360, 33559), (365, 33595), (369, 33643), (371, 33655), (384, 33694), (392, 33748), (404, 33799), (411, 33820), (421, 33853), (426, 33871), (432, 33901), (434, 33913), (443, 33940), (462, 34000), (478, 34069), (479, 34072), (485, 34123),

Gene: Beauxregard13\_54 Start: 35910, Stop: 33892, Start Num: 55

Candidate Starts for Beauxregard13\_54:

(Start: 55 @35910 has 95 MA's), (Start: 71 @35817 has 1 MA's), (Start: 73 @35808 has 3 MA's), (78, 35784), (Start: 88 @35733 has 3 MA's), (Start: 97 @35682 has 1 MA's), (116, 35601), (118, 35592), (141, 35472), (154, 35412), (157, 35376), (169, 35316), (179, 35238), (203, 35166), (208, 35136), (212, 35103), (213, 35097), (214, 35094), (230, 35013), (239, 34983), (279, 34929), (304, 34758), (321, 34662), (329, 34620), (333, 34602), (343, 34554), (346, 34542), (356, 34485), (357, 34479),

(360, 34464), (363, 34437), (370, 34374), (371, 34368), (377, 34344), (402, 34239), (421, 34170), (426, 34152), (428, 34143), (432, 34122), (459, 34044), (465, 34008), (481, 33945),

Gene: Beemo\_51 Start: 35768, Stop: 33729, Start Num: 45

Candidate Starts for Beemo\_51:

(Start: 45 @35768 has 304 MA's), (Start: 73 @35654 has 3 MA's), (75, 35639), (78, 35630), (Start: 97 @35528 has 1 MA's), (118, 35438), (127, 35378), (128, 35375), (141, 35318), (168, 35171), (169, 35162), (179, 35084), (182, 35072), (203, 35018), (208, 34988), (210, 34973), (212, 34955), (213, 34949), (214, 34946), (272, 34781), (283, 34736), (311, 34556), (329, 34454), (344, 34382), (361, 34277), (363, 34268), (393, 34115), (399, 34085), (417, 34022), (432, 33959),

Gene: Beleetus\_142 Start: 76502, Stop: 78118, Start Num: 103

Candidate Starts for Beleetus\_142:

(Start: 103 @76502 has 3 MA's), (Start: 104 @76508 has 1 MA's), (108, 76520), (124, 76613), (130, 76637), (138, 76676), (152, 76742), (154, 76748), (157, 76781), (162, 76805), (173, 76871), (177, 76904), (202, 76937), (212, 77009), (218, 77039), (220, 77045), (226, 77078), (227, 77084), (253, 77150), (270, 77171), (279, 77195), (284, 77225), (306, 77351), (326, 77462), (328, 77471), (345, 77543), (356, 77603), (376, 77741), (396, 77813), (407, 77855), (411, 77867), (420, 77897), (425, 77918), (432, 77951), (442, 77984), (458, 78023), (470, 78086), (472, 78095),

Gene: Belenaria\_41 Start: 32007, Stop: 29962, Start Num: 45

Candidate Starts for Belenaria\_41:

(Start: 45 @32007 has 304 MA's), (74, 31887), (87, 31818), (Start: 97 @31764 has 1 MA's), (116, 31683), (118, 31674), (127, 31614), (132, 31596), (154, 31494), (156, 31461), (157, 31458), (159, 31449), (164, 31428), (168, 31407), (169, 31398), (175, 31335), (179, 31320), (181, 31314), (203, 31254), (209, 31221), (212, 31191), (213, 31185), (214, 31182), (252, 31047), (301, 30852), (304, 30834), (310, 30801), (326, 30711), (328, 30702), (354, 30570), (363, 30510), (372, 30438), (385, 30399), (387, 30396), (388, 30384), (393, 30351), (402, 30312), (421, 30240), (428, 30213), (465, 30078),

Gene: Belfort\_22 Start: 8526, Stop: 10469, Start Num: 65

Candidate Starts for Belfort\_22:

(62, 8517), (Start: 65 @8526 has 26 MA's), (90, 8664), (111, 8763), (114, 8775), (133, 8880), (244, 9393), (289, 9507), (305, 9609), (327, 9732), (332, 9756), (351, 9828), (366, 9933), (370, 9975), (381, 10005), (390, 10041), (393, 10062), (405, 10113), (412, 10143), (427, 10194), (468, 10350), (476, 10392),

Gene: BellusTerra\_51 Start: 35449, Stop: 33416, Start Num: 49

Candidate Starts for BellusTerra\_51:

(Start: 49 @35449 has 219 MA's), (68, 35386), (Start: 73 @35338 has 3 MA's), (78, 35314), (92, 35248), (Start: 97 @35212 has 1 MA's), (102, 35179), (116, 35131), (118, 35122), (127, 35065), (134, 35038), (141, 35005), (169, 34849), (170, 34840), (179, 34771), (203, 34699), (208, 34669), (209, 34666), (212, 34636), (213, 34630), (214, 34627), (232, 34540), (244, 34510), (255, 34498), (261, 34489), (279, 34441), (311, 34237), (329, 34135), (333, 34117), (360, 33976), (363, 33949), (392, 33805), (393, 33802), (399, 33772), (417, 33709), (426, 33676), (428, 33667), (432, 33646), (447, 33598), (465, 33532),

Gene: Benedict\_46 Start: 34349, Stop: 32301, Start Num: 49

Candidate Starts for Benedict\_46:

(17, 34415), (Start: 49 @34349 has 219 MA's), (Start: 88 @34166 has 3 MA's), (Start: 97 @34115 has 1 MA's), (102, 34082), (116, 34034), (118, 34025), (123, 33983), (147, 33887), (153, 33848), (158, 33803), (168, 33758), (169, 33749), (175, 33686), (176, 33680), (179, 33671), (203, 33599), (208, 33569), (209, 33566), (212, 33536), (213, 33530), (214, 33527), (239, 33416), (283, 33314), (286,

33299), (308, 33152), (313, 33119), (322, 33071), (329, 33032), (343, 32963), (354, 32906), (356, 32894), (357, 32888), (363, 32846), (365, 32837), (377, 32756), (392, 32690), (399, 32657), (410, 32615), (421, 32579), (426, 32561), (428, 32552), (482, 32342),

Gene: BengiVuitton\_53 Start: 36232, Stop: 34178, Start Num: 45

Candidate Starts for BengiVuitton\_53:

(Start: 45 @36232 has 304 MA's), (Start: 71 @36127 has 1 MA's), (Start: 73 @36118 has 3 MA's), (74, 36115), (78, 36094), (Start: 88 @36043 has 3 MA's), (Start: 97 @35992 has 1 MA's), (118, 35902), (126, 35845), (127, 35842), (141, 35782), (169, 35626), (170, 35617), (179, 35548), (192, 35512), (203, 35482), (208, 35452), (209, 35449), (210, 35437), (212, 35419), (213, 35413), (214, 35410), (257, 35266), (272, 35230), (283, 35185), (290, 35143), (311, 35005), (316, 34969), (329, 34903), (331, 34891), (344, 34831), (354, 34777), (357, 34759), (378, 34627), (382, 34618), (388, 34597), (393, 34564), (402, 34525), (403, 34522), (410, 34492), (417, 34471), (419, 34465), (432, 34408), (447, 34360), (451, 34351),

Gene: Benvolio\_48 Start: 35142, Stop: 33103, Start Num: 45

Candidate Starts for Benvolio\_48:

(6, 35283), (7, 35277), (Start: 45 @35142 has 304 MA's), (Start: 71 @35037 has 1 MA's), (Start: 73 @35028 has 3 MA's), (74, 35025), (78, 35004), (Start: 97 @34902 has 1 MA's), (118, 34812), (119, 34797), (141, 34692), (169, 34536), (179, 34458), (203, 34386), (208, 34356), (209, 34353), (210, 34341), (212, 34323), (213, 34317), (214, 34314), (272, 34155), (283, 34110), (290, 34068), (311, 33930), (316, 33894), (329, 33828), (331, 33816), (344, 33756), (354, 33702), (357, 33684), (393, 33489), (402, 33450), (403, 33447), (417, 33396), (419, 33390), (432, 33333), (447, 33285), (451, 33276),

Gene: Beuffert\_19 Start: 7421, Stop: 9364, Start Num: 65

Candidate Starts for Beuffert\_19:

(4, 7211), (5, 7217), (10, 7238), (11, 7247), (62, 7412), (Start: 65 @7421 has 26 MA's), (Start: 73 @7478 has 3 MA's), (86, 7550), (90, 7559), (Start: 103 @7634 has 3 MA's), (111, 7658), (114, 7670), (133, 7775), (213, 8168), (244, 8288), (314, 8555), (316, 8573), (327, 8627), (332, 8651), (344, 8693), (346, 8702), (390, 8936), (412, 9038), (427, 9089), (468, 9245), (473, 9269),

Gene: BiancaTri92\_51 Start: 36522, Stop: 34483, Start Num: 43

Candidate Starts for BiancaTri92\_51:

(Start: 43 @36522 has 3 MA's), (Start: 73 @36408 has 3 MA's), (Start: 88 @36333 has 3 MA's), (Start: 97 @36282 has 1 MA's), (102, 36249), (116, 36201), (118, 36192), (127, 36132), (141, 36072), (147, 36054), (169, 35916), (170, 35907), (179, 35838), (203, 35766), (208, 35736), (209, 35733), (210, 35721), (212, 35703), (213, 35697), (214, 35694), (272, 35535), (283, 35490), (290, 35448), (311, 35310), (316, 35274), (321, 35250), (329, 35208), (331, 35196), (344, 35136), (357, 35064), (377, 34932), (380, 34923), (393, 34869), (398, 34842), (399, 34839), (402, 34830), (417, 34776), (432, 34713), (447, 34665), (451, 34656),

Gene: Bigflo\_54 Start: 35906, Stop: 33888, Start Num: 55

Candidate Starts for Bigflo\_54:

(Start: 55 @35906 has 95 MA's), (Start: 71 @35813 has 1 MA's), (Start: 73 @35804 has 3 MA's), (78, 35780), (Start: 88 @35729 has 3 MA's), (Start: 97 @35678 has 1 MA's), (116, 35597), (118, 35588), (141, 35468), (154, 35408), (157, 35372), (169, 35312), (179, 35234), (203, 35162), (208, 35132), (212, 35099), (213, 35093), (214, 35090), (230, 35009), (239, 34979), (279, 34925), (304, 34754), (321, 34658), (329, 34616), (333, 34598), (343, 34550), (346, 34538), (356, 34481), (357, 34475), (360, 34460), (363, 34433), (370, 34370), (371, 34364), (377, 34340), (402, 34235), (421, 34166), (426, 34148), (428, 34139), (432, 34118), (459, 34040), (465, 34004), (481, 33941),

Gene: BillNye\_16 Start: 7225, Stop: 9171, Start Num: 65

Candidate Starts for BillNye\_16:

(Start: 65 @7225 has 26 MA's), (90, 7366), (Start: 103 @7441 has 3 MA's), (105, 7450), (111, 7465), (114, 7477), (133, 7582), (147, 7633), (183, 7855), (198, 7888), (213, 7975), (231, 8068), (298, 8281), (327, 8434), (332, 8458), (343, 8497), (360, 8587), (381, 8707), (390, 8743), (412, 8845), (416, 8860), (468, 9052),

Gene: Bimmel\_22 Start: 15990, Stop: 13993, Start Num: 54

Candidate Starts for Bimmel\_22:

(Start: 54 @15990 has 3 MA's), (92, 15795), (113, 15690), (169, 15393), (179, 15315), (182, 15303), (185, 15294), (203, 15249), (212, 15186), (214, 15177), (251, 15060), (265, 15045), (279, 15015), (301, 14865), (320, 14754), (335, 14682), (346, 14631), (359, 14556), (388, 14397), (421, 14280), (434, 14220), (453, 14169), (475, 14058),

Gene: Birchlyn\_42 Start: 17390, Stop: 19330, Start Num: 64

Candidate Starts for Birchlyn\_42:

(Start: 64 @17390 has 64 MA's), (90, 17522), (96, 17558), (102, 17594), (111, 17621), (114, 17633), (133, 17738), (148, 17795), (185, 18020), (206, 18074), (217, 18158), (228, 18209), (235, 18248), (248, 18260), (285, 18338), (297, 18437), (306, 18473), (333, 18620), (366, 18794), (369, 18830), (389, 18899), (390, 18902), (430, 19073), (468, 19211),

Gene: Blackmoor\_50 Start: 35450, Stop: 33417, Start Num: 49

Candidate Starts for Blackmoor\_50:

(Start: 49 @35450 has 219 MA's), (68, 35387), (Start: 73 @35339 has 3 MA's), (78, 35315), (92, 35249), (Start: 97 @35213 has 1 MA's), (102, 35180), (116, 35132), (118, 35123), (127, 35066), (134, 35039), (141, 35006), (169, 34850), (170, 34841), (179, 34772), (203, 34700), (208, 34670), (209, 34667), (212, 34637), (213, 34631), (214, 34628), (232, 34541), (241, 34517), (244, 34511), (255, 34499), (261, 34490), (279, 34442), (310, 34241), (311, 34238), (329, 34136), (333, 34118), (360, 33977), (363, 33950), (392, 33806), (393, 33803), (399, 33773), (417, 33710), (426, 33677), (428, 33668), (432, 33647), (447, 33599), (465, 33533),

Gene: BlessJoy\_54 Start: 35336, Stop: 33282, Start Num: 45

Candidate Starts for BlessJoy\_54:

(Start: 45 @35336 has 304 MA's), (Start: 88 @35150 has 3 MA's), (Start: 97 @35099 has 1 MA's), (102, 35066), (116, 35018), (118, 35009), (127, 34949), (141, 34889), (153, 34832), (157, 34793), (165, 34760), (169, 34733), (170, 34724), (175, 34670), (179, 34655), (203, 34583), (208, 34553), (212, 34520), (213, 34514), (214, 34511), (232, 34424), (250, 34370), (270, 34337), (283, 34289), (290, 34247), (311, 34109), (331, 33995), (344, 33935), (346, 33926), (354, 33881), (357, 33863), (361, 33830), (378, 33728), (380, 33722), (393, 33668), (398, 33641), (402, 33629), (417, 33575), (432, 33512), (440, 33482), (451, 33455), (461, 33416),

Gene: Blinn1\_56 Start: 34928, Stop: 32889, Start Num: 45

Candidate Starts for Blinn1\_56:

(32, 34961), (Start: 45 @34928 has 304 MA's), (Start: 73 @34817 has 3 MA's), (74, 34814), (102, 34658), (116, 34610), (118, 34601), (127, 34541), (141, 34481), (156, 34388), (169, 34325), (170, 34316), (179, 34247), (203, 34175), (208, 34145), (209, 34142), (210, 34130), (212, 34112), (213, 34106), (214, 34103), (232, 34016), (239, 33992), (272, 33941), (283, 33896), (290, 33854), (307, 33737), (311, 33716), (331, 33602), (344, 33542), (346, 33533), (354, 33488), (357, 33470), (361, 33437), (372, 33356), (378, 33335), (380, 33329), (393, 33275), (394, 33272), (402, 33236), (417, 33182), (432, 33119), (440, 33089), (451, 33062),

Gene: Blue7\_55 Start: 34980, Stop: 32926, Start Num: 45

Candidate Starts for Blue7\_55:



(Start: 45 @34980 has 304 MA's), (Start: 88 @34794 has 3 MA's), (Start: 97 @34743 has 1 MA's), (102, 34710), (116, 34662), (118, 34653), (127, 34593), (141, 34533), (153, 34476), (157, 34437), (165, 34404), (169, 34377), (170, 34368), (175, 34314), (179, 34299), (203, 34227), (208, 34197), (212, 34164), (213, 34158), (214, 34155), (232, 34068), (250, 34014), (270, 33981), (283, 33933), (290, 33891), (311, 33753), (331, 33639), (344, 33579), (346, 33570), (354, 33525), (357, 33507), (361, 33474), (378, 33372), (380, 33366), (393, 33312), (398, 33285), (402, 33273), (417, 33219), (432, 33156), (440, 33126), (451, 33099), (461, 33060),

Gene: BlueBird\_53 Start: 35769, Stop: 33748, Start Num: 49

Candidate Starts for BlueBird\_53:

(Start: 49 @35769 has 219 MA's), (74, 35655), (92, 35568), (Start: 97 @35532 has 1 MA's), (116, 35451), (118, 35442), (126, 35385), (141, 35322), (169, 35166), (179, 35088), (185, 35067), (187, 35064), (203, 35022), (208, 34992), (210, 34977), (212, 34959), (213, 34953), (214, 34950), (221, 34917), (279, 34785), (311, 34581), (316, 34545), (321, 34521), (329, 34479), (333, 34461), (356, 34341), (357, 34335), (360, 34320), (363, 34293), (389, 34155), (403, 34092), (428, 33999), (432, 33978), (460, 33897), (465, 33864),

Gene: BlueOtter\_43 Start: 19641, Stop: 21584, Start Num: 64

Candidate Starts for BlueOtter\_43:

(Start: 53 @19596 has 2 MA's), (56, 19605), (Start: 64 @19641 has 64 MA's), (Start: 67 @19647 has 1 MA's), (83, 19749), (86, 19770), (90, 19779), (93, 19791), (106, 19869), (111, 19878), (112, 19887), (114, 19890), (133, 19995), (154, 20094), (198, 20304), (235, 20505), (248, 20517), (306, 20730), (324, 20835), (333, 20877), (336, 20895), (366, 21051), (390, 21159), (430, 21330), (438, 21369), (468, 21468),

Gene: Blueeyedbeauty\_22 Start: 8268, Stop: 10211, Start Num: 65

Candidate Starts for Blueeyedbeauty\_22:

(62, 8259), (Start: 65 @8268 has 26 MA's), (Start: 73 @8325 has 3 MA's), (86, 8397), (90, 8406), (Start: 103 @8481 has 3 MA's), (111, 8505), (114, 8517), (133, 8622), (213, 9015), (244, 9135), (289, 9249), (314, 9402), (316, 9420), (317, 9429), (327, 9474), (332, 9498), (346, 9549), (366, 9675), (389, 9780), (390, 9783), (412, 9885), (427, 9936), (468, 10092), (473, 10116),

Gene: Bluefalcon\_42 Start: 34735, Stop: 32606, Start Num: 49

Candidate Starts for Bluefalcon\_42:

(Start: 49 @34735 has 219 MA's), (Start: 88 @34549 has 3 MA's), (Start: 97 @34498 has 1 MA's), (116, 34417), (118, 34408), (141, 34288), (146, 34273), (164, 34162), (165, 34159), (169, 34132), (170, 34123), (176, 34063), (179, 34054), (184, 34030), (203, 33943), (208, 33913), (209, 33910), (212, 33880), (213, 33874), (214, 33871), (239, 33760), (283, 33619), (308, 33457), (313, 33424), (322, 33376), (329, 33337), (343, 33268), (354, 33211), (356, 33199), (357, 33193), (363, 33151), (365, 33142), (372, 33079), (394, 32989), (399, 32962), (410, 32920), (421, 32884), (426, 32866), (482, 32647),

Gene: Bmoc\_41 Start: 18692, Stop: 20635, Start Num: 64

Candidate Starts for Bmoc\_41:

(Start: 64 @18692 has 64 MA's), (Start: 67 @18698 has 1 MA's), (83, 18800), (86, 18821), (90, 18830), (106, 18920), (111, 18929), (112, 18938), (114, 18941), (133, 19046), (185, 19328), (198, 19355), (217, 19466), (235, 19556), (248, 19568), (306, 19781), (333, 19928), (336, 19946), (366, 20102), (369, 20138), (390, 20210), (430, 20381), (438, 20420), (468, 20519),

Gene: BobSwaget\_47 Start: 34545, Stop: 32503, Start Num: 45

Candidate Starts for BobSwaget\_47:

(Start: 45 @34545 has 304 MA's), (Start: 73 @34434 has 3 MA's), (74, 34431), (Start: 88 @34359 has 3 MA's), (Start: 97 @34308 has 1 MA's), (102, 34275), (116, 34227), (118, 34218), (127, 34158), (141,

34098), (169, 33942), (170, 33933), (179, 33864), (192, 33828), (203, 33798), (208, 33768), (209, 33765), (210, 33753), (212, 33735), (213, 33729), (214, 33726), (238, 33618), (270, 33558), (272, 33555), (283, 33510), (290, 33468), (311, 33330), (329, 33228), (331, 33216), (344, 33156), (346, 33147), (357, 33084), (361, 33051), (374, 32958), (393, 32889), (398, 32862), (402, 32850), (403, 32847), (404, 32841), (417, 32796), (432, 32733), (447, 32685), (451, 32676),

Gene: BobbyDazzler\_41 Start: 32120, Stop: 30075, Start Num: 45

Candidate Starts for BobbyDazzler\_41:

(Start: 45 @32120 has 304 MA's), (74, 32000), (87, 31931), (Start: 97 @31877 has 1 MA's), (116, 31796), (118, 31787), (127, 31727), (154, 31607), (156, 31574), (157, 31571), (159, 31562), (164, 31541), (169, 31511), (175, 31448), (179, 31433), (181, 31427), (203, 31367), (209, 31334), (212, 31304), (213, 31298), (214, 31295), (252, 31160), (301, 30965), (304, 30947), (326, 30824), (328, 30815), (354, 30683), (363, 30623), (372, 30551), (385, 30512), (387, 30509), (388, 30497), (393, 30464), (402, 30425), (421, 30353), (428, 30326), (432, 30305), (459, 30227), (465, 30191),

Gene: BogosyJay\_50 Start: 35495, Stop: 33456, Start Num: 45

Candidate Starts for BogosyJay\_50:

(Start: 45 @35495 has 304 MA's), (Start: 73 @35381 has 3 MA's), (75, 35366), (78, 35357), (102, 35222), (118, 35165), (127, 35105), (141, 35045), (168, 34898), (169, 34889), (179, 34811), (182, 34799), (203, 34745), (208, 34715), (210, 34700), (212, 34682), (213, 34676), (214, 34673), (264, 34535), (272, 34508), (283, 34463), (311, 34283), (329, 34181), (344, 34109), (361, 34004), (363, 33995), (393, 33842), (402, 33803), (411, 33767), (432, 33686),

Gene: Bombshell\_50 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for Bombshell\_50:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: Bonamassa\_44 Start: 34759, Stop: 32630, Start Num: 49

Candidate Starts for Bonamassa\_44:

(Start: 49 @34759 has 219 MA's), (Start: 88 @34573 has 3 MA's), (Start: 97 @34522 has 1 MA's), (116, 34441), (118, 34432), (141, 34312), (146, 34297), (164, 34186), (165, 34183), (169, 34156), (170, 34147), (176, 34087), (179, 34078), (184, 34054), (203, 33967), (208, 33937), (209, 33934), (212, 33904), (213, 33898), (214, 33895), (239, 33784), (283, 33643), (308, 33481), (313, 33448), (322, 33400), (329, 33361), (343, 33292), (354, 33235), (356, 33223), (357, 33217), (363, 33175), (365, 33166), (372, 33103), (394, 33013), (399, 32986), (421, 32908), (426, 32890), (428, 32881), (482, 32671),

Gene: Bonanza\_41 Start: 32048, Stop: 30003, Start Num: 45

Candidate Starts for Bonanza\_41:

(Start: 45 @32048 has 304 MA's), (74, 31928), (87, 31859), (Start: 97 @31805 has 1 MA's), (116, 31724), (118, 31715), (127, 31655), (154, 31535), (156, 31502), (157, 31499), (159, 31490), (164, 31469), (168, 31448), (169, 31439), (175, 31376), (179, 31361), (181, 31355), (203, 31295), (209, 31262), (212, 31232), (213, 31226), (214, 31223), (252, 31088), (301, 30893), (304, 30875), (326, 30752), (328, 30743), (354, 30611), (363, 30551), (372, 30479), (385, 30440), (387, 30437), (388, 30425), (393, 30392), (402, 30353), (421, 30281), (428, 30254), (432, 30233), (436, 30215), (459, 30155), (465, 30119),

Gene: Boohoo\_56 Start: 34919, Stop: 32856, Start Num: 40

Candidate Starts for Boohoo\_56:

(Start: 40 @34919 has 21 MA's), (87, 34724), (Start: 88 @34721 has 3 MA's), (116, 34589), (118, 34580), (141, 34460), (170, 34295), (174, 34256), (179, 34226), (194, 34184), (203, 34160), (208, 34130), (212, 34097), (213, 34091), (214, 34088), (270, 33914), (275, 33902), (283, 33866), (310, 33689), (311, 33686), (316, 33650), (329, 33584), (337, 33545), (339, 33533), (356, 33446), (357, 33440), (363, 33398), (411, 33167), (432, 33086), (452, 33026), (459, 33008), (479, 32915), (482, 32897),

Gene: BoomerJR\_45 Start: 19366, Stop: 21306, Start Num: 64

Candidate Starts for BoomerJR\_45:

(Start: 64 @19366 has 64 MA's), (90, 19498), (96, 19534), (101, 19558), (102, 19570), (111, 19597), (114, 19609), (133, 19714), (137, 19729), (144, 19756), (207, 20068), (211, 20101), (217, 20134), (228, 20185), (230, 20200), (235, 20224), (248, 20236), (285, 20314), (297, 20413), (305, 20446), (306, 20449), (327, 20569), (333, 20596), (336, 20614), (366, 20770), (389, 20875), (390, 20878), (430, 21049), (438, 21088), (468, 21187),

Gene: Bordeaux\_43 Start: 19662, Stop: 21602, Start Num: 64

Candidate Starts for Bordeaux\_43:

(Start: 64 @19662 has 64 MA's), (90, 19794), (96, 19830), (102, 19866), (111, 19893), (114, 19905), (133, 20010), (148, 20067), (185, 20292), (206, 20346), (217, 20430), (228, 20481), (235, 20520), (248, 20532), (285, 20610), (297, 20709), (306, 20745), (333, 20892), (366, 21066), (369, 21102), (389, 21171), (390, 21174), (430, 21345), (468, 21483),

Gene: Bovely\_47 Start: 31670, Stop: 33760, Start Num: 45

Candidate Starts for Bovely\_47:

(Start: 45 @31670 has 304 MA's), (78, 31811), (79, 31826), (Start: 88 @31880 has 3 MA's), (90, 31886), (Start: 97 @31931 has 1 MA's), (116, 32012), (118, 32021), (132, 32099), (134, 32108), (141, 32141), (156, 32234), (161, 32258), (169, 32300), (179, 32378), (180, 32381), (203, 32468), (212, 32531), (214, 32540), (275, 32705), (279, 32717), (297, 32849), (302, 32876), (311, 32927), (313, 32942), (316, 32963), (329, 33029), (357, 33173), (358, 33179), (360, 33188), (365, 33224), (369, 33272), (371, 33284), (378, 33311), (384, 33323), (392, 33377), (404, 33428), (411, 33449), (421, 33482), (426, 33500), (432, 33530), (434, 33542), (443, 33569), (462, 33629), (478, 33698), (479, 33701), (485, 33752),

Gene: Bowden\_47 Start: 33075, Stop: 35189, Start Num: 45

Candidate Starts for Bowden\_47:

(Start: 20 @33003 has 1 MA's), (30, 33039), (Start: 45 @33075 has 304 MA's), (Start: 88 @33276 has 3 MA's), (Start: 97 @33327 has 1 MA's), (116, 33408), (118, 33417), (134, 33504), (135, 33516), (141, 33537), (161, 33654), (169, 33696), (170, 33705), (179, 33774), (203, 33882), (212, 33945), (269, 34119), (279, 34146), (311, 34356), (316, 34392), (323, 34419), (325, 34437), (329, 34458), (357, 34602), (358, 34608), (360, 34617), (365, 34653), (371, 34713), (378, 34740), (384, 34752), (388, 34770), (392, 34806), (394, 34812), (421, 34911), (426, 34929), (432, 34959), (434, 34971), (455, 35025), (462, 35058), (478, 35127), (485, 35181),

Gene: Bowtie\_52 Start: 35314, Stop: 33290, Start Num: 50

Candidate Starts for Bowtie\_52:

(28, 35365), (41, 35332), (Start: 50 @35314 has 19 MA's), (Start: 73 @35206 has 3 MA's), (Start: 88 @35131 has 3 MA's), (116, 34999), (118, 34990), (141, 34870), (169, 34714), (174, 34666), (178, 34639), (179, 34636), (182, 34624), (197, 34591), (203, 34570), (210, 34525), (212, 34507), (213, 34501), (214, 34498), (270, 34348), (283, 34300), (286, 34285), (311, 34120), (329, 34018), (333, 34000), (347, 33928), (357, 33874), (360, 33859), (361, 33841), (377, 33742), (393, 33679), (402, 33640), (426, 33550), (432, 33520), (447, 33472),

Gene: Bradman\_50 Start: 34610, Stop: 32664, Start Num: 71

Candidate Starts for Bradman\_50:

(Start: 45 @34712 has 304 MA's), (Start: 71 @34610 has 1 MA's), (Start: 73 @34601 has 3 MA's), (Start: 88 @34526 has 3 MA's), (116, 34394), (118, 34385), (128, 34322), (141, 34265), (168, 34118), (169, 34109), (174, 34061), (175, 34046), (179, 34031), (203, 33965), (208, 33935), (209, 33932), (210, 33920), (212, 33902), (213, 33896), (214, 33893), (263, 33740), (270, 33713), (283, 33665), (290, 33623), (311, 33485), (316, 33449), (326, 33398), (331, 33371), (344, 33311), (346, 33302), (357, 33239), (361, 33206), (363, 33197), (373, 33116), (393, 33044), (398, 33017), (417, 32957), (432, 32894),

Gene: Bradshaw\_41 Start: 32074, Stop: 30029, Start Num: 45

Candidate Starts for Bradshaw\_41:

(Start: 45 @32074 has 304 MA's), (74, 31954), (87, 31885), (Start: 97 @31831 has 1 MA's), (116, 31750), (118, 31741), (127, 31681), (132, 31663), (154, 31561), (156, 31528), (157, 31525), (159, 31516), (164, 31495), (168, 31474), (169, 31465), (175, 31402), (179, 31387), (181, 31381), (203, 31321), (209, 31288), (212, 31258), (213, 31252), (214, 31249), (252, 31114), (304, 30901), (310, 30868), (326, 30778), (328, 30769), (354, 30637), (363, 30577), (372, 30505), (385, 30466), (387, 30463), (388, 30451), (402, 30379), (421, 30307), (428, 30280), (465, 30145),

Gene: Braelyn\_41 Start: 18563, Stop: 20506, Start Num: 64

Candidate Starts for Braelyn\_41:

(Start: 64 @18563 has 64 MA's), (Start: 67 @18569 has 1 MA's), (83, 18671), (86, 18692), (90, 18701), (106, 18791), (111, 18800), (112, 18809), (114, 18812), (133, 18917), (198, 19226), (217, 19337), (235, 19427), (248, 19439), (306, 19652), (333, 19799), (349, 19862), (366, 19973), (390, 20081), (430, 20252), (438, 20291), (468, 20390),

Gene: Brataylor\_50 Start: 32949, Stop: 35039, Start Num: 45

Candidate Starts for Brataylor\_50:

(27, 32907), (Start: 45 @32949 has 304 MA's), (61, 32994), (79, 33105), (Start: 88 @33159 has 3 MA's), (90, 33165), (Start: 97 @33210 has 1 MA's), (116, 33291), (118, 33300), (132, 33378), (134, 33387), (141, 33420), (154, 33480), (156, 33513), (161, 33537), (169, 33579), (179, 33657), (180, 33660), (195, 33717), (203, 33747), (212, 33810), (214, 33819), (225, 33870), (242, 33939), (275, 33984), (279, 33996), (307, 34185), (311, 34206), (316, 34242), (326, 34293), (334, 34329), (346, 34389), (348, 34401), (357, 34452), (358, 34458), (365, 34503), (371, 34563), (378, 34590), (384, 34602), (385, 34605), (392, 34656), (394, 34662), (404, 34707), (410, 34725), (411, 34728), (421, 34761), (426, 34779), (432, 34809), (434, 34821), (443, 34848), (462, 34908), (479, 34980), (485, 35031),

Gene: BreSam8\_54 Start: 35900, Stop: 33882, Start Num: 55

Candidate Starts for BreSam8\_54:

(Start: 55 @35900 has 95 MA's), (Start: 71 @35807 has 1 MA's), (Start: 73 @35798 has 3 MA's), (78, 35774), (Start: 88 @35723 has 3 MA's), (Start: 97 @35672 has 1 MA's), (116, 35591), (118, 35582), (141, 35462), (154, 35402), (157, 35366), (169, 35306), (179, 35228), (203, 35156), (208, 35126), (212, 35093), (213, 35087), (214, 35084), (230, 35003), (239, 34973), (279, 34919), (304, 34748), (321, 34652), (329, 34610), (333, 34592), (343, 34544), (346, 34532), (356, 34475), (357, 34469), (360, 34454), (363, 34427), (370, 34364), (371, 34358), (377, 34334), (402, 34229), (421, 34160), (426, 34142), (428, 34133), (432, 34112), (459, 34034), (465, 33998), (481, 33935),

Gene: BroPlease\_47 Start: 31715, Stop: 33784, Start Num: 45

Candidate Starts for BroPlease\_47:

(Start: 45 @31715 has 304 MA's), (Start: 88 @31922 has 3 MA's), (Start: 97 @31973 has 1 MA's), (118, 32066), (134, 32153), (135, 32165), (141, 32186), (157, 32282), (161, 32303), (179, 32423),

(180, 32426), (186, 32456), (203, 32495), (210, 32540), (212, 32558), (229, 32642), (270, 32720), (279, 32744), (294, 32864), (297, 32876), (306, 32924), (311, 32954), (316, 32990), (323, 33017), (360, 33215), (363, 33242), (371, 33311), (384, 33350), (394, 33410), (404, 33455), (426, 33527), (436, 33575), (462, 33653), (478, 33722), (485, 33776),

Gene: Broseidon\_50 Start: 35450, Stop: 33417, Start Num: 49

Candidate Starts for Broseidon\_50:

(Start: 49 @35450 has 219 MA's), (68, 35387), (Start: 73 @35339 has 3 MA's), (78, 35315), (92, 35249), (Start: 97 @35213 has 1 MA's), (102, 35180), (116, 35132), (118, 35123), (127, 35066), (134, 35039), (141, 35006), (169, 34850), (170, 34841), (179, 34772), (203, 34700), (208, 34670), (209, 34667), (212, 34637), (213, 34631), (214, 34628), (232, 34541), (241, 34517), (244, 34511), (255, 34499), (261, 34490), (279, 34442), (311, 34238), (329, 34136), (333, 34118), (360, 33977), (363, 33950), (392, 33806), (393, 33803), (399, 33773), (417, 33710), (426, 33677), (428, 33668), (432, 33647), (447, 33599), (465, 33533),

Gene: Bruiser\_49 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Bruiser\_49:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: BryanRecycles\_48 Start: 31960, Stop: 34050, Start Num: 45

Candidate Starts for BryanRecycles\_48:

(14, 31876), (16, 31882), (27, 31918), (30, 31924), (Start: 45 @31960 has 304 MA's), (78, 32101), (79, 32116), (82, 32137), (Start: 88 @32170 has 3 MA's), (90, 32176), (Start: 97 @32221 has 1 MA's), (116, 32302), (118, 32311), (132, 32389), (134, 32398), (141, 32431), (156, 32524), (161, 32548), (169, 32590), (179, 32668), (180, 32671), (203, 32758), (212, 32821), (214, 32830), (275, 32995), (279, 33007), (302, 33166), (311, 33217), (313, 33232), (316, 33253), (329, 33319), (357, 33463), (358, 33469), (360, 33478), (365, 33514), (369, 33562), (371, 33574), (378, 33601), (384, 33613), (392, 33667), (404, 33718), (411, 33739), (421, 33772), (426, 33790), (432, 33820), (434, 33832), (443, 33859), (462, 33919), (478, 33988), (479, 33991), (485, 34042),

Gene: Bryce\_40 Start: 31828, Stop: 29783, Start Num: 45

Candidate Starts for Bryce\_40:

(Start: 45 @31828 has 304 MA's), (74, 31708), (87, 31639), (Start: 97 @31585 has 1 MA's), (116, 31504), (118, 31495), (154, 31315), (156, 31282), (157, 31279), (159, 31270), (164, 31249), (169, 31219), (175, 31156), (179, 31141), (181, 31135), (203, 31075), (209, 31042), (212, 31012), (213, 31006), (214, 31003), (252, 30868), (301, 30673), (304, 30655), (310, 30622), (326, 30532), (328, 30523), (354, 30391), (363, 30331), (372, 30259), (385, 30220), (387, 30217), (388, 30205), (393, 30172), (402, 30133), (421, 30061), (428, 30034), (432, 30013), (436, 29995), (459, 29935), (465, 29899),

Gene: BubbleTrouble\_49 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for BubbleTrouble\_49:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392,

33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Bud\_51 Start: 34861, Stop: 32840, Start Num: 50

Candidate Starts for Bud\_51:

(28, 34912), (41, 34879), (Start: 50 @34861 has 19 MA's), (Start: 73 @34753 has 3 MA's), (Start: 88 @34678 has 3 MA's), (116, 34546), (118, 34537), (141, 34417), (169, 34261), (174, 34213), (178, 34186), (179, 34183), (182, 34171), (197, 34138), (203, 34117), (210, 34072), (212, 34054), (213, 34048), (214, 34045), (250, 33925), (283, 33850), (286, 33835), (290, 33808), (311, 33670), (321, 33610), (329, 33568), (333, 33550), (347, 33478), (357, 33424), (360, 33409), (361, 33391), (377, 33292), (393, 33229), (402, 33190), (426, 33100), (432, 33070), (447, 33022),

Gene: Bugatti\_52 Start: 35769, Stop: 33748, Start Num: 49

Candidate Starts for Bugatti\_52:

(Start: 49 @35769 has 219 MA's), (74, 35655), (92, 35568), (Start: 97 @35532 has 1 MA's), (116, 35451), (118, 35442), (126, 35385), (141, 35322), (169, 35166), (179, 35088), (185, 35067), (187, 35064), (203, 35022), (208, 34992), (210, 34977), (212, 34959), (213, 34953), (214, 34950), (221, 34917), (279, 34785), (311, 34581), (316, 34545), (321, 34521), (329, 34479), (333, 34461), (356, 34341), (357, 34335), (360, 34320), (363, 34293), (389, 34155), (403, 34092), (428, 33999), (432, 33978), (460, 33897), (465, 33864),

Gene: Buggy\_53 Start: 36246, Stop: 34207, Start Num: 45

Candidate Starts for Buggy\_53:

(Start: 45 @36246 has 304 MA's), (Start: 97 @36006 has 1 MA's), (118, 35916), (141, 35796), (169, 35640), (179, 35562), (203, 35490), (208, 35460), (209, 35457), (210, 35445), (212, 35427), (213, 35421), (214, 35418), (272, 35259), (283, 35214), (290, 35172), (311, 35034), (316, 34998), (329, 34932), (331, 34920), (344, 34860), (354, 34806), (357, 34788), (365, 34737), (377, 34656), (380, 34647), (393, 34593), (399, 34563), (402, 34554), (417, 34500), (432, 34437), (447, 34389), (451, 34380),

Gene: Bumblebee11\_48 Start: 35409, Stop: 33391, Start Num: 49

Candidate Starts for Bumblebee11\_48:

(Start: 49 @35409 has 219 MA's), (Start: 73 @35298 has 3 MA's), (92, 35208), (Start: 97 @35172 has 1 MA's), (102, 35139), (116, 35091), (118, 35082), (127, 35022), (141, 34962), (169, 34806), (170, 34797), (179, 34728), (182, 34716), (201, 34665), (203, 34656), (208, 34626), (209, 34623), (212, 34593), (213, 34587), (214, 34584), (248, 34464), (270, 34440), (279, 34416), (311, 34212), (329, 34110), (333, 34092), (343, 34041), (356, 33972), (360, 33951), (363, 33924), (392, 33780), (393, 33777), (399, 33747), (411, 33702), (426, 33651), (428, 33642), (432, 33621), (465, 33507), (479, 33450),

Gene: Burger\_48 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Burger\_48:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: BuzzBuzz\_52 Start: 35934, Stop: 33916, Start Num: 55

Candidate Starts for BuzzBuzz\_52:

(Start: 55 @35934 has 95 MA's), (Start: 71 @35841 has 1 MA's), (Start: 73 @35832 has 3 MA's), (78, 35808), (Start: 88 @35757 has 3 MA's), (Start: 97 @35706 has 1 MA's), (116, 35625), (118, 35616), (141, 35499), (157, 35403), (169, 35343), (176, 35274), (179, 35265), (180, 35262), (182, 35253), (203, 35193), (208, 35163), (209, 35160), (210, 35148), (212, 35130), (213, 35124), (214, 35121), (235, 35016), (239, 35010), (279, 34953), (311, 34749), (313, 34734), (316, 34713), (321, 34689), (326, 34662), (329, 34647), (356, 34509), (357, 34503), (360, 34488), (363, 34461), (370, 34398), (371, 34392), (377, 34368), (402, 34263), (411, 34227), (432, 34146), (459, 34068), (465, 34032), (481, 33969),

Gene: Bxz2\_50 Start: 35941, Stop: 33923, Start Num: 55

Candidate Starts for Bxz2\_50:

(Start: 55 @35941 has 95 MA's), (Start: 71 @35848 has 1 MA's), (Start: 73 @35839 has 3 MA's), (78, 35815), (Start: 88 @35764 has 3 MA's), (Start: 97 @35713 has 1 MA's), (116, 35632), (118, 35623), (141, 35506), (157, 35410), (169, 35350), (176, 35281), (179, 35272), (180, 35269), (182, 35260), (203, 35200), (208, 35170), (209, 35167), (210, 35155), (212, 35137), (213, 35131), (214, 35128), (235, 35023), (239, 35017), (279, 34960), (311, 34756), (313, 34741), (316, 34720), (321, 34696), (326, 34669), (329, 34654), (356, 34516), (357, 34510), (360, 34495), (363, 34468), (370, 34405), (371, 34399), (377, 34375), (402, 34270), (411, 34234), (432, 34153), (459, 34075), (465, 34039), (481, 33976),

Gene: C3\_49 Start: 35980, Stop: 33899, Start Num: 49

Candidate Starts for C3\_49:

(Start: 49 @35980 has 219 MA's), (78, 35842), (102, 35707), (116, 35659), (118, 35650), (127, 35590), (147, 35512), (153, 35473), (156, 35437), (169, 35374), (175, 35311), (179, 35296), (203, 35200), (208, 35170), (209, 35167), (212, 35137), (213, 35131), (214, 35128), (232, 35041), (270, 34966), (283, 34918), (286, 34903), (311, 34738), (329, 34636), (331, 34624), (344, 34564), (346, 34555), (354, 34510), (356, 34498), (360, 34477), (363, 34450), (393, 34285), (398, 34258), (402, 34246), (411, 34210), (432, 34129),

Gene: CRB1\_55 Start: 36607, Stop: 34571, Start Num: 45

Candidate Starts for CRB1\_55:

(Start: 45 @36607 has 304 MA's), (Start: 71 @36502 has 1 MA's), (Start: 73 @36493 has 3 MA's), (74, 36490), (78, 36469), (Start: 88 @36418 has 3 MA's), (Start: 97 @36367 has 1 MA's), (118, 36277), (126, 36220), (127, 36217), (141, 36157), (169, 36001), (170, 35992), (179, 35923), (192, 35887), (203, 35857), (208, 35827), (209, 35824), (210, 35812), (212, 35794), (213, 35788), (214, 35785), (272, 35623), (283, 35578), (290, 35536), (311, 35398), (316, 35362), (329, 35296), (331, 35284), (344, 35224), (354, 35170), (357, 35152), (378, 35020), (382, 35011), (388, 34990), (393, 34957), (402, 34918), (403, 34915), (410, 34885), (417, 34864), (419, 34858), (432, 34801), (447, 34753), (451, 34744),

Gene: Cadmus\_44 Start: 19159, Stop: 21102, Start Num: 64

Candidate Starts for Cadmus\_44:

(Start: 37 @19081 has 1 MA's), (Start: 64 @19159 has 64 MA's), (Start: 67 @19165 has 1 MA's), (83, 19267), (86, 19288), (90, 19297), (106, 19387), (111, 19396), (112, 19405), (114, 19408), (133, 19513), (166, 19681), (198, 19822), (217, 19933), (235, 20023), (248, 20035), (333, 20395), (364, 20551), (366, 20569), (369, 20605), (390, 20677), (438, 20887), (468, 20986), (483, 21058),

Gene: Caelakin\_50 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Caelakin\_50:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261,

34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Caelum\_49 Start: 32725, Stop: 34800, Start Num: 45

Candidate Starts for Caelum\_49:

(Start: 45 @32725 has 304 MA's), (79, 32881), (Start: 88 @32935 has 3 MA's), (Start: 97 @32986 has 1 MA's), (116, 33067), (118, 33076), (133, 33160), (134, 33163), (135, 33175), (141, 33196), (161, 33313), (165, 33328), (168, 33346), (169, 33355), (170, 33364), (179, 33433), (203, 33508), (205, 33514), (208, 33538), (209, 33541), (212, 33571), (275, 33745), (279, 33757), (299, 33895), (316, 34003), (323, 34030), (329, 34069), (357, 34213), (358, 34219), (360, 34228), (365, 34264), (369, 34312), (371, 34324), (378, 34351), (384, 34363), (388, 34381), (392, 34417), (394, 34423), (402, 34459), (411, 34489), (421, 34522), (426, 34540), (462, 34669), (478, 34738), (485, 34792),

Gene: Caliburn\_46 Start: 31771, Stop: 33861, Start Num: 45

Candidate Starts for Caliburn\_46:

(Start: 45 @31771 has 304 MA's), (78, 31912), (79, 31927), (82, 31948), (Start: 88 @31981 has 3 MA's), (90, 31987), (Start: 97 @32032 has 1 MA's), (116, 32113), (118, 32122), (132, 32200), (134, 32209), (141, 32242), (156, 32335), (161, 32359), (169, 32401), (179, 32479), (180, 32482), (203, 32569), (212, 32632), (214, 32641), (275, 32806), (279, 32818), (297, 32950), (302, 32977), (311, 33028), (313, 33043), (316, 33064), (329, 33130), (357, 33274), (358, 33280), (360, 33289), (365, 33325), (369, 33373), (371, 33385), (378, 33412), (384, 33424), (392, 33478), (404, 33529), (411, 33550), (421, 33583), (426, 33601), (432, 33631), (434, 33643), (443, 33670), (462, 33730), (478, 33799), (479, 33802), (485, 33853),

Gene: Calvinny\_54 Start: 35796, Stop: 33781, Start Num: 55

Candidate Starts for Calvinny\_54:

(Start: 55 @35796 has 95 MA's), (Start: 71 @35703 has 1 MA's), (Start: 73 @35694 has 3 MA's), (Start: 88 @35619 has 3 MA's), (Start: 97 @35568 has 1 MA's), (116, 35487), (118, 35478), (127, 35421), (141, 35361), (154, 35301), (157, 35265), (169, 35205), (170, 35196), (179, 35127), (182, 35115), (203, 35055), (208, 35025), (209, 35022), (210, 35010), (212, 34992), (213, 34986), (214, 34983), (221, 34950), (253, 34848), (279, 34818), (304, 34647), (310, 34614), (313, 34596), (316, 34575), (321, 34551), (329, 34509), (333, 34491), (343, 34443), (357, 34368), (363, 34326), (370, 34263), (371, 34257), (377, 34233), (402, 34128), (421, 34059), (426, 34041), (428, 34032), (432, 34011), (459, 33933), (465, 33897), (481, 33834),

Gene: Camperdownii\_48 Start: 35122, Stop: 33089, Start Num: 49

Candidate Starts for Camperdownii\_48:

(Start: 49 @35122 has 219 MA's), (68, 35059), (Start: 73 @35011 has 3 MA's), (78, 34987), (92, 34921), (Start: 97 @34885 has 1 MA's), (102, 34852), (116, 34804), (118, 34795), (127, 34738), (134, 34711), (141, 34678), (169, 34522), (170, 34513), (179, 34444), (203, 34372), (208, 34342), (209, 34339), (212, 34309), (213, 34303), (214, 34300), (232, 34213), (244, 34183), (255, 34171), (261, 34162), (279, 34114), (311, 33910), (329, 33808), (333, 33790), (360, 33649), (363, 33622), (392, 33478), (393, 33475), (399, 33445), (417, 33382), (426, 33349), (428, 33340), (432, 33319), (447, 33271), (465, 33205),

Gene: Candra\_53 Start: 34850, Stop: 32826, Start Num: 45

Candidate Starts for Candra\_53:

(32, 34883), (Start: 45 @34850 has 304 MA's), (Start: 88 @34664 has 3 MA's), (102, 34580), (116, 34532), (118, 34523), (127, 34463), (141, 34403), (153, 34346), (157, 34307), (165, 34274), (169, 34247), (170, 34238), (175, 34184), (179, 34169), (203, 34097), (208, 34067), (212, 34034), (213, 34028), (214, 34025), (283, 33833), (307, 33674), (311, 33653), (331, 33539), (344, 33479), (346, 33470), (354, 33425), (357, 33407), (361, 33374), (378, 33272), (380, 33266), (393, 33212), (398,



33185), (399, 33182), (402, 33173), (417, 33119), (432, 33056), (440, 33026), (451, 32999),

Gene: Caraxes\_51 Start: 34277, Stop: 32370, Start Num: 73

Candidate Starts for Caraxes\_51:

(Start: 45 @34388 has 304 MA's), (Start: 71 @34286 has 1 MA's), (Start: 73 @34277 has 3 MA's), (Start: 88 @34202 has 3 MA's), (102, 34118), (116, 34070), (118, 34061), (127, 34001), (141, 33941), (158, 33839), (169, 33785), (174, 33737), (179, 33707), (202, 33650), (203, 33641), (208, 33611), (209, 33608), (210, 33596), (212, 33578), (213, 33572), (214, 33569), (275, 33413), (283, 33377), (286, 33362), (301, 33251), (311, 33197), (316, 33161), (321, 33137), (326, 33110), (329, 33095), (344, 33023), (346, 33014), (357, 32951), (361, 32918), (363, 32909), (373, 32828), (402, 32717), (404, 32708), (419, 32657), (455, 32534),

Gene: Catalina\_52 Start: 35671, Stop: 33632, Start Num: 45

Candidate Starts for Catalina\_52:

(Start: 45 @35671 has 304 MA's), (Start: 73 @35557 has 3 MA's), (75, 35542), (78, 35533), (Start: 97 @35431 has 1 MA's), (118, 35341), (127, 35281), (141, 35221), (168, 35074), (169, 35065), (179, 34987), (182, 34975), (202, 34930), (203, 34921), (208, 34891), (210, 34876), (212, 34858), (213, 34852), (214, 34849), (272, 34684), (280, 34660), (283, 34639), (311, 34459), (331, 34345), (344, 34285), (361, 34180), (363, 34171), (393, 34018), (399, 33988), (417, 33925), (432, 33862),

Gene: Caviar\_50 Start: 35710, Stop: 33692, Start Num: 55

Candidate Starts for Caviar\_50:

(Start: 55 @35710 has 95 MA's), (Start: 71 @35617 has 1 MA's), (Start: 73 @35608 has 3 MA's), (77, 35587), (92, 35518), (Start: 97 @35482 has 1 MA's), (102, 35449), (116, 35401), (118, 35392), (141, 35275), (157, 35179), (169, 35119), (176, 35050), (179, 35041), (182, 35029), (203, 34969), (208, 34939), (209, 34936), (210, 34924), (212, 34906), (213, 34900), (214, 34897), (235, 34792), (239, 34786), (279, 34729), (311, 34525), (321, 34465), (329, 34423), (333, 34405), (346, 34342), (357, 34279), (360, 34264), (363, 34237), (372, 34165), (393, 34078), (403, 34036), (428, 33943), (432, 33922), (465, 33808),

Gene: CeilingFan\_44 Start: 19422, Stop: 21362, Start Num: 64

Candidate Starts for CeilingFan\_44:

(Start: 64 @19422 has 64 MA's), (90, 19554), (96, 19590), (102, 19626), (111, 19653), (114, 19665), (133, 19770), (144, 19812), (148, 19827), (185, 20052), (206, 20106), (217, 20190), (228, 20241), (235, 20280), (248, 20292), (285, 20370), (297, 20469), (306, 20505), (333, 20652), (366, 20826), (369, 20862), (389, 20931), (390, 20934), (430, 21105), (468, 21243),

Gene: Celery\_50 Start: 33303, Stop: 35366, Start Num: 45

Candidate Starts for Celery\_50:

(Start: 45 @33303 has 304 MA's), (61, 33342), (Start: 71 @33405 has 1 MA's), (Start: 73 @33414 has 3 MA's), (81, 33465), (82, 33471), (84, 33492), (Start: 88 @33504 has 3 MA's), (118, 33645), (119, 33660), (134, 33732), (141, 33765), (161, 33882), (169, 33924), (179, 34002), (180, 34005), (203, 34092), (208, 34122), (209, 34125), (212, 34155), (234, 34266), (275, 34317), (279, 34329), (286, 34368), (307, 34518), (316, 34575), (340, 34698), (363, 34824), (365, 34833), (388, 34950), (389, 34962), (392, 34986), (393, 34989), (404, 35037), (421, 35091), (426, 35109), (432, 35139), (436, 35157), (443, 35175), (449, 35187), (462, 35235), (481, 35313),

Gene: Celeste\_48 Start: 32415, Stop: 34505, Start Num: 45

Candidate Starts for Celeste\_48:

(27, 32373), (30, 32379), (Start: 45 @32415 has 304 MA's), (61, 32460), (79, 32571), (Start: 88 @32625 has 3 MA's), (90, 32631), (Start: 97 @32676 has 1 MA's), (116, 32757), (118, 32766), (132, 32844), (134, 32853), (141, 32886), (147, 32904), (154, 32946), (156, 32979), (161, 33003), (169, 33045), (179, 33123), (180, 33126), (195, 33183), (203, 33213), (212, 33276), (214, 33285), (225,

33336), (242, 33405), (275, 33450), (279, 33462), (297, 33594), (307, 33651), (311, 33672), (316, 33708), (326, 33759), (334, 33795), (346, 33855), (357, 33918), (358, 33924), (360, 33933), (365, 33969), (371, 34029), (378, 34056), (384, 34068), (385, 34071), (392, 34122), (394, 34128), (404, 34173), (410, 34191), (411, 34194), (421, 34227), (426, 34245), (432, 34275), (434, 34287), (443, 34314), (462, 34374), (479, 34446), (485, 34497),

Gene: Centaur\_52 Start: 36090, Stop: 34054, Start Num: 45

Candidate Starts for Centaur\_52:

(Start: 45 @36090 has 304 MA's), (61, 36051), (Start: 73 @35979 has 3 MA's), (Start: 88 @35904 has 3 MA's), (Start: 97 @35853 has 1 MA's), (102, 35820), (118, 35763), (134, 35676), (141, 35643), (169, 35487), (179, 35409), (182, 35397), (198, 35355), (203, 35337), (208, 35307), (209, 35304), (210, 35292), (212, 35274), (213, 35268), (214, 35265), (272, 35106), (283, 35061), (290, 35019), (291, 35016), (311, 34881), (316, 34845), (329, 34779), (331, 34767), (344, 34707), (354, 34653), (357, 34635), (365, 34584), (377, 34503), (380, 34494), (393, 34440), (399, 34410), (402, 34401), (417, 34347), (432, 34284), (447, 34236), (451, 34227),

Gene: CentreCat\_50 Start: 35451, Stop: 33418, Start Num: 49

Candidate Starts for CentreCat\_50:

(Start: 49 @35451 has 219 MA's), (68, 35388), (Start: 73 @35340 has 3 MA's), (78, 35316), (92, 35250), (Start: 97 @35214 has 1 MA's), (102, 35181), (116, 35133), (118, 35124), (127, 35067), (134, 35040), (141, 35007), (169, 34851), (170, 34842), (179, 34773), (203, 34701), (208, 34671), (209, 34668), (212, 34638), (213, 34632), (214, 34629), (232, 34542), (244, 34512), (255, 34500), (261, 34491), (279, 34443), (311, 34239), (329, 34137), (333, 34119), (360, 33978), (363, 33951), (392, 33807), (393, 33804), (399, 33774), (417, 33711), (426, 33678), (428, 33669), (432, 33648), (447, 33600), (465, 33534),

Gene: Cerulean\_51 Start: 35885, Stop: 33834, Start Num: 49

Candidate Starts for Cerulean\_51:

(Start: 49 @35885 has 219 MA's), (68, 35822), (Start: 73 @35774 has 3 MA's), (74, 35771), (78, 35750), (92, 35684), (Start: 97 @35648 has 1 MA's), (102, 35615), (116, 35567), (118, 35558), (127, 35501), (141, 35441), (146, 35426), (169, 35285), (170, 35276), (179, 35207), (203, 35135), (208, 35105), (209, 35102), (212, 35072), (213, 35066), (214, 35063), (260, 34910), (279, 34859), (311, 34655), (329, 34553), (333, 34535), (360, 34394), (363, 34367), (392, 34223), (393, 34220), (399, 34190), (417, 34127), (426, 34094), (428, 34085), (432, 34064), (447, 34016), (465, 33950),

Gene: Chadwick\_47 Start: 34305, Stop: 32278, Start Num: 49

Candidate Starts for Chadwick\_47:

(Start: 24 @34347 has 1 MA's), (Start: 49 @34305 has 219 MA's), (Start: 88 @34119 has 3 MA's), (Start: 97 @34068 has 1 MA's), (102, 34035), (116, 33987), (118, 33978), (123, 33936), (147, 33840), (153, 33801), (158, 33756), (168, 33711), (169, 33702), (175, 33639), (176, 33633), (179, 33624), (203, 33552), (208, 33522), (209, 33519), (210, 33507), (212, 33489), (213, 33483), (214, 33480), (262, 33357), (283, 33291), (290, 33249), (308, 33129), (310, 33114), (313, 33096), (322, 33048), (329, 33009), (343, 32940), (354, 32883), (356, 32871), (357, 32865), (363, 32823), (365, 32814), (377, 32733), (399, 32634), (410, 32592), (421, 32556), (426, 32538), (428, 32529), (482, 32319),

Gene: ChampagnePapi\_52 Start: 35884, Stop: 33833, Start Num: 49

Candidate Starts for ChampagnePapi\_52:

(Start: 49 @35884 has 219 MA's), (68, 35821), (Start: 73 @35773 has 3 MA's), (74, 35770), (92, 35683), (Start: 97 @35647 has 1 MA's), (102, 35614), (116, 35566), (118, 35557), (127, 35500), (134, 35473), (141, 35440), (146, 35425), (169, 35284), (170, 35275), (179, 35206), (203, 35134), (208, 35104), (209, 35101), (212, 35071), (213, 35065), (214, 35062), (260, 34909), (279, 34858), (311, 34654), (329, 34552), (333, 34534), (360, 34393), (363, 34366), (392, 34222), (393, 34219), (399, 34189), (417, 34126), (426, 34093), (428, 34084), (432, 34063), (447, 34015), (465, 33949),

Gene: Changeling\_50 Start: 36301, Stop: 34262, Start Num: 45

Candidate Starts for Changeling\_50:

(Start: 45 @36301 has 304 MA's), (Start: 73 @36190 has 3 MA's), (87, 36118), (Start: 88 @36115 has 3 MA's), (Start: 97 @36064 has 1 MA's), (102, 36031), (116, 35983), (118, 35974), (127, 35914), (141, 35854), (169, 35698), (170, 35689), (179, 35620), (203, 35548), (208, 35518), (209, 35515), (212, 35485), (213, 35479), (214, 35476), (272, 35314), (283, 35269), (290, 35227), (311, 35089), (316, 35053), (329, 34987), (331, 34975), (344, 34915), (357, 34843), (377, 34711), (380, 34702), (393, 34648), (398, 34621), (402, 34609), (417, 34555), (419, 34549), (432, 34492), (447, 34444), (451, 34435),

Gene: Chaph\_50 Start: 35459, Stop: 33426, Start Num: 49

Candidate Starts for Chaph\_50:

(Start: 49 @35459 has 219 MA's), (68, 35396), (Start: 73 @35348 has 3 MA's), (78, 35324), (92, 35258), (Start: 97 @35222 has 1 MA's), (102, 35189), (116, 35141), (118, 35132), (127, 35075), (134, 35048), (141, 35015), (169, 34859), (170, 34850), (179, 34781), (203, 34709), (208, 34679), (209, 34676), (212, 34646), (213, 34640), (214, 34637), (232, 34550), (244, 34520), (255, 34508), (261, 34499), (279, 34451), (311, 34247), (329, 34145), (333, 34127), (360, 33986), (363, 33959), (392, 33815), (393, 33812), (399, 33782), (417, 33719), (426, 33686), (428, 33677), (432, 33656), (447, 33608), (465, 33542),

Gene: Chargerpower\_50 Start: 34671, Stop: 32638, Start Num: 50

Candidate Starts for Chargerpower\_50:

(Start: 50 @34671 has 19 MA's), (Start: 71 @34572 has 1 MA's), (Start: 73 @34563 has 3 MA's), (Start: 88 @34488 has 3 MA's), (116, 34356), (118, 34347), (119, 34332), (127, 34287), (141, 34227), (146, 34212), (150, 34182), (169, 34071), (179, 33993), (203, 33927), (209, 33894), (212, 33864), (213, 33858), (214, 33855), (230, 33774), (272, 33690), (283, 33645), (290, 33603), (295, 33546), (311, 33465), (321, 33405), (329, 33363), (331, 33351), (344, 33291), (346, 33282), (357, 33219), (361, 33186), (363, 33177), (402, 32985), (417, 32931), (432, 32868), (447, 32820),

Gene: Charm\_50 Start: 35555, Stop: 33516, Start Num: 45

Candidate Starts for Charm\_50:

(Start: 45 @35555 has 304 MA's), (Start: 71 @35450 has 1 MA's), (Start: 73 @35441 has 3 MA's), (118, 35225), (119, 35210), (127, 35165), (128, 35162), (134, 35138), (141, 35105), (169, 34949), (179, 34871), (182, 34859), (203, 34805), (210, 34760), (212, 34742), (213, 34736), (214, 34733), (270, 34571), (272, 34568), (283, 34523), (293, 34448), (301, 34397), (311, 34343), (344, 34169), (346, 34160), (354, 34115), (357, 34097), (363, 34055), (393, 33902), (411, 33827), (432, 33746), (447, 33698),

Gene: Chartreuse\_52 Start: 34210, Stop: 32186, Start Num: 45

Candidate Starts for Chartreuse\_52:

(32, 34243), (Start: 45 @34210 has 304 MA's), (Start: 88 @34024 has 3 MA's), (102, 33940), (116, 33892), (118, 33883), (127, 33823), (141, 33763), (153, 33706), (157, 33667), (165, 33634), (169, 33607), (170, 33598), (175, 33544), (179, 33529), (203, 33457), (208, 33427), (212, 33394), (213, 33388), (214, 33385), (283, 33193), (307, 33034), (311, 33013), (331, 32899), (344, 32839), (346, 32830), (354, 32785), (357, 32767), (361, 32734), (378, 32632), (380, 32626), (393, 32572), (398, 32545), (399, 32542), (402, 32533), (417, 32479), (432, 32416), (440, 32386), (451, 32359),

Gene: Che12\_53 Start: 34820, Stop: 32802, Start Num: 45

Candidate Starts for Che12\_53:

(Start: 45 @34820 has 304 MA's), (78, 34685), (102, 34550), (116, 34502), (118, 34493), (127, 34433), (141, 34373), (147, 34355), (156, 34280), (158, 34271), (169, 34217), (174, 34169), (179, 34139), (203, 34073), (208, 34043), (209, 34040), (212, 34010), (213, 34004), (214, 34001), (232, 33914),

(270, 33857), (272, 33854), (283, 33809), (301, 33683), (311, 33629), (321, 33569), (326, 33542), (329, 33527), (344, 33455), (346, 33446), (357, 33383), (361, 33350), (363, 33341), (373, 33260), (380, 33242), (393, 33188), (398, 33161), (402, 33149), (432, 33032), (444, 32990), (477, 32867),

Gene: ChipMunk\_53 Start: 37464, Stop: 35425, Start Num: 45

Candidate Starts for ChipMunk\_53:

(Start: 45 @37464 has 304 MA's), (Start: 97 @37224 has 1 MA's), (118, 37134), (119, 37119), (141, 37014), (169, 36858), (179, 36780), (203, 36708), (208, 36678), (209, 36675), (212, 36645), (213, 36639), (214, 36636), (272, 36477), (283, 36432), (290, 36390), (311, 36252), (316, 36216), (329, 36150), (344, 36078), (354, 36024), (357, 36006), (387, 35856), (393, 35811), (402, 35772), (403, 35769), (417, 35718), (432, 35655), (447, 35607), (451, 35598), (484, 35457),

Gene: Chiqui\_49 Start: 35746, Stop: 33725, Start Num: 49

Candidate Starts for Chiqui\_49:

(Start: 49 @35746 has 219 MA's), (74, 35632), (92, 35545), (Start: 97 @35509 has 1 MA's), (102, 35476), (116, 35428), (118, 35419), (141, 35299), (165, 35170), (169, 35143), (170, 35134), (179, 35065), (185, 35044), (203, 34999), (208, 34969), (209, 34966), (210, 34954), (212, 34936), (213, 34930), (214, 34927), (279, 34762), (311, 34558), (321, 34498), (329, 34456), (333, 34438), (343, 34387), (356, 34318), (357, 34312), (360, 34297), (372, 34198), (392, 34114), (403, 34069), (428, 33976), (432, 33955), (465, 33841),

Gene: Chucky\_47 Start: 32005, Stop: 34095, Start Num: 45

Candidate Starts for Chucky\_47:

(15, 31924), (Start: 45 @32005 has 304 MA's), (61, 32050), (79, 32161), (82, 32182), (Start: 88 @32215 has 3 MA's), (90, 32221), (Start: 97 @32266 has 1 MA's), (116, 32347), (118, 32356), (132, 32434), (141, 32476), (154, 32536), (156, 32569), (161, 32593), (169, 32635), (170, 32644), (179, 32713), (180, 32716), (203, 32803), (212, 32866), (214, 32875), (225, 32926), (242, 32995), (275, 33040), (279, 33052), (297, 33184), (311, 33262), (313, 33277), (316, 33298), (326, 33349), (357, 33508), (358, 33514), (360, 33523), (365, 33559), (371, 33619), (378, 33646), (384, 33658), (392, 33712), (394, 33718), (411, 33784), (421, 33817), (426, 33835), (432, 33865), (434, 33877), (443, 33904), (462, 33964), (479, 34036),

Gene: Chupacabra\_48 Start: 35182, Stop: 33101, Start Num: 34

Candidate Starts for Chupacabra\_48:

(Start: 34 @35182 has 17 MA's), (Start: 73 @35041 has 3 MA's), (74, 35038), (78, 35017), (Start: 97 @34915 has 1 MA's), (102, 34882), (116, 34834), (118, 34825), (127, 34768), (141, 34708), (146, 34693), (157, 34612), (169, 34552), (179, 34474), (182, 34462), (202, 34411), (203, 34402), (208, 34372), (212, 34339), (213, 34333), (214, 34330), (266, 34165), (272, 34147), (283, 34102), (290, 34060), (311, 33922), (329, 33820), (333, 33802), (343, 33751), (344, 33748), (356, 33682), (357, 33676), (360, 33661), (363, 33634), (365, 33625), (371, 33565), (392, 33490), (393, 33487), (394, 33484), (403, 33445), (417, 33394), (419, 33388), (432, 33331), (465, 33217), (479, 33160),

Gene: Cici\_49 Start: 35424, Stop: 33406, Start Num: 49

Candidate Starts for Cici\_49:

(Start: 49 @35424 has 219 MA's), (Start: 73 @35313 has 3 MA's), (92, 35223), (Start: 97 @35187 has 1 MA's), (102, 35154), (116, 35106), (118, 35097), (127, 35037), (141, 34977), (169, 34821), (170, 34812), (179, 34743), (182, 34731), (201, 34680), (203, 34671), (208, 34641), (209, 34638), (212, 34608), (213, 34602), (214, 34599), (248, 34479), (270, 34455), (279, 34431), (311, 34227), (329, 34125), (333, 34107), (343, 34056), (356, 33987), (360, 33966), (363, 33939), (392, 33795), (393, 33792), (399, 33762), (411, 33717), (426, 33666), (428, 33657), (432, 33636), (465, 33522), (479, 33465),

Gene: Cindaradix\_47 Start: 35078, Stop: 33027, Start Num: 49

Candidate Starts for Cindaradix\_47:

(Start: 49 @35078 has 219 MA's), (Start: 73 @34967 has 3 MA's), (92, 34877), (Start: 97 @34841 has 1 MA's), (102, 34808), (116, 34760), (118, 34751), (127, 34694), (141, 34634), (169, 34478), (170, 34469), (176, 34409), (179, 34400), (182, 34388), (203, 34328), (208, 34298), (209, 34295), (212, 34265), (213, 34259), (214, 34256), (221, 34223), (258, 34103), (270, 34076), (279, 34052), (311, 33848), (329, 33746), (333, 33728), (343, 33677), (352, 33638), (356, 33608), (360, 33587), (363, 33560), (392, 33416), (393, 33413), (399, 33383), (411, 33338), (426, 33287), (428, 33278), (432, 33257), (447, 33209), (465, 33143), (479, 33086),

Gene: Cintron\_49 Start: 35425, Stop: 33392, Start Num: 49

Candidate Starts for Cintron\_49:

(Start: 49 @35425 has 219 MA's), (68, 35362), (Start: 73 @35314 has 3 MA's), (78, 35290), (92, 35224), (Start: 97 @35188 has 1 MA's), (102, 35155), (116, 35107), (118, 35098), (127, 35041), (134, 35014), (141, 34981), (169, 34825), (170, 34816), (179, 34747), (203, 34675), (208, 34645), (209, 34642), (212, 34612), (213, 34606), (214, 34603), (232, 34516), (244, 34486), (255, 34474), (261, 34465), (279, 34417), (311, 34213), (329, 34111), (333, 34093), (360, 33952), (363, 33925), (392, 33781), (393, 33778), (399, 33748), (417, 33685), (426, 33652), (428, 33643), (432, 33622), (447, 33574), (465, 33508),

Gene: Circinus\_18 Start: 7365, Stop: 9311, Start Num: 65

Candidate Starts for Circinus\_18:

(Start: 65 @7365 has 26 MA's), (90, 7506), (Start: 103 @7581 has 3 MA's), (105, 7590), (111, 7605), (114, 7617), (133, 7722), (147, 7773), (183, 7995), (198, 8028), (213, 8115), (231, 8208), (298, 8421), (327, 8574), (332, 8598), (343, 8637), (360, 8727), (381, 8847), (390, 8883), (412, 8985), (416, 9000), (468, 9192),

Gene: Citius\_50 Start: 35469, Stop: 33436, Start Num: 49

Candidate Starts for Citius\_50:

(Start: 49 @35469 has 219 MA's), (68, 35406), (Start: 73 @35358 has 3 MA's), (78, 35334), (92, 35268), (Start: 97 @35232 has 1 MA's), (102, 35199), (116, 35151), (118, 35142), (127, 35085), (134, 35058), (141, 35025), (169, 34869), (170, 34860), (179, 34791), (203, 34719), (208, 34689), (209, 34686), (212, 34656), (213, 34650), (214, 34647), (232, 34560), (241, 34536), (244, 34530), (255, 34518), (261, 34509), (279, 34461), (311, 34257), (329, 34155), (333, 34137), (360, 33996), (363, 33969), (392, 33825), (393, 33822), (399, 33792), (417, 33729), (426, 33696), (428, 33687), (432, 33666), (447, 33618), (465, 33552),

Gene: Clarenza\_49 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for Clarenza\_49:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: CloudWang3\_54 Start: 34998, Stop: 32944, Start Num: 45

Candidate Starts for CloudWang3\_54:

(Start: 45 @34998 has 304 MA's), (Start: 88 @34812 has 3 MA's), (Start: 97 @34761 has 1 MA's), (102, 34728), (116, 34680), (118, 34671), (127, 34611), (141, 34551), (153, 34494), (157, 34455), (165, 34422), (169, 34395), (170, 34386), (175, 34332), (179, 34317), (203, 34245), (208, 34215), (212, 34182), (213, 34176), (214, 34173), (232, 34086), (250, 34032), (270, 33999), (283, 33951), (290, 33909), (311, 33771), (331, 33657), (344, 33597), (346, 33588), (354, 33543), (357, 33525),

(361, 33492), (378, 33390), (380, 33384), (393, 33330), (398, 33303), (402, 33291), (417, 33237), (432, 33174), (440, 33144), (451, 33117), (461, 33078),

Gene: Cocoaberry\_50 Start: 35452, Stop: 33419, Start Num: 49

Candidate Starts for Cocoaberry\_50:

(Start: 49 @35452 has 219 MA's), (68, 35389), (Start: 73 @35341 has 3 MA's), (78, 35317), (92, 35251), (Start: 97 @35215 has 1 MA's), (102, 35182), (116, 35134), (118, 35125), (127, 35068), (134, 35041), (141, 35008), (169, 34852), (170, 34843), (179, 34774), (203, 34702), (208, 34672), (209, 34669), (212, 34639), (213, 34633), (214, 34630), (232, 34543), (244, 34513), (255, 34501), (261, 34492), (279, 34444), (311, 34240), (329, 34138), (333, 34120), (360, 33979), (363, 33952), (392, 33808), (393, 33805), (399, 33775), (417, 33712), (426, 33679), (428, 33670), (432, 33649), (447, 33601), (465, 33535),

Gene: Colbster\_54 Start: 35910, Stop: 33892, Start Num: 55

Candidate Starts for Colbster\_54:

(Start: 55 @35910 has 95 MA's), (Start: 71 @35817 has 1 MA's), (Start: 73 @35808 has 3 MA's), (78, 35784), (Start: 88 @35733 has 3 MA's), (Start: 97 @35682 has 1 MA's), (116, 35601), (118, 35592), (141, 35472), (154, 35412), (157, 35376), (169, 35316), (179, 35238), (203, 35166), (208, 35136), (212, 35103), (213, 35097), (214, 35094), (230, 35013), (239, 34983), (279, 34929), (304, 34758), (321, 34662), (329, 34620), (333, 34602), (343, 34554), (346, 34542), (356, 34485), (357, 34479), (360, 34464), (363, 34437), (370, 34374), (371, 34368), (377, 34344), (402, 34239), (421, 34170), (426, 34152), (428, 34143), (432, 34122), (459, 34044), (465, 34008), (481, 33945),

Gene: Colin\_51 Start: 36102, Stop: 34045, Start Num: 45

Candidate Starts for Colin\_51:

(Start: 45 @36102 has 304 MA's), (Start: 73 @35988 has 3 MA's), (74, 35985), (87, 35916), (Start: 88 @35913 has 3 MA's), (Start: 97 @35862 has 1 MA's), (102, 35829), (116, 35781), (118, 35772), (127, 35712), (141, 35652), (169, 35496), (170, 35487), (179, 35418), (203, 35352), (208, 35322), (209, 35319), (210, 35307), (212, 35289), (213, 35283), (214, 35280), (272, 35097), (283, 35052), (290, 35010), (311, 34872), (329, 34770), (331, 34758), (344, 34698), (357, 34626), (377, 34494), (380, 34485), (393, 34431), (410, 34359), (417, 34338), (419, 34332), (432, 34275), (447, 34227), (451, 34218),

Gene: Commander\_50 Start: 35447, Stop: 33414, Start Num: 49

Candidate Starts for Commander\_50:

(Start: 49 @35447 has 219 MA's), (68, 35384), (Start: 73 @35336 has 3 MA's), (78, 35312), (92, 35246), (Start: 97 @35210 has 1 MA's), (102, 35177), (116, 35129), (118, 35120), (127, 35063), (134, 35036), (141, 35003), (156, 34910), (169, 34847), (170, 34838), (179, 34769), (203, 34697), (208, 34667), (209, 34664), (212, 34634), (213, 34628), (214, 34625), (232, 34538), (244, 34508), (255, 34496), (261, 34487), (279, 34439), (311, 34235), (329, 34133), (333, 34115), (360, 33974), (363, 33947), (392, 33803), (393, 33800), (399, 33770), (417, 33707), (426, 33674), (428, 33665), (432, 33644), (447, 33596), (465, 33530),

Gene: Comrade\_21 Start: 8141, Stop: 10084, Start Num: 65

Candidate Starts for Comrade\_21:

(62, 8132), (Start: 65 @8141 has 26 MA's), (90, 8279), (111, 8378), (114, 8390), (133, 8495), (244, 9008), (289, 9122), (305, 9224), (327, 9347), (332, 9371), (351, 9443), (366, 9548), (370, 9590), (381, 9620), (390, 9656), (393, 9677), (405, 9728), (412, 9758), (427, 9809), (468, 9965), (476, 10007),

Gene: Conan\_48 Start: 33218, Stop: 35281, Start Num: 45

Candidate Starts for Conan\_48:

(12, 33116), (13, 33122), (Start: 26 @33167 has 1 MA's), (Start: 45 @33218 has 304 MA's), (61, 33257), (Start: 71 @33320 has 1 MA's), (Start: 73 @33329 has 3 MA's), (81, 33380), (82, 33386),

(Start: 88 @33419 has 3 MA's), (Start: 97 @33470 has 1 MA's), (118, 33560), (119, 33575), (134, 33647), (141, 33680), (161, 33797), (169, 33839), (170, 33848), (179, 33917), (180, 33920), (184, 33941), (203, 34007), (212, 34070), (214, 34079), (270, 34220), (279, 34244), (307, 34433), (316, 34490), (340, 34613), (363, 34739), (365, 34748), (388, 34865), (389, 34877), (392, 34901), (393, 34904), (404, 34952), (421, 35006), (426, 35024), (432, 35054), (451, 35108), (462, 35150), (481, 35228), (485, 35273),

Gene: Connomayer\_50 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Connomayer\_50:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (241, 34515), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Conquerage\_51 Start: 35742, Stop: 33703, Start Num: 45

Candidate Starts for Conquerage\_51:

(Start: 45 @35742 has 304 MA's), (Start: 73 @35628 has 3 MA's), (75, 35613), (78, 35604), (Start: 97 @35502 has 1 MA's), (118, 35412), (127, 35352), (141, 35292), (168, 35145), (169, 35136), (179, 35058), (182, 35046), (202, 35001), (203, 34992), (208, 34962), (210, 34947), (212, 34929), (213, 34923), (214, 34920), (272, 34755), (280, 34731), (283, 34710), (311, 34530), (331, 34416), (344, 34356), (361, 34251), (363, 34242), (393, 34089), (399, 34059), (417, 33996), (432, 33933),

Gene: Conspiracy\_43 Start: 34402, Stop: 32333, Start Num: 49

Candidate Starts for Conspiracy\_43:

(Start: 49 @34402 has 219 MA's), (Start: 88 @34216 has 3 MA's), (Start: 97 @34165 has 1 MA's), (102, 34132), (116, 34084), (118, 34075), (141, 33955), (146, 33940), (164, 33829), (165, 33826), (169, 33799), (170, 33790), (176, 33730), (179, 33721), (184, 33697), (203, 33610), (208, 33580), (209, 33577), (212, 33547), (213, 33541), (214, 33538), (283, 33346), (308, 33184), (313, 33151), (322, 33103), (329, 33064), (343, 32995), (354, 32938), (356, 32926), (357, 32920), (363, 32878), (365, 32869), (392, 32722), (399, 32689), (410, 32647), (421, 32611), (426, 32593), (428, 32584), (482, 32374),

Gene: Coog\_43 Start: 34563, Stop: 32434, Start Num: 49

Candidate Starts for Coog\_43:

(Start: 49 @34563 has 219 MA's), (Start: 88 @34377 has 3 MA's), (Start: 97 @34326 has 1 MA's), (116, 34245), (118, 34236), (141, 34116), (146, 34101), (164, 33990), (165, 33987), (169, 33960), (170, 33951), (179, 33882), (184, 33858), (203, 33771), (208, 33741), (209, 33738), (212, 33708), (213, 33702), (214, 33699), (239, 33588), (283, 33447), (286, 33432), (308, 33285), (313, 33252), (322, 33204), (329, 33165), (343, 33096), (354, 33039), (356, 33027), (357, 33021), (363, 32979), (365, 32970), (372, 32907), (394, 32817), (399, 32790), (410, 32748), (421, 32712), (426, 32694), (428, 32685), (432, 32664), (482, 32475),

Gene: Cookiedough\_53 Start: 34829, Stop: 32805, Start Num: 45

Candidate Starts for Cookiedough\_53:

(32, 34862), (Start: 45 @34829 has 304 MA's), (Start: 88 @34643 has 3 MA's), (102, 34559), (116, 34511), (118, 34502), (127, 34442), (141, 34382), (153, 34325), (157, 34286), (165, 34253), (169, 34226), (170, 34217), (175, 34163), (179, 34148), (203, 34076), (208, 34046), (212, 34013), (213, 34007), (214, 34004), (283, 33812), (307, 33653), (311, 33632), (331, 33518), (344, 33458), (346, 33449), (354, 33404), (357, 33386), (361, 33353), (378, 33251), (380, 33245), (393, 33191), (398, 33164), (399, 33161), (402, 33152), (417, 33098), (432, 33035), (440, 33005), (451, 32978),

Gene: CosmicSans\_41 Start: 32074, Stop: 30029, Start Num: 45

Candidate Starts for CosmicSans\_41:

(Start: 45 @32074 has 304 MA's), (74, 31954), (85, 31891), (87, 31885), (Start: 97 @31831 has 1 MA's), (116, 31750), (118, 31741), (127, 31681), (132, 31663), (154, 31561), (156, 31528), (157, 31525), (159, 31516), (164, 31495), (168, 31474), (169, 31465), (175, 31402), (179, 31387), (181, 31381), (203, 31321), (209, 31288), (212, 31258), (213, 31252), (214, 31249), (252, 31114), (304, 30901), (310, 30868), (326, 30778), (328, 30769), (354, 30637), (363, 30577), (372, 30505), (385, 30466), (387, 30463), (388, 30451), (402, 30379), (421, 30307), (428, 30280), (465, 30145),

Gene: Cross\_43 Start: 19648, Stop: 21585, Start Num: 67

Candidate Starts for Cross\_43:

(Start: 53 @19597 has 2 MA's), (56, 19606), (Start: 64 @19642 has 64 MA's), (Start: 67 @19648 has 1 MA's), (83, 19750), (86, 19771), (90, 19780), (93, 19792), (106, 19870), (111, 19879), (112, 19888), (114, 19891), (133, 19996), (154, 20095), (198, 20305), (235, 20506), (248, 20518), (306, 20731), (324, 20836), (333, 20878), (336, 20896), (366, 21052), (390, 21160), (430, 21331), (438, 21370), (468, 21469),

Gene: Crucio\_51 Start: 35698, Stop: 33662, Start Num: 45

Candidate Starts for Crucio\_51:

(Start: 45 @35698 has 304 MA's), (Start: 73 @35587 has 3 MA's), (74, 35584), (Start: 88 @35512 has 3 MA's), (Start: 97 @35461 has 1 MA's), (100, 35443), (110, 35407), (118, 35371), (141, 35251), (168, 35104), (169, 35095), (179, 35017), (203, 34945), (208, 34915), (209, 34912), (210, 34900), (212, 34882), (213, 34876), (214, 34873), (272, 34714), (283, 34669), (290, 34627), (311, 34489), (316, 34453), (329, 34387), (331, 34375), (344, 34315), (354, 34261), (357, 34243), (393, 34048), (402, 34009), (403, 34006), (417, 33955), (432, 33892), (447, 33844), (451, 33835), (484, 33694),

Gene: Cuco\_43 Start: 34435, Stop: 32384, Start Num: 49

Candidate Starts for Cuco\_43:

(Start: 49 @34435 has 219 MA's), (Start: 88 @34249 has 3 MA's), (Start: 97 @34198 has 1 MA's), (102, 34165), (116, 34117), (118, 34108), (123, 34066), (131, 34036), (147, 33970), (153, 33931), (158, 33886), (168, 33841), (169, 33832), (175, 33769), (176, 33763), (179, 33754), (203, 33682), (208, 33652), (209, 33649), (212, 33619), (213, 33613), (214, 33610), (239, 33499), (283, 33397), (286, 33382), (308, 33235), (313, 33202), (322, 33154), (329, 33115), (343, 33046), (354, 32989), (356, 32977), (357, 32971), (363, 32929), (365, 32920), (372, 32857), (394, 32767), (399, 32740), (410, 32698), (421, 32662), (426, 32644), (428, 32635), (482, 32425),

Gene: Cullens\_54 Start: 35906, Stop: 33888, Start Num: 55

Candidate Starts for Cullens\_54:

(Start: 55 @35906 has 95 MA's), (Start: 71 @35813 has 1 MA's), (Start: 73 @35804 has 3 MA's), (78, 35780), (Start: 88 @35729 has 3 MA's), (Start: 97 @35678 has 1 MA's), (116, 35597), (118, 35588), (141, 35468), (154, 35408), (157, 35372), (169, 35312), (179, 35234), (203, 35162), (208, 35132), (212, 35099), (213, 35093), (214, 35090), (230, 35009), (239, 34979), (279, 34925), (304, 34754), (321, 34658), (329, 34616), (333, 34598), (343, 34550), (346, 34538), (356, 34481), (357, 34475), (360, 34460), (363, 34433), (370, 34370), (371, 34364), (377, 34340), (402, 34235), (421, 34166), (426, 34148), (432, 34118), (459, 34040), (465, 34004), (481, 33941),

Gene: Cursive\_40 Start: 18459, Stop: 20411, Start Num: 64

Candidate Starts for Cursive\_40:

(Start: 53 @18414 has 2 MA's), (56, 18423), (Start: 64 @18459 has 64 MA's), (Start: 67 @18465 has 1 MA's), (83, 18567), (86, 18588), (90, 18597), (93, 18609), (106, 18687), (111, 18696), (112, 18705), (114, 18708), (133, 18813), (154, 18912), (198, 19122), (235, 19323), (248, 19335), (306, 19548), (324, 19653), (333, 19695), (336, 19713), (366, 19869), (390, 19977), (430, 20148), (438, 20187),



(468, 20286),

Gene: D29\_50 Start: 35562, Stop: 33481, Start Num: 49

Candidate Starts for D29\_50:

(Start: 49 @35562 has 219 MA's), (Start: 71 @35457 has 1 MA's), (Start: 73 @35448 has 3 MA's), (Start: 88 @35373 has 3 MA's), (102, 35289), (116, 35241), (118, 35232), (127, 35172), (147, 35094), (153, 35055), (156, 35019), (169, 34956), (175, 34893), (179, 34878), (203, 34782), (208, 34752), (209, 34749), (212, 34719), (213, 34713), (214, 34710), (232, 34623), (270, 34548), (283, 34500), (311, 34320), (329, 34218), (331, 34206), (344, 34146), (346, 34137), (354, 34092), (356, 34080), (360, 34059), (363, 34032), (371, 33963), (393, 33867), (398, 33840), (402, 33828), (411, 33792), (432, 33711), (444, 33669),

Gene: D32\_52 Start: 35562, Stop: 33481, Start Num: 49

Candidate Starts for D32\_52:

(Start: 49 @35562 has 219 MA's), (Start: 71 @35457 has 1 MA's), (Start: 73 @35448 has 3 MA's), (Start: 88 @35373 has 3 MA's), (102, 35289), (116, 35241), (118, 35232), (127, 35172), (147, 35094), (153, 35055), (156, 35019), (169, 34956), (175, 34893), (179, 34878), (203, 34782), (208, 34752), (209, 34749), (212, 34719), (213, 34713), (214, 34710), (232, 34623), (270, 34548), (283, 34500), (311, 34320), (329, 34218), (331, 34206), (344, 34146), (346, 34137), (354, 34092), (356, 34080), (360, 34059), (363, 34032), (371, 33963), (393, 33867), (398, 33840), (402, 33828), (411, 33792), (432, 33711), (444, 33669),

Gene: DBQu4n\_53 Start: 35543, Stop: 33480, Start Num: 49

Candidate Starts for DBQu4n\_53:

(Start: 49 @35543 has 219 MA's), (Start: 71 @35438 has 1 MA's), (Start: 73 @35429 has 3 MA's), (Start: 88 @35354 has 3 MA's), (102, 35270), (116, 35222), (118, 35213), (127, 35153), (147, 35075), (153, 35036), (156, 35000), (169, 34937), (175, 34874), (179, 34859), (200, 34781), (203, 34763), (208, 34733), (209, 34730), (210, 34718), (212, 34700), (213, 34694), (214, 34691), (275, 34535), (283, 34499), (290, 34457), (311, 34319), (316, 34283), (329, 34217), (331, 34205), (344, 34145), (346, 34136), (354, 34091), (356, 34079), (360, 34058), (363, 34031), (371, 33962), (393, 33866), (398, 33839), (402, 33827), (411, 33791), (432, 33710), (444, 33668),

Gene: DaHudson\_54 Start: 35899, Stop: 33881, Start Num: 55

Candidate Starts for DaHudson\_54:

(Start: 55 @35899 has 95 MA's), (Start: 71 @35806 has 1 MA's), (Start: 73 @35797 has 3 MA's), (78, 35773), (Start: 88 @35722 has 3 MA's), (Start: 97 @35671 has 1 MA's), (116, 35590), (118, 35581), (141, 35461), (154, 35401), (157, 35365), (169, 35305), (179, 35227), (203, 35155), (208, 35125), (212, 35092), (213, 35086), (214, 35083), (230, 35002), (239, 34972), (279, 34918), (304, 34747), (321, 34651), (329, 34609), (333, 34591), (343, 34543), (346, 34531), (356, 34474), (357, 34468), (360, 34453), (363, 34426), (370, 34363), (371, 34357), (377, 34333), (402, 34228), (421, 34159), (426, 34141), (428, 34132), (432, 34111), (459, 34033), (465, 33997), (481, 33934),

Gene: DaVinci\_52 Start: 34264, Stop: 32240, Start Num: 45

Candidate Starts for DaVinci\_52:

(32, 34297), (Start: 45 @34264 has 304 MA's), (Start: 88 @34078 has 3 MA's), (102, 33994), (116, 33946), (118, 33937), (127, 33877), (141, 33817), (153, 33760), (157, 33721), (165, 33688), (169, 33661), (170, 33652), (175, 33598), (179, 33583), (203, 33511), (208, 33481), (212, 33448), (213, 33442), (214, 33439), (283, 33247), (307, 33088), (311, 33067), (331, 32953), (344, 32893), (346, 32884), (354, 32839), (357, 32821), (361, 32788), (378, 32686), (380, 32680), (393, 32626), (398, 32599), (399, 32596), (402, 32587), (417, 32533), (432, 32470), (440, 32440), (451, 32413),

Gene: Daishi\_53 Start: 34775, Stop: 32757, Start Num: 55

Candidate Starts for Daishi\_53:

(Start: 55 @34775 has 95 MA's), (Start: 71 @34682 has 1 MA's), (Start: 73 @34673 has 3 MA's), (78, 34649), (Start: 88 @34598 has 3 MA's), (Start: 97 @34547 has 1 MA's), (116, 34466), (118, 34457), (141, 34340), (157, 34244), (169, 34184), (176, 34115), (179, 34106), (180, 34103), (182, 34094), (203, 34034), (208, 34004), (209, 34001), (210, 33989), (212, 33971), (213, 33965), (214, 33962), (235, 33857), (239, 33851), (279, 33794), (311, 33590), (313, 33575), (316, 33554), (321, 33530), (326, 33503), (329, 33488), (356, 33350), (357, 33344), (360, 33329), (363, 33302), (370, 33239), (371, 33233), (377, 33209), (402, 33104), (411, 33068), (432, 32987), (459, 32909), (465, 32873), (481, 32810),

Gene: Dalmatian\_52 Start: 36090, Stop: 34054, Start Num: 45

Candidate Starts for Dalmatian\_52:

(Start: 45 @36090 has 304 MA's), (59, 36054), (Start: 73 @35979 has 3 MA's), (74, 35976), (Start: 88 @35904 has 3 MA's), (Start: 97 @35853 has 1 MA's), (100, 35835), (110, 35799), (118, 35763), (141, 35643), (168, 35496), (169, 35487), (179, 35409), (203, 35337), (208, 35307), (209, 35304), (210, 35292), (212, 35274), (213, 35268), (214, 35265), (272, 35106), (283, 35061), (290, 35019), (311, 34881), (316, 34845), (329, 34779), (331, 34767), (344, 34707), (354, 34653), (357, 34635), (393, 34440), (402, 34401), (403, 34398), (417, 34347), (432, 34284), (447, 34236), (451, 34227), (484, 34086),

Gene: Danforth\_47 Start: 33997, Stop: 31952, Start Num: 49

Candidate Starts for Danforth\_47:

(Start: 49 @33997 has 219 MA's), (75, 33871), (87, 33814), (Start: 88 @33811 has 3 MA's), (Start: 97 @33760 has 1 MA's), (102, 33727), (116, 33679), (118, 33670), (123, 33628), (127, 33610), (147, 33532), (153, 33493), (158, 33448), (168, 33403), (169, 33394), (175, 33331), (176, 33325), (179, 33316), (203, 33244), (208, 33214), (209, 33211), (212, 33181), (213, 33175), (214, 33172), (283, 32974), (311, 32791), (316, 32755), (329, 32689), (350, 32590), (356, 32551), (363, 32503), (365, 32494), (377, 32410), (399, 32308), (428, 32203), (432, 32182), (436, 32164), (482, 31993),

Gene: Danzina\_49 Start: 32713, Stop: 34803, Start Num: 45

Candidate Starts for Danzina\_49:

(27, 32671), (30, 32677), (Start: 45 @32713 has 304 MA's), (61, 32758), (79, 32869), (82, 32890), (Start: 88 @32923 has 3 MA's), (90, 32929), (Start: 97 @32974 has 1 MA's), (116, 33055), (118, 33064), (132, 33142), (134, 33151), (141, 33184), (154, 33244), (156, 33277), (161, 33301), (169, 33343), (179, 33421), (180, 33424), (195, 33481), (203, 33511), (212, 33574), (214, 33583), (225, 33634), (242, 33703), (275, 33748), (279, 33760), (297, 33892), (307, 33949), (311, 33970), (316, 34006), (326, 34057), (334, 34093), (346, 34153), (348, 34165), (357, 34216), (358, 34222), (360, 34231), (365, 34267), (371, 34327), (378, 34354), (384, 34366), (385, 34369), (392, 34420), (394, 34426), (404, 34471), (410, 34489), (411, 34492), (421, 34525), (426, 34543), (432, 34573), (434, 34585), (443, 34612), (462, 34672), (479, 34744), (485, 34795),

Gene: Darrell\_53 Start: 36371, Stop: 34332, Start Num: 45

Candidate Starts for Darrell\_53:

(Start: 45 @36371 has 304 MA's), (Start: 71 @36266 has 1 MA's), (Start: 73 @36257 has 3 MA's), (102, 36098), (118, 36041), (127, 35981), (128, 35978), (141, 35921), (158, 35819), (169, 35765), (179, 35687), (182, 35675), (202, 35630), (203, 35621), (209, 35588), (210, 35576), (212, 35558), (213, 35552), (214, 35549), (272, 35384), (283, 35339), (311, 35159), (331, 35045), (344, 34985), (354, 34931), (357, 34913), (361, 34880), (363, 34871), (393, 34718), (399, 34688), (432, 34562),

Gene: DarthPhader\_48 Start: 36548, Stop: 34509, Start Num: 45

Candidate Starts for DarthPhader\_48:

(Start: 45 @36548 has 304 MA's), (Start: 71 @36443 has 1 MA's), (Start: 73 @36434 has 3 MA's), (Start: 97 @36308 has 1 MA's), (102, 36275), (118, 36218), (127, 36158), (141, 36098), (169, 35942), (178, 35867), (179, 35864), (185, 35843), (203, 35798), (209, 35765), (212, 35735), (213, 35729),

(214, 35726), (230, 35645), (272, 35561), (280, 35537), (283, 35516), (290, 35474), (311, 35336), (329, 35234), (333, 35216), (344, 35162), (346, 35153), (357, 35090), (361, 35057), (369, 34991), (393, 34895), (394, 34892), (410, 34823), (417, 34802), (432, 34739), (459, 34661),

Gene: Dattran\_49 Start: 32584, Stop: 34674, Start Num: 45

Candidate Starts for Dattran\_49:

(15, 32500), (Start: 45 @32584 has 304 MA's), (61, 32629), (79, 32740), (Start: 88 @32794 has 3 MA's), (90, 32800), (Start: 97 @32845 has 1 MA's), (116, 32926), (118, 32935), (132, 33013), (134, 33022), (141, 33055), (154, 33115), (156, 33148), (161, 33172), (169, 33214), (179, 33292), (180, 33295), (195, 33352), (203, 33382), (212, 33445), (214, 33454), (225, 33505), (242, 33574), (275, 33619), (279, 33631), (288, 33688), (297, 33763), (307, 33820), (311, 33841), (316, 33877), (326, 33928), (334, 33964), (346, 34024), (357, 34087), (358, 34093), (360, 34102), (365, 34138), (369, 34186), (371, 34198), (378, 34225), (384, 34237), (392, 34291), (394, 34297), (404, 34342), (410, 34360), (411, 34363), (421, 34396), (426, 34414), (432, 34444), (434, 34456), (443, 34483), (462, 34543), (479, 34615), (485, 34666),

Gene: Datway\_49 Start: 35395, Stop: 33377, Start Num: 49

Candidate Starts for Datway\_49:

(Start: 49 @35395 has 219 MA's), (Start: 73 @35284 has 3 MA's), (92, 35194), (Start: 97 @35158 has 1 MA's), (102, 35125), (116, 35077), (118, 35068), (127, 35008), (141, 34948), (169, 34792), (170, 34783), (179, 34714), (182, 34702), (201, 34651), (203, 34642), (208, 34612), (209, 34609), (212, 34579), (213, 34573), (214, 34570), (248, 34450), (270, 34426), (279, 34402), (311, 34198), (329, 34096), (333, 34078), (343, 34027), (356, 33958), (360, 33937), (363, 33910), (392, 33766), (393, 33763), (399, 33733), (411, 33688), (426, 33637), (428, 33628), (432, 33607), (465, 33493), (479, 33436),

Gene: Daubenski\_44 Start: 19923, Stop: 21866, Start Num: 64

Candidate Starts for Daubenski\_44:

(Start: 37 @19845 has 1 MA's), (Start: 64 @19923 has 64 MA's), (Start: 67 @19929 has 1 MA's), (83, 20031), (86, 20052), (90, 20061), (106, 20151), (111, 20160), (112, 20169), (114, 20172), (133, 20277), (166, 20445), (198, 20586), (217, 20697), (235, 20787), (248, 20799), (333, 21159), (364, 21315), (366, 21333), (369, 21369), (390, 21441), (438, 21651), (468, 21750), (483, 21822),

Gene: Daudau\_48 Start: 32887, Stop: 35001, Start Num: 45

Candidate Starts for Daudau\_48:

(18, 32809), (30, 32851), (Start: 45 @32887 has 304 MA's), (79, 33034), (Start: 88 @33088 has 3 MA's), (90, 33094), (116, 33220), (118, 33229), (134, 33316), (135, 33328), (141, 33349), (161, 33466), (169, 33508), (170, 33517), (179, 33586), (203, 33694), (212, 33757), (260, 33922), (279, 33958), (294, 34078), (299, 34096), (311, 34168), (316, 34204), (323, 34231), (329, 34270), (357, 34414), (360, 34429), (365, 34465), (371, 34525), (384, 34564), (388, 34582), (392, 34618), (394, 34624), (404, 34669), (411, 34690), (421, 34723), (426, 34741), (462, 34870), (478, 34939), (485, 34993),

Gene: Deano\_49 Start: 35456, Stop: 33423, Start Num: 49

Candidate Starts for Deano\_49:

(Start: 49 @35456 has 219 MA's), (68, 35393), (Start: 73 @35345 has 3 MA's), (78, 35321), (92, 35255), (Start: 97 @35219 has 1 MA's), (102, 35186), (116, 35138), (118, 35129), (127, 35072), (134, 35045), (141, 35012), (169, 34856), (170, 34847), (179, 34778), (203, 34706), (208, 34676), (209, 34673), (212, 34643), (213, 34637), (214, 34634), (232, 34547), (244, 34517), (255, 34505), (261, 34496), (279, 34448), (311, 34244), (333, 34124), (360, 33983), (363, 33956), (392, 33812), (393, 33809), (399, 33779), (417, 33716), (426, 33683), (428, 33674), (432, 33653), (447, 33605), (465, 33539),

Gene: DekHockey33\_56 Start: 35211, Stop: 33148, Start Num: 40

Candidate Starts for DekHockey33\_56:

(Start: 40 @35211 has 21 MA's), (87, 35016), (Start: 88 @35013 has 3 MA's), (116, 34881), (118, 34872), (141, 34752), (170, 34587), (174, 34548), (179, 34518), (194, 34476), (203, 34452), (208, 34422), (212, 34389), (213, 34383), (214, 34380), (270, 34206), (275, 34194), (283, 34158), (310, 33981), (311, 33978), (316, 33942), (329, 33876), (337, 33837), (339, 33825), (356, 33738), (357, 33732), (363, 33690), (411, 33459), (432, 33378), (452, 33318), (459, 33300), (479, 33207), (482, 33189),

Gene: Deloris\_52 Start: 35901, Stop: 33847, Start Num: 45

Candidate Starts for Deloris\_52:

(Start: 45 @35901 has 304 MA's), (Start: 71 @35796 has 1 MA's), (Start: 73 @35787 has 3 MA's), (74, 35784), (78, 35763), (Start: 88 @35712 has 3 MA's), (Start: 97 @35661 has 1 MA's), (118, 35571), (126, 35514), (127, 35511), (141, 35451), (169, 35295), (170, 35286), (179, 35217), (192, 35181), (203, 35151), (208, 35121), (209, 35118), (210, 35106), (212, 35088), (213, 35082), (214, 35079), (257, 34935), (272, 34899), (283, 34854), (290, 34812), (311, 34674), (316, 34638), (329, 34572), (331, 34560), (344, 34500), (354, 34446), (357, 34428), (378, 34296), (382, 34287), (388, 34266), (393, 34233), (402, 34194), (403, 34191), (410, 34161), (417, 34140), (419, 34134), (432, 34077), (447, 34029), (451, 34020),

Gene: Dexers\_46 Start: 33242, Stop: 35305, Start Num: 45

Candidate Starts for Dexers\_46:

(12, 33140), (13, 33146), (Start: 26 @33191 has 1 MA's), (Start: 45 @33242 has 304 MA's), (61, 33281), (Start: 71 @33344 has 1 MA's), (Start: 73 @33353 has 3 MA's), (81, 33404), (82, 33410), (Start: 88 @33443 has 3 MA's), (Start: 97 @33494 has 1 MA's), (118, 33584), (119, 33599), (134, 33671), (141, 33704), (161, 33821), (169, 33863), (179, 33941), (180, 33944), (184, 33965), (203, 34031), (212, 34094), (214, 34103), (270, 34244), (279, 34268), (307, 34457), (316, 34514), (340, 34637), (363, 34763), (365, 34772), (388, 34889), (389, 34901), (392, 34925), (393, 34928), (404, 34976), (421, 35030), (426, 35048), (432, 35078), (451, 35132), (462, 35174), (481, 35252),

Gene: Dhanush\_50 Start: 35451, Stop: 33418, Start Num: 49

Candidate Starts for Dhanush\_50:

(Start: 49 @35451 has 219 MA's), (68, 35388), (Start: 73 @35340 has 3 MA's), (78, 35316), (92, 35250), (Start: 97 @35214 has 1 MA's), (116, 35133), (118, 35124), (127, 35067), (134, 35040), (141, 35007), (169, 34851), (170, 34842), (179, 34773), (203, 34701), (208, 34671), (209, 34668), (212, 34638), (213, 34632), (214, 34629), (232, 34542), (244, 34512), (255, 34500), (261, 34491), (279, 34443), (311, 34239), (329, 34137), (333, 34119), (360, 33978), (363, 33951), (392, 33807), (393, 33804), (399, 33774), (417, 33711), (426, 33678), (428, 33669), (432, 33648), (447, 33600), (465, 33534),

Gene: Diane\_47 Start: 32860, Stop: 34983, Start Num: 45

Candidate Starts for Diane\_47:

(18, 32782), (30, 32824), (38, 32842), (Start: 45 @32860 has 304 MA's), (79, 33016), (82, 33037), (Start: 88 @33070 has 3 MA's), (90, 33076), (116, 33202), (118, 33211), (134, 33298), (135, 33310), (141, 33331), (157, 33427), (161, 33448), (170, 33499), (179, 33568), (203, 33676), (208, 33706), (209, 33709), (212, 33739), (260, 33904), (279, 33940), (294, 34060), (311, 34150), (316, 34186), (323, 34213), (346, 34333), (357, 34396), (360, 34411), (365, 34447), (371, 34507), (378, 34534), (384, 34546), (388, 34564), (392, 34600), (394, 34606), (404, 34651), (411, 34672), (421, 34705), (426, 34723), (432, 34753), (434, 34765), (462, 34852), (478, 34921), (481, 34930), (485, 34975),

Gene: Dieselweasel\_55 Start: 35909, Stop: 33891, Start Num: 55

Candidate Starts for Dieselweasel\_55:

(Start: 55 @35909 has 95 MA's), (Start: 71 @35816 has 1 MA's), (Start: 73 @35807 has 3 MA's), (78, 35783), (Start: 88 @35732 has 3 MA's), (Start: 97 @35681 has 1 MA's), (116, 35600), (118, 35591), (141, 35471), (154, 35411), (157, 35375), (169, 35315), (179, 35237), (203, 35165), (208, 35135), (212, 35102), (213, 35096), (214, 35093), (230, 35012), (239, 34982), (279, 34928), (304, 34757), (321, 34661), (329, 34619), (333, 34601), (343, 34553), (346, 34541), (356, 34484), (357, 34478), (360, 34463), (363, 34436), (370, 34373), (371, 34367), (377, 34343), (402, 34238), (421, 34169), (426, 34151), (428, 34142), (432, 34121), (459, 34043), (465, 34007), (481, 33944),

Gene: Dignity\_53 Start: 36269, Stop: 34230, Start Num: 45

Candidate Starts for Dignity\_53:

(Start: 45 @36269 has 304 MA's), (74, 36152), (Start: 88 @36080 has 3 MA's), (Start: 97 @36029 has 1 MA's), (100, 36011), (118, 35939), (141, 35819), (169, 35663), (179, 35585), (203, 35513), (208, 35483), (209, 35480), (210, 35468), (212, 35450), (213, 35444), (214, 35441), (272, 35282), (283, 35237), (290, 35195), (311, 35057), (316, 35021), (329, 34955), (331, 34943), (344, 34883), (354, 34829), (357, 34811), (393, 34616), (402, 34577), (403, 34574), (417, 34523), (432, 34460), (447, 34412), (451, 34403), (484, 34262),

Gene: Dinger\_40 Start: 31943, Stop: 29898, Start Num: 45

Candidate Starts for Dinger\_40:

(Start: 45 @31943 has 304 MA's), (74, 31823), (85, 31760), (87, 31754), (Start: 97 @31700 has 1 MA's), (116, 31619), (118, 31610), (154, 31430), (156, 31397), (157, 31394), (159, 31385), (164, 31364), (169, 31334), (175, 31271), (179, 31256), (181, 31250), (203, 31190), (209, 31157), (212, 31127), (213, 31121), (214, 31118), (252, 30983), (301, 30788), (304, 30770), (328, 30638), (354, 30506), (363, 30446), (372, 30374), (385, 30335), (387, 30332), (388, 30320), (393, 30287), (402, 30248), (421, 30176), (428, 30149), (465, 30014),

Gene: DirtyDunning\_49 Start: 35460, Stop: 33430, Start Num: 49

Candidate Starts for DirtyDunning\_49:

(Start: 49 @35460 has 219 MA's), (92, 35259), (Start: 97 @35223 has 1 MA's), (102, 35190), (116, 35142), (118, 35133), (127, 35076), (141, 35016), (158, 34914), (169, 34860), (170, 34851), (179, 34782), (182, 34770), (202, 34719), (203, 34710), (208, 34680), (209, 34677), (212, 34647), (213, 34641), (214, 34638), (221, 34605), (279, 34455), (311, 34251), (329, 34149), (333, 34131), (356, 34011), (360, 33990), (363, 33963), (392, 33819), (393, 33816), (399, 33786), (411, 33741), (421, 33708), (426, 33690), (428, 33681), (432, 33660), (465, 33546), (479, 33489),

Gene: Discoknowium\_42 Start: 34249, Stop: 32120, Start Num: 49

Candidate Starts for Discoknowium\_42:

(Start: 49 @34249 has 219 MA's), (Start: 88 @34063 has 3 MA's), (Start: 97 @34012 has 1 MA's), (116, 33931), (118, 33922), (141, 33802), (146, 33787), (164, 33676), (165, 33673), (169, 33646), (170, 33637), (176, 33577), (179, 33568), (184, 33544), (203, 33457), (208, 33427), (209, 33424), (212, 33394), (213, 33388), (214, 33385), (239, 33274), (283, 33133), (308, 32971), (313, 32938), (322, 32890), (329, 32851), (343, 32782), (354, 32725), (356, 32713), (357, 32707), (363, 32665), (365, 32656), (372, 32593), (394, 32503), (399, 32476), (410, 32434), (421, 32398), (426, 32380), (428, 32371), (482, 32161),

Gene: Dixon\_47 Start: 33870, Stop: 31825, Start Num: 49

Candidate Starts for Dixon\_47:

(Start: 49 @33870 has 219 MA's), (75, 33744), (87, 33687), (Start: 88 @33684 has 3 MA's), (Start: 97 @33633 has 1 MA's), (102, 33600), (116, 33552), (118, 33543), (123, 33501), (147, 33405), (153, 33366), (158, 33321), (168, 33276), (169, 33267), (175, 33204), (176, 33198), (179, 33189), (180, 33186), (203, 33117), (208, 33087), (209, 33084), (212, 33054), (213, 33048), (214, 33045), (283, 32847), (311, 32664), (316, 32628), (329, 32562), (350, 32463), (356, 32424), (363, 32376), (365, 32367), (377, 32283), (399, 32181), (411, 32136), (428, 32076), (432, 32055), (436, 32037), (482,

31866),

Gene: DontArgue\_48 Start: 34338, Stop: 32290, Start Num: 34

Candidate Starts for DontArgue\_48:

(Start: 34 @34338 has 17 MA's), (78, 34203), (102, 34068), (116, 34020), (118, 34011), (141, 33894), (169, 33738), (170, 33729), (179, 33660), (182, 33648), (193, 33618), (203, 33588), (208, 33558), (212, 33525), (213, 33519), (214, 33516), (230, 33435), (279, 33315), (280, 33312), (311, 33111), (333, 32991), (343, 32940), (356, 32871), (357, 32865), (363, 32823), (365, 32814), (371, 32754), (388, 32709), (392, 32679), (393, 32676), (394, 32673), (403, 32634), (411, 32601), (432, 32520), (465, 32406), (479, 32349),

Gene: Dorin\_38 Start: 16985, Stop: 18946, Start Num: 63

Candidate Starts for Dorin\_38:

(61, 16979), (Start: 63 @16985 has 2 MA's), (Start: 64 @16988 has 64 MA's), (90, 17117), (102, 17189), (106, 17207), (111, 17216), (112, 17225), (114, 17228), (133, 17333), (155, 17447), (160, 17483), (169, 17516), (183, 17609), (198, 17642), (206, 17669), (207, 17687), (209, 17693), (211, 17720), (217, 17753), (248, 17855), (282, 17912), (293, 17999), (303, 18056), (307, 18077), (324, 18173), (327, 18188), (329, 18197), (336, 18233), (364, 18371), (381, 18461), (386, 18470), (431, 18671), (445, 18722), (466, 18791), (468, 18803), (473, 18824), (483, 18875), (486, 18905),

Gene: Dorothea\_53 Start: 34833, Stop: 32809, Start Num: 45

Candidate Starts for Dorothea\_53:

(32, 34866), (Start: 45 @34833 has 304 MA's), (Start: 88 @34647 has 3 MA's), (102, 34563), (116, 34515), (118, 34506), (127, 34446), (141, 34386), (153, 34329), (157, 34290), (165, 34257), (169, 34230), (170, 34221), (175, 34167), (179, 34152), (203, 34080), (208, 34050), (212, 34017), (213, 34011), (214, 34008), (283, 33816), (307, 33657), (311, 33636), (331, 33522), (344, 33462), (346, 33453), (354, 33408), (357, 33390), (361, 33357), (378, 33255), (380, 33249), (393, 33195), (398, 33168), (399, 33165), (402, 33156), (417, 33102), (432, 33039), (440, 33009), (451, 32982),

Gene: Drake55\_53 Start: 36169, Stop: 34133, Start Num: 45

Candidate Starts for Drake55\_53:

(Start: 45 @36169 has 304 MA's), (61, 36130), (Start: 73 @36058 has 3 MA's), (Start: 88 @35983 has 3 MA's), (Start: 97 @35932 has 1 MA's), (102, 35899), (118, 35842), (127, 35782), (134, 35755), (141, 35722), (169, 35566), (179, 35488), (182, 35476), (198, 35434), (203, 35416), (208, 35386), (209, 35383), (210, 35371), (212, 35353), (213, 35347), (214, 35344), (272, 35185), (283, 35140), (290, 35098), (311, 34960), (316, 34924), (329, 34858), (331, 34846), (344, 34786), (354, 34732), (357, 34714), (365, 34663), (377, 34582), (380, 34573), (393, 34519), (399, 34489), (402, 34480), (417, 34426), (432, 34363), (447, 34315), (451, 34306),

Gene: Drake94\_47 Start: 34399, Stop: 32360, Start Num: 34

Candidate Starts for Drake94\_47:

(Start: 34 @34399 has 17 MA's), (78, 34264), (Start: 97 @34162 has 1 MA's), (102, 34129), (116, 34081), (118, 34072), (127, 34015), (141, 33955), (146, 33940), (169, 33799), (179, 33721), (182, 33709), (203, 33649), (208, 33619), (212, 33586), (213, 33580), (214, 33577), (221, 33544), (270, 33409), (279, 33385), (311, 33181), (329, 33079), (333, 33061), (343, 33010), (356, 32941), (357, 32935), (363, 32893), (365, 32884), (371, 32824), (392, 32749), (393, 32746), (394, 32743), (403, 32704), (417, 32653), (419, 32647), (432, 32590), (465, 32476), (479, 32419),

Gene: DreamTeam1\_50 Start: 35411, Stop: 33372, Start Num: 45

Candidate Starts for DreamTeam1\_50:

(12, 35519), (Start: 45 @35411 has 304 MA's), (Start: 97 @35171 has 1 MA's), (118, 35081), (119, 35066), (123, 35039), (127, 35021), (128, 35018), (134, 34994), (141, 34961), (169, 34805), (179, 34727), (182, 34715), (203, 34661), (210, 34616), (212, 34598), (213, 34592), (214, 34589), (270,

34427), (272, 34424), (283, 34379), (293, 34304), (301, 34253), (311, 34199), (329, 34097), (344, 34025), (346, 34016), (354, 33971), (357, 33953), (363, 33911), (393, 33758), (411, 33683), (432, 33602), (447, 33554),

Gene: DroogsArmy\_46 Start: 36386, Stop: 34353, Start Num: 49

Candidate Starts for DroogsArmy\_46:

(Start: 49 @36386 has 219 MA's), (Start: 88 @36200 has 3 MA's), (102, 36116), (118, 36059), (141, 35942), (153, 35885), (165, 35813), (169, 35786), (170, 35777), (179, 35708), (180, 35705), (182, 35696), (203, 35636), (208, 35606), (209, 35603), (212, 35573), (213, 35567), (214, 35564), (232, 35477), (279, 35390), (311, 35186), (316, 35150), (322, 35123), (326, 35099), (328, 35090), (333, 35066), (344, 35012), (346, 35003), (360, 34925), (365, 34889), (388, 34772), (393, 34739), (399, 34709), (417, 34646), (429, 34601), (453, 34520), (455, 34517), (465, 34469), (479, 34412), (482, 34394),

Gene: DropBear\_51 Start: 35641, Stop: 33617, Start Num: 49

Candidate Starts for DropBear\_51:

(Start: 49 @35641 has 219 MA's), (74, 35527), (92, 35440), (Start: 97 @35404 has 1 MA's), (102, 35371), (116, 35323), (118, 35314), (141, 35194), (165, 35065), (169, 35038), (170, 35029), (179, 34960), (185, 34939), (187, 34936), (203, 34894), (208, 34864), (210, 34849), (212, 34831), (213, 34825), (214, 34822), (235, 34717), (239, 34711), (279, 34654), (286, 34615), (311, 34450), (316, 34414), (321, 34390), (329, 34348), (333, 34330), (356, 34210), (357, 34204), (360, 34189), (363, 34162), (389, 34024), (403, 33961), (428, 33868), (432, 33847), (460, 33766), (465, 33733),

Gene: Druantia\_50 Start: 35451, Stop: 33418, Start Num: 49

Candidate Starts for Druantia\_50:

(Start: 49 @35451 has 219 MA's), (68, 35388), (Start: 73 @35340 has 3 MA's), (78, 35316), (92, 35250), (Start: 97 @35214 has 1 MA's), (102, 35181), (116, 35133), (118, 35124), (127, 35067), (134, 35040), (141, 35007), (169, 34851), (170, 34842), (179, 34773), (203, 34701), (208, 34671), (209, 34668), (212, 34638), (213, 34632), (214, 34629), (232, 34542), (241, 34518), (244, 34512), (255, 34500), (261, 34491), (279, 34443), (310, 34242), (311, 34239), (329, 34137), (333, 34119), (360, 33978), (363, 33951), (392, 33807), (393, 33804), (399, 33774), (417, 33711), (426, 33678), (428, 33669), (432, 33648), (447, 33600), (465, 33534),

Gene: Dublin\_42 Start: 34245, Stop: 32155, Start Num: 49

Candidate Starts for Dublin\_42:

(Start: 49 @34245 has 219 MA's), (74, 34131), (Start: 88 @34059 has 3 MA's), (100, 33990), (116, 33927), (118, 33918), (141, 33798), (146, 33783), (164, 33672), (168, 33651), (169, 33642), (170, 33633), (179, 33564), (182, 33552), (200, 33471), (203, 33453), (208, 33423), (209, 33420), (212, 33390), (213, 33384), (214, 33381), (239, 33270), (283, 33168), (286, 33153), (308, 33006), (313, 32973), (322, 32925), (329, 32886), (343, 32817), (354, 32760), (356, 32748), (357, 32742), (363, 32700), (365, 32691), (392, 32544), (399, 32511), (410, 32469), (421, 32433), (426, 32415), (428, 32406), (432, 32385), (482, 32196),

Gene: DudeLittle\_50 Start: 35856, Stop: 33796, Start Num: 45

Candidate Starts for DudeLittle\_50:

(Start: 45 @35856 has 304 MA's), (59, 35820), (Start: 73 @35745 has 3 MA's), (74, 35742), (Start: 88 @35670 has 3 MA's), (Start: 97 @35619 has 1 MA's), (100, 35601), (110, 35565), (118, 35529), (141, 35409), (168, 35262), (169, 35253), (179, 35175), (203, 35103), (208, 35073), (209, 35070), (210, 35058), (212, 35040), (213, 35034), (214, 35031), (240, 34920), (272, 34848), (283, 34803), (290, 34761), (311, 34623), (316, 34587), (329, 34521), (344, 34449), (354, 34395), (357, 34377), (393, 34182), (402, 34143), (403, 34140), (417, 34089), (432, 34026), (447, 33978), (451, 33969), (484, 33828),

Gene: Duplo\_53 Start: 35599, Stop: 33518, Start Num: 49

Candidate Starts for Duplo\_53:

(Start: 49 @35599 has 219 MA's), (Start: 71 @35494 has 1 MA's), (Start: 73 @35485 has 3 MA's), (Start: 88 @35410 has 3 MA's), (102, 35326), (116, 35278), (118, 35269), (127, 35209), (147, 35131), (153, 35092), (169, 34993), (175, 34930), (179, 34915), (203, 34819), (208, 34789), (209, 34786), (212, 34756), (213, 34750), (214, 34747), (232, 34660), (266, 34600), (270, 34585), (283, 34537), (311, 34357), (329, 34255), (331, 34243), (344, 34183), (346, 34174), (354, 34129), (356, 34117), (360, 34096), (363, 34069), (371, 34000), (393, 33904), (398, 33877), (402, 33865), (411, 33829), (432, 33748), (444, 33706),

Gene: DustyMartin\_53 Start: 35260, Stop: 33179, Start Num: 34

Candidate Starts for DustyMartin\_53:

(Start: 34 @35260 has 17 MA's), (44, 35239), (Start: 73 @35119 has 3 MA's), (74, 35116), (78, 35095), (Start: 97 @34993 has 1 MA's), (102, 34960), (116, 34912), (118, 34903), (127, 34846), (141, 34786), (146, 34771), (157, 34690), (169, 34630), (179, 34552), (182, 34540), (202, 34489), (203, 34480), (208, 34450), (212, 34417), (213, 34411), (214, 34408), (266, 34243), (272, 34225), (283, 34180), (290, 34138), (311, 34000), (329, 33898), (333, 33880), (343, 33829), (356, 33760), (357, 33754), (360, 33739), (363, 33712), (365, 33703), (371, 33643), (392, 33568), (393, 33565), (394, 33562), (403, 33523), (417, 33472), (419, 33466), (432, 33409), (465, 33295), (479, 33238),

Gene: Dwayne\_47 Start: 31992, Stop: 34082, Start Num: 45

Candidate Starts for Dwayne\_47:

(15, 31911), (Start: 45 @31992 has 304 MA's), (61, 32037), (79, 32148), (82, 32169), (Start: 88 @32202 has 3 MA's), (90, 32208), (Start: 97 @32253 has 1 MA's), (116, 32334), (118, 32343), (132, 32421), (141, 32463), (154, 32523), (156, 32556), (161, 32580), (169, 32622), (179, 32700), (180, 32703), (195, 32760), (203, 32790), (212, 32853), (214, 32862), (225, 32913), (242, 32982), (275, 33027), (279, 33039), (297, 33171), (311, 33249), (313, 33264), (316, 33285), (326, 33336), (357, 33495), (358, 33501), (360, 33510), (365, 33546), (371, 33606), (378, 33633), (384, 33645), (385, 33648), (392, 33699), (394, 33705), (411, 33771), (421, 33804), (426, 33822), (432, 33852), (434, 33864), (443, 33891), (462, 33951), (479, 34023),

Gene: EGole\_44 Start: 20538, Stop: 22481, Start Num: 64

Candidate Starts for EGole\_44:

(Start: 64 @20538 has 64 MA's), (Start: 67 @20544 has 1 MA's), (83, 20646), (86, 20667), (90, 20676), (106, 20766), (111, 20775), (112, 20784), (114, 20787), (133, 20892), (217, 21312), (235, 21402), (248, 21414), (306, 21627), (333, 21774), (336, 21792), (366, 21948), (390, 22056), (430, 22227), (438, 22266), (468, 22365),

Gene: ELB20\_47 Start: 33380, Stop: 35494, Start Num: 45

Candidate Starts for ELB20\_47:

(Start: 45 @33380 has 304 MA's), (Start: 88 @33581 has 3 MA's), (Start: 97 @33632 has 1 MA's), (116, 33713), (118, 33722), (133, 33806), (134, 33809), (135, 33821), (141, 33842), (161, 33959), (165, 33974), (169, 34001), (179, 34079), (203, 34187), (208, 34217), (209, 34220), (212, 34250), (269, 34424), (279, 34451), (288, 34508), (290, 34517), (294, 34571), (297, 34583), (302, 34610), (311, 34661), (316, 34697), (323, 34724), (325, 34742), (329, 34763), (357, 34907), (358, 34913), (360, 34922), (365, 34958), (371, 35018), (375, 35036), (379, 35048), (394, 35117), (404, 35162), (411, 35183), (421, 35216), (426, 35234), (434, 35276), (462, 35363), (478, 35432), (485, 35486),

Gene: EZMoney23\_49 Start: 35614, Stop: 33581, Start Num: 45

Candidate Starts for EZMoney23\_49:

(Start: 45 @35614 has 304 MA's), (Start: 73 @35503 has 3 MA's), (Start: 88 @35428 has 3 MA's), (Start: 97 @35377 has 1 MA's), (116, 35296), (118, 35287), (127, 35227), (141, 35167), (169, 35011), (170, 35002), (179, 34933), (203, 34861), (208, 34831), (209, 34828), (212, 34798), (213, 34792),



(214, 34789), (272, 34633), (283, 34588), (311, 34408), (316, 34372), (329, 34306), (331, 34294), (344, 34234), (357, 34162), (377, 34030), (380, 34021), (393, 33967), (402, 33928), (417, 33874), (419, 33868), (432, 33811), (447, 33763), (451, 33754),

Gene: Eagle\_50 Start: 35473, Stop: 33440, Start Num: 49

Candidate Starts for Eagle\_50:

(Start: 49 @35473 has 219 MA's), (68, 35410), (Start: 73 @35362 has 3 MA's), (78, 35338), (92, 35272), (Start: 97 @35236 has 1 MA's), (102, 35203), (116, 35155), (118, 35146), (127, 35089), (134, 35062), (141, 35029), (169, 34873), (170, 34864), (179, 34795), (203, 34723), (208, 34693), (209, 34690), (212, 34660), (213, 34654), (214, 34651), (232, 34564), (244, 34534), (255, 34522), (261, 34513), (279, 34465), (311, 34261), (329, 34159), (333, 34141), (360, 34000), (363, 33973), (392, 33829), (393, 33826), (399, 33796), (417, 33733), (426, 33700), (428, 33691), (432, 33670), (447, 33622), (465, 33556),

Gene: EagleEye\_53 Start: 35340, Stop: 33298, Start Num: 45

Candidate Starts for EagleEye\_53:

(Start: 45 @35340 has 304 MA's), (87, 35157), (116, 35022), (118, 35013), (119, 34998), (127, 34953), (128, 34950), (141, 34893), (169, 34737), (179, 34659), (203, 34593), (208, 34563), (209, 34560), (212, 34530), (213, 34524), (214, 34521), (252, 34398), (270, 34356), (283, 34308), (286, 34293), (290, 34266), (311, 34128), (316, 34092), (321, 34068), (331, 34014), (343, 33957), (344, 33954), (346, 33945), (354, 33900), (357, 33882), (361, 33849), (363, 33840), (393, 33687), (399, 33657), (417, 33591), (432, 33528),

Gene: Eaglepride\_50 Start: 35243, Stop: 33159, Start Num: 34

Candidate Starts for Eaglepride\_50:

(9, 35339), (Start: 34 @35243 has 17 MA's), (39, 35231), (68, 35144), (Start: 73 @35096 has 3 MA's), (78, 35072), (Start: 97 @34970 has 1 MA's), (102, 34937), (116, 34889), (118, 34880), (127, 34823), (141, 34763), (146, 34748), (157, 34667), (169, 34607), (170, 34598), (179, 34529), (182, 34517), (203, 34457), (208, 34427), (212, 34394), (213, 34388), (214, 34385), (221, 34352), (272, 34205), (283, 34160), (311, 33980), (329, 33878), (333, 33860), (343, 33809), (356, 33740), (357, 33734), (360, 33719), (363, 33692), (365, 33683), (371, 33623), (392, 33548), (393, 33545), (394, 33542), (403, 33503), (417, 33452), (419, 33446), (432, 33389), (479, 33218),

Gene: Eapen\_50 Start: 35443, Stop: 33410, Start Num: 49

Candidate Starts for Eapen\_50:

(Start: 49 @35443 has 219 MA's), (68, 35380), (Start: 73 @35332 has 3 MA's), (78, 35308), (92, 35242), (Start: 97 @35206 has 1 MA's), (102, 35173), (116, 35125), (118, 35116), (127, 35059), (134, 35032), (141, 34999), (169, 34843), (170, 34834), (179, 34765), (203, 34693), (208, 34663), (209, 34660), (212, 34630), (213, 34624), (214, 34621), (232, 34534), (244, 34504), (255, 34492), (261, 34483), (279, 34435), (311, 34231), (329, 34129), (333, 34111), (360, 33970), (363, 33943), (392, 33799), (393, 33796), (399, 33766), (417, 33703), (426, 33670), (428, 33661), (432, 33640), (447, 33592), (465, 33526),

Gene: Ebony\_51 Start: 34695, Stop: 32857, Start Num: 88

Candidate Starts for Ebony\_51:

(28, 34929), (41, 34896), (Start: 50 @34878 has 19 MA's), (Start: 73 @34770 has 3 MA's), (Start: 88 @34695 has 3 MA's), (116, 34563), (118, 34554), (141, 34434), (169, 34278), (174, 34230), (178, 34203), (179, 34200), (182, 34188), (197, 34155), (203, 34134), (210, 34089), (212, 34071), (213, 34065), (214, 34062), (250, 33942), (283, 33867), (286, 33852), (311, 33687), (321, 33627), (329, 33585), (333, 33567), (347, 33495), (357, 33441), (360, 33426), (361, 33408), (377, 33309), (393, 33246), (402, 33207), (426, 33117), (432, 33087), (447, 33039),

Gene: Echild\_51 Start: 35166, Stop: 33127, Start Num: 45

Candidate Starts for Echild\_51:

(6, 35307), (7, 35301), (Start: 45 @35166 has 304 MA's), (Start: 71 @35061 has 1 MA's), (Start: 73 @35052 has 3 MA's), (74, 35049), (78, 35028), (Start: 97 @34926 has 1 MA's), (118, 34836), (119, 34821), (141, 34716), (169, 34560), (179, 34482), (203, 34410), (208, 34380), (209, 34377), (210, 34365), (212, 34347), (213, 34341), (214, 34338), (272, 34179), (283, 34134), (290, 34092), (311, 33954), (316, 33918), (329, 33852), (331, 33840), (344, 33780), (354, 33726), (357, 33708), (393, 33513), (402, 33474), (403, 33471), (417, 33420), (419, 33414), (432, 33357), (447, 33309), (451, 33300),

Gene: Eddasa\_48 Start: 31960, Stop: 34050, Start Num: 45

Candidate Starts for Eddasa\_48:

(14, 31876), (16, 31882), (27, 31918), (30, 31924), (Start: 45 @31960 has 304 MA's), (78, 32101), (79, 32116), (82, 32137), (Start: 88 @32170 has 3 MA's), (90, 32176), (Start: 97 @32221 has 1 MA's), (116, 32302), (118, 32311), (132, 32389), (134, 32398), (141, 32431), (156, 32524), (161, 32548), (169, 32590), (179, 32668), (180, 32671), (203, 32758), (212, 32821), (214, 32830), (275, 32995), (279, 33007), (302, 33166), (311, 33217), (313, 33232), (316, 33253), (329, 33319), (357, 33463), (358, 33469), (360, 33478), (365, 33514), (369, 33562), (371, 33574), (378, 33601), (384, 33613), (392, 33667), (404, 33718), (411, 33739), (421, 33772), (426, 33790), (432, 33820), (434, 33832), (443, 33859), (462, 33919), (478, 33988), (479, 33991), (485, 34042),

Gene: Edison31\_48 Start: 35191, Stop: 33116, Start Num: 34

Candidate Starts for Edison31\_48:

(Start: 34 @35191 has 17 MA's), (Start: 73 @35050 has 3 MA's), (74, 35047), (78, 35026), (Start: 97 @34924 has 1 MA's), (102, 34891), (116, 34843), (118, 34834), (127, 34777), (141, 34717), (146, 34702), (169, 34561), (179, 34483), (182, 34471), (202, 34420), (203, 34411), (208, 34381), (212, 34348), (213, 34342), (214, 34339), (232, 34252), (280, 34138), (283, 34117), (290, 34075), (311, 33937), (329, 33835), (333, 33817), (343, 33766), (356, 33697), (357, 33691), (360, 33676), (363, 33649), (371, 33580), (392, 33505), (393, 33502), (394, 33499), (403, 33460), (417, 33409), (419, 33403), (432, 33346), (465, 33232), (479, 33175),

Gene: EdogawaKiddo\_49 Start: 35719, Stop: 33680, Start Num: 45

Candidate Starts for EdogawaKiddo\_49:

(Start: 45 @35719 has 304 MA's), (Start: 73 @35605 has 3 MA's), (75, 35590), (78, 35581), (118, 35389), (127, 35329), (128, 35326), (141, 35269), (168, 35122), (169, 35113), (179, 35035), (182, 35023), (203, 34969), (208, 34939), (210, 34924), (212, 34906), (213, 34900), (214, 34897), (272, 34732), (283, 34687), (311, 34507), (329, 34405), (344, 34333), (361, 34228), (363, 34219), (393, 34066), (399, 34036), (417, 33973), (421, 33958), (432, 33910),

Gene: Eidsmoe\_51 Start: 35734, Stop: 33695, Start Num: 45

Candidate Starts for Eidsmoe\_51:

(Start: 45 @35734 has 304 MA's), (Start: 73 @35620 has 3 MA's), (75, 35605), (78, 35596), (Start: 97 @35494 has 1 MA's), (118, 35404), (127, 35344), (141, 35284), (168, 35137), (169, 35128), (179, 35050), (182, 35038), (202, 34993), (203, 34984), (208, 34954), (210, 34939), (212, 34921), (213, 34915), (214, 34912), (272, 34747), (280, 34723), (283, 34702), (311, 34522), (331, 34408), (344, 34348), (361, 34243), (363, 34234), (393, 34081), (399, 34051), (417, 33988), (432, 33925),

Gene: Ejemplo\_46 Start: 31944, Stop: 34034, Start Num: 45

Candidate Starts for Ejemplo\_46:

(27, 31902), (30, 31908), (Start: 45 @31944 has 304 MA's), (Start: 73 @32061 has 3 MA's), (79, 32100), (82, 32121), (Start: 88 @32154 has 3 MA's), (Start: 97 @32205 has 1 MA's), (116, 32286), (118, 32295), (132, 32373), (141, 32415), (154, 32475), (156, 32508), (161, 32532), (169, 32574), (179, 32652), (180, 32655), (195, 32712), (203, 32742), (212, 32805), (214, 32814), (225, 32865), (242, 32934), (275, 32979), (279, 32991), (297, 33123), (311, 33201), (313, 33216), (316, 33237),

(357, 33447), (358, 33453), (360, 33462), (365, 33498), (371, 33558), (378, 33585), (384, 33597), (385, 33600), (392, 33651), (394, 33657), (411, 33723), (421, 33756), (426, 33774), (432, 33804), (434, 33816), (443, 33843), (462, 33903), (479, 33975),

Gene: ElGato\_48 Start: 32882, Stop: 34945, Start Num: 45

Candidate Starts for ElGato\_48:

(12, 32780), (13, 32786), (Start: 26 @32831 has 1 MA's), (Start: 45 @32882 has 304 MA's), (61, 32921), (Start: 71 @32984 has 1 MA's), (Start: 73 @32993 has 3 MA's), (81, 33044), (82, 33050), (Start: 88 @33083 has 3 MA's), (Start: 97 @33134 has 1 MA's), (118, 33224), (119, 33239), (134, 33311), (141, 33344), (161, 33461), (169, 33503), (170, 33512), (179, 33581), (180, 33584), (184, 33605), (203, 33671), (212, 33734), (214, 33743), (270, 33884), (279, 33908), (307, 34097), (316, 34154), (340, 34277), (363, 34403), (365, 34412), (388, 34529), (389, 34541), (392, 34565), (393, 34568), (404, 34616), (421, 34670), (426, 34688), (432, 34718), (451, 34772), (462, 34814), (481, 34892), (485, 34937),

Gene: ElTiger69\_45 Start: 34331, Stop: 32295, Start Num: 49

Candidate Starts for ElTiger69\_45:

(Start: 49 @34331 has 219 MA's), (Start: 88 @34148 has 3 MA's), (Start: 97 @34097 has 1 MA's), (102, 34064), (116, 34016), (118, 34007), (123, 33965), (147, 33869), (153, 33830), (158, 33785), (168, 33740), (169, 33731), (175, 33668), (176, 33662), (179, 33653), (203, 33581), (208, 33551), (210, 33536), (212, 33518), (213, 33512), (214, 33509), (283, 33308), (290, 33266), (308, 33146), (313, 33113), (322, 33065), (329, 33026), (343, 32957), (354, 32900), (356, 32888), (357, 32882), (363, 32840), (365, 32831), (372, 32768), (394, 32678), (399, 32651), (410, 32609), (421, 32573), (426, 32555), (428, 32546), (482, 32336),

Gene: Elephantoon\_50 Start: 35116, Stop: 33077, Start Num: 45

Candidate Starts for Elephantoon\_50:

(Start: 45 @35116 has 304 MA's), (Start: 73 @35002 has 3 MA's), (75, 34987), (78, 34978), (102, 34843), (118, 34786), (127, 34726), (128, 34723), (141, 34666), (169, 34510), (179, 34432), (182, 34420), (203, 34366), (208, 34336), (210, 34321), (212, 34303), (213, 34297), (214, 34294), (272, 34129), (283, 34084), (301, 33958), (311, 33904), (316, 33868), (344, 33730), (361, 33625), (363, 33616), (393, 33463), (402, 33424), (417, 33370), (432, 33307),

Gene: Elmer\_47 Start: 20431, Stop: 22374, Start Num: 64

Candidate Starts for Elmer\_47:

(Start: 53 @20389 has 2 MA's), (57, 20401), (58, 20407), (Start: 64 @20431 has 64 MA's), (66, 20434), (90, 20566), (102, 20638), (111, 20665), (114, 20677), (133, 20782), (148, 20839), (151, 20872), (217, 21202), (228, 21253), (235, 21292), (248, 21304), (297, 21481), (306, 21517), (333, 21664), (366, 21838), (369, 21874), (389, 21943), (390, 21946), (412, 22048), (427, 22099), (430, 22117), (431, 22123), (438, 22156), (468, 22255),

Gene: Emaanora\_50 Start: 31950, Stop: 34040, Start Num: 45

Candidate Starts for Emaanora\_50:

(15, 31869), (Start: 45 @31950 has 304 MA's), (61, 31995), (79, 32106), (82, 32127), (Start: 88 @32160 has 3 MA's), (90, 32166), (Start: 97 @32211 has 1 MA's), (116, 32292), (118, 32301), (132, 32379), (141, 32421), (154, 32481), (156, 32514), (161, 32538), (169, 32580), (179, 32658), (180, 32661), (195, 32718), (203, 32748), (212, 32811), (214, 32820), (225, 32871), (242, 32940), (275, 32985), (279, 32997), (297, 33129), (311, 33207), (313, 33222), (316, 33243), (326, 33294), (357, 33453), (358, 33459), (360, 33468), (365, 33504), (371, 33564), (378, 33591), (384, 33603), (385, 33606), (392, 33657), (394, 33663), (411, 33729), (421, 33762), (426, 33780), (432, 33810), (434, 33822), (443, 33849), (462, 33909), (479, 33981),

Gene: Emma1919\_24 Start: 8716, Stop: 10659, Start Num: 65

Candidate Starts for Emma1919\_24:

(62, 8707), (Start: 65 @8716 has 26 MA's), (Start: 73 @8773 has 3 MA's), (90, 8854), (111, 8953), (112, 8962), (114, 8965), (133, 9070), (163, 9220), (169, 9250), (198, 9376), (244, 9583), (304, 9796), (314, 9850), (327, 9922), (332, 9946), (351, 10018), (389, 10228), (390, 10231), (409, 10327), (413, 10336), (473, 10564),

Gene: EmyBug\_50 Start: 35736, Stop: 33697, Start Num: 45

Candidate Starts for EmyBug\_50:

(Start: 45 @35736 has 304 MA's), (Start: 73 @35622 has 3 MA's), (75, 35607), (78, 35598), (Start: 97 @35496 has 1 MA's), (118, 35406), (127, 35346), (141, 35286), (168, 35139), (169, 35130), (179, 35052), (182, 35040), (202, 34995), (203, 34986), (208, 34956), (210, 34941), (212, 34923), (213, 34917), (214, 34914), (272, 34749), (280, 34725), (283, 34704), (311, 34524), (331, 34410), (344, 34350), (361, 34245), (363, 34236), (393, 34083), (399, 34053), (417, 33990), (432, 33927),

Gene: EnochSoames\_50 Start: 31955, Stop: 34045, Start Num: 45

Candidate Starts for EnochSoames\_50:

(14, 31871), (16, 31877), (27, 31913), (30, 31919), (Start: 45 @31955 has 304 MA's), (79, 32111), (82, 32132), (Start: 88 @32165 has 3 MA's), (90, 32171), (Start: 97 @32216 has 1 MA's), (116, 32297), (118, 32306), (132, 32384), (134, 32393), (141, 32426), (156, 32519), (161, 32543), (169, 32585), (179, 32663), (180, 32666), (203, 32753), (212, 32816), (214, 32825), (270, 32978), (275, 32990), (279, 33002), (302, 33161), (311, 33212), (313, 33227), (316, 33248), (329, 33314), (357, 33458), (358, 33464), (360, 33473), (365, 33509), (371, 33569), (378, 33596), (384, 33608), (393, 33665), (394, 33668), (404, 33713), (411, 33734), (421, 33767), (426, 33785), (432, 33815), (434, 33827), (443, 33854), (462, 33914), (478, 33983), (479, 33986), (485, 34037),

Gene: Enyigma\_42 Start: 18933, Stop: 20873, Start Num: 64

Candidate Starts for Enyigma\_42:

(Start: 64 @18933 has 64 MA's), (90, 19065), (96, 19101), (102, 19137), (111, 19164), (114, 19176), (133, 19281), (216, 19695), (217, 19701), (228, 19752), (235, 19791), (248, 19803), (285, 19881), (297, 19980), (306, 20016), (333, 20163), (366, 20337), (369, 20373), (389, 20442), (390, 20445), (430, 20616), (468, 20754),

Gene: EpicPhail\_55 Start: 35910, Stop: 33892, Start Num: 55

Candidate Starts for EpicPhail\_55:

(Start: 55 @35910 has 95 MA's), (Start: 71 @35817 has 1 MA's), (Start: 73 @35808 has 3 MA's), (78, 35784), (Start: 88 @35733 has 3 MA's), (Start: 97 @35682 has 1 MA's), (116, 35601), (118, 35592), (141, 35472), (154, 35412), (157, 35376), (169, 35316), (179, 35238), (203, 35166), (208, 35136), (212, 35103), (213, 35097), (214, 35094), (230, 35013), (239, 34983), (279, 34929), (304, 34758), (321, 34662), (329, 34620), (333, 34602), (343, 34554), (346, 34542), (356, 34485), (357, 34479), (360, 34464), (363, 34437), (370, 34374), (371, 34368), (377, 34344), (402, 34239), (421, 34170), (426, 34152), (428, 34143), (432, 34122), (459, 34044), (465, 34008), (481, 33945),

Gene: Epsocamisio\_54 Start: 34454, Stop: 32391, Start Num: 40

Candidate Starts for Epsocamisio\_54:

(Start: 40 @34454 has 21 MA's), (87, 34259), (Start: 88 @34256 has 3 MA's), (116, 34124), (118, 34115), (141, 33995), (170, 33830), (174, 33791), (179, 33761), (194, 33719), (203, 33695), (208, 33665), (212, 33632), (213, 33626), (214, 33623), (270, 33449), (275, 33437), (283, 33401), (310, 33224), (311, 33221), (316, 33185), (329, 33119), (337, 33080), (339, 33068), (356, 32981), (357, 32975), (363, 32933), (411, 32702), (432, 32621), (452, 32561), (459, 32543), (479, 32450), (482, 32432),

Gene: Equemioh13\_52 Start: 35992, Stop: 33956, Start Num: 45

Candidate Starts for Equemioh13\_52:

(Start: 45 @35992 has 304 MA's), (61, 35953), (Start: 73 @35881 has 3 MA's), (Start: 88 @35806 has 3 MA's), (Start: 97 @35755 has 1 MA's), (102, 35722), (118, 35665), (127, 35605), (134, 35578), (141, 35545), (169, 35389), (179, 35311), (182, 35299), (198, 35257), (203, 35239), (208, 35209), (209, 35206), (210, 35194), (212, 35176), (213, 35170), (214, 35167), (272, 35008), (283, 34963), (290, 34921), (311, 34783), (316, 34747), (329, 34681), (331, 34669), (354, 34555), (357, 34537), (365, 34486), (377, 34405), (380, 34396), (393, 34342), (399, 34312), (402, 34303), (417, 34249), (432, 34186), (447, 34138), (451, 34129),

Gene: EricB\_53 Start: 34807, Stop: 32783, Start Num: 45

Candidate Starts for EricB\_53:

(32, 34840), (Start: 45 @34807 has 304 MA's), (Start: 88 @34621 has 3 MA's), (102, 34537), (116, 34489), (118, 34480), (127, 34420), (141, 34360), (153, 34303), (157, 34264), (165, 34231), (169, 34204), (170, 34195), (175, 34141), (179, 34126), (203, 34054), (208, 34024), (212, 33991), (213, 33985), (214, 33982), (283, 33790), (307, 33631), (311, 33610), (331, 33496), (344, 33436), (346, 33427), (354, 33382), (357, 33364), (361, 33331), (378, 33229), (380, 33223), (393, 33169), (398, 33142), (399, 33139), (402, 33130), (417, 33076), (432, 33013), (440, 32983), (451, 32956),

Gene: Erik\_41 Start: 32006, Stop: 29961, Start Num: 45

Candidate Starts for Erik\_41:

(Start: 45 @32006 has 304 MA's), (74, 31886), (87, 31817), (Start: 97 @31763 has 1 MA's), (116, 31682), (118, 31673), (127, 31613), (132, 31595), (154, 31493), (156, 31460), (157, 31457), (159, 31448), (164, 31427), (168, 31406), (169, 31397), (175, 31334), (179, 31319), (181, 31313), (203, 31253), (209, 31220), (212, 31190), (213, 31184), (214, 31181), (252, 31046), (301, 30851), (304, 30833), (310, 30800), (326, 30710), (328, 30701), (354, 30569), (363, 30509), (372, 30437), (385, 30398), (387, 30395), (388, 30383), (393, 30350), (402, 30311), (421, 30239), (428, 30212), (465, 30077),

Gene: Eris\_49 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Eris\_49:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Eros\_50 Start: 35450, Stop: 33417, Start Num: 49

Candidate Starts for Eros\_50:

(Start: 49 @35450 has 219 MA's), (68, 35387), (Start: 73 @35339 has 3 MA's), (78, 35315), (92, 35249), (Start: 97 @35213 has 1 MA's), (102, 35180), (116, 35132), (118, 35123), (127, 35066), (134, 35039), (141, 35006), (169, 34850), (170, 34841), (179, 34772), (203, 34700), (208, 34670), (209, 34667), (212, 34637), (213, 34631), (214, 34628), (232, 34541), (244, 34511), (255, 34499), (261, 34490), (279, 34442), (311, 34238), (329, 34136), (333, 34118), (360, 33977), (363, 33950), (392, 33806), (393, 33803), (399, 33773), (417, 33710), (426, 33677), (428, 33668), (432, 33647), (447, 33599), (465, 33533),

Gene: Esperer\_47 Start: 31483, Stop: 33573, Start Num: 45

Candidate Starts for Esperer\_47:

(Start: 45 @31483 has 304 MA's), (78, 31624), (79, 31639), (Start: 88 @31693 has 3 MA's), (90, 31699), (Start: 97 @31744 has 1 MA's), (116, 31825), (118, 31834), (132, 31912), (134, 31921), (141, 31954), (156, 32047), (161, 32071), (169, 32113), (179, 32191), (180, 32194), (203, 32281), (212, 32344), (214, 32353), (275, 32518), (279, 32530), (297, 32662), (302, 32689), (311, 32740), (313,

32755), (316, 32776), (329, 32842), (357, 32986), (358, 32992), (360, 33001), (365, 33037), (369, 33085), (371, 33097), (378, 33124), (384, 33136), (392, 33190), (404, 33241), (411, 33262), (421, 33295), (426, 33313), (432, 33343), (434, 33355), (443, 33382), (462, 33442), (478, 33511), (479, 33514), (485, 33565),

Gene: Espica\_41 Start: 32007, Stop: 29962, Start Num: 45

Candidate Starts for Espica\_41:

(Start: 45 @32007 has 304 MA's), (74, 31887), (87, 31818), (Start: 97 @31764 has 1 MA's), (116, 31683), (118, 31674), (127, 31614), (132, 31596), (154, 31494), (156, 31461), (157, 31458), (159, 31449), (164, 31428), (168, 31407), (169, 31398), (175, 31335), (179, 31320), (181, 31314), (203, 31254), (209, 31221), (212, 31191), (213, 31185), (214, 31182), (252, 31047), (301, 30852), (304, 30834), (310, 30801), (326, 30711), (328, 30702), (354, 30570), (363, 30510), (372, 30438), (385, 30399), (387, 30396), (388, 30384), (393, 30351), (402, 30312), (421, 30240), (428, 30213), (465, 30078),

Gene: Et2Brutus\_50 Start: 34841, Stop: 32817, Start Num: 50

Candidate Starts for Et2Brutus\_50:

(28, 34892), (41, 34859), (Start: 50 @34841 has 19 MA's), (Start: 73 @34733 has 3 MA's), (Start: 88 @34658 has 3 MA's), (116, 34526), (118, 34517), (141, 34397), (169, 34241), (174, 34193), (178, 34166), (179, 34163), (182, 34151), (197, 34118), (203, 34097), (210, 34052), (212, 34034), (213, 34028), (214, 34025), (270, 33875), (283, 33827), (286, 33812), (290, 33785), (311, 33647), (321, 33587), (329, 33545), (333, 33527), (347, 33455), (357, 33401), (360, 33386), (361, 33368), (377, 33269), (393, 33206), (402, 33167), (414, 33119), (426, 33077), (432, 33047), (447, 32999),

Gene: Eurydice\_51 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for Eurydice\_51:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: EvilGenius\_53 Start: 37465, Stop: 35426, Start Num: 45

Candidate Starts for EvilGenius\_53:

(Start: 45 @37465 has 304 MA's), (Start: 97 @37225 has 1 MA's), (118, 37135), (119, 37120), (141, 37015), (169, 36859), (179, 36781), (203, 36709), (208, 36679), (209, 36676), (212, 36646), (213, 36640), (214, 36637), (272, 36478), (283, 36433), (290, 36391), (311, 36253), (316, 36217), (329, 36151), (344, 36079), (354, 36025), (357, 36007), (387, 35857), (393, 35812), (402, 35773), (403, 35770), (417, 35719), (432, 35656), (447, 35608), (451, 35599), (484, 35458),

Gene: Evy\_44 Start: 19658, Stop: 21601, Start Num: 64

Candidate Starts for Evy\_44:

(Start: 64 @19658 has 64 MA's), (Start: 67 @19664 has 1 MA's), (83, 19766), (86, 19787), (90, 19796), (106, 19886), (111, 19895), (112, 19904), (114, 19907), (133, 20012), (159, 20156), (198, 20321), (217, 20432), (235, 20522), (248, 20534), (306, 20747), (333, 20894), (336, 20912), (364, 21050), (366, 21068), (390, 21176), (430, 21347), (438, 21386), (468, 21485),

Gene: Expelliarmus\_47 Start: 34026, Stop: 31981, Start Num: 49

Candidate Starts for Expelliarmus\_47:

(Start: 49 @34026 has 219 MA's), (75, 33900), (87, 33843), (Start: 88 @33840 has 3 MA's), (Start: 97 @33789 has 1 MA's), (102, 33756), (116, 33708), (118, 33699), (123, 33657), (147, 33561), (153,

33522), (158, 33477), (168, 33432), (169, 33423), (175, 33360), (176, 33354), (179, 33345), (180, 33342), (203, 33273), (208, 33243), (209, 33240), (212, 33210), (213, 33204), (214, 33201), (283, 33003), (311, 32820), (316, 32784), (329, 32718), (350, 32619), (363, 32532), (365, 32523), (377, 32439), (399, 32337), (411, 32292), (428, 32232), (432, 32211), (436, 32193), (482, 32022),

Gene: ExplosioNervosa\_51 Start: 35802, Stop: 33763, Start Num: 45

Candidate Starts for ExplosioNervosa\_51:

(Start: 45 @35802 has 304 MA's), (Start: 73 @35688 has 3 MA's), (75, 35673), (78, 35664), (Start: 97 @35562 has 1 MA's), (118, 35472), (127, 35412), (128, 35409), (141, 35352), (168, 35205), (169, 35196), (179, 35118), (182, 35106), (203, 35052), (208, 35022), (210, 35007), (212, 34989), (213, 34983), (214, 34980), (272, 34815), (283, 34770), (311, 34590), (329, 34488), (344, 34416), (361, 34311), (363, 34302), (393, 34149), (399, 34119), (417, 34056), (432, 33993),

Gene: Fameo\_51 Start: 36026, Stop: 33966, Start Num: 45

Candidate Starts for Fameo\_51:

(Start: 45 @36026 has 304 MA's), (Start: 73 @35915 has 3 MA's), (Start: 88 @35840 has 3 MA's), (Start: 97 @35789 has 1 MA's), (102, 35756), (116, 35708), (118, 35699), (127, 35639), (141, 35579), (169, 35423), (179, 35345), (203, 35273), (208, 35243), (209, 35240), (210, 35228), (212, 35210), (213, 35204), (214, 35201), (240, 35090), (272, 35018), (283, 34973), (290, 34931), (307, 34814), (311, 34793), (316, 34757), (329, 34691), (344, 34619), (354, 34565), (357, 34547), (393, 34352), (402, 34313), (403, 34310), (417, 34259), (419, 34253), (432, 34196), (440, 34166), (484, 33998),

Gene: Farber\_54 Start: 35896, Stop: 33878, Start Num: 55

Candidate Starts for Farber\_54:

(Start: 55 @35896 has 95 MA's), (Start: 71 @35803 has 1 MA's), (Start: 73 @35794 has 3 MA's), (78, 35770), (Start: 88 @35719 has 3 MA's), (Start: 97 @35668 has 1 MA's), (116, 35587), (118, 35578), (141, 35461), (157, 35365), (169, 35305), (176, 35236), (179, 35227), (180, 35224), (182, 35215), (203, 35155), (208, 35125), (209, 35122), (210, 35110), (212, 35092), (213, 35086), (214, 35083), (235, 34978), (239, 34972), (279, 34915), (311, 34711), (313, 34696), (316, 34675), (321, 34651), (326, 34624), (329, 34609), (356, 34471), (357, 34465), (360, 34450), (363, 34423), (370, 34360), (371, 34354), (377, 34330), (402, 34225), (411, 34189), (432, 34108), (459, 34030), (465, 33994), (481, 33931),

Gene: FatCactus\_43 Start: 33050, Stop: 31014, Start Num: 49

Candidate Starts for FatCactus\_43:

(28, 33077), (31, 33071), (Start: 49 @33050 has 219 MA's), (Start: 88 @32864 has 3 MA's), (102, 32780), (116, 32732), (118, 32723), (126, 32666), (131, 32651), (141, 32603), (156, 32510), (169, 32447), (176, 32378), (179, 32369), (203, 32303), (208, 32273), (209, 32270), (212, 32240), (213, 32234), (214, 32231), (229, 32156), (232, 32144), (260, 32090), (270, 32075), (283, 32027), (311, 31847), (326, 31760), (328, 31751), (343, 31676), (348, 31652), (356, 31607), (363, 31559), (375, 31472), (388, 31433), (394, 31397), (402, 31361), (417, 31307), (421, 31292), (426, 31274), (447, 31196), (481, 31067), (482, 31055),

Gene: Faust\_20 Start: 8037, Stop: 9980, Start Num: 65

Candidate Starts for Faust\_20:

(62, 8028), (Start: 65 @8037 has 26 MA's), (Start: 73 @8094 has 3 MA's), (111, 8274), (114, 8286), (133, 8391), (206, 8724), (208, 8745), (231, 8877), (314, 9171), (327, 9243), (332, 9267), (370, 9486), (371, 9492), (381, 9516), (383, 9519), (389, 9549), (390, 9552), (393, 9573), (400, 9609), (412, 9654), (423, 9693), (427, 9705), (433, 9741), (468, 9861), (473, 9885),

Gene: Fayely\_51 Start: 35703, Stop: 33664, Start Num: 45

Candidate Starts for Fayely\_51:

(Start: 45 @35703 has 304 MA's), (Start: 73 @35589 has 3 MA's), (75, 35574), (78, 35565), (Start: 97 @35463 has 1 MA's), (118, 35373), (127, 35313), (141, 35253), (168, 35106), (169, 35097), (179, 35019), (182, 35007), (202, 34962), (203, 34953), (208, 34923), (210, 34908), (212, 34890), (213, 34884), (214, 34881), (272, 34716), (280, 34692), (283, 34671), (311, 34491), (331, 34377), (344, 34317), (361, 34212), (363, 34203), (393, 34050), (399, 34020), (417, 33957), (432, 33894),

Gene: Fernando\_54 Start: 35906, Stop: 33888, Start Num: 55

Candidate Starts for Fernando\_54:

(Start: 55 @35906 has 95 MA's), (Start: 71 @35813 has 1 MA's), (Start: 73 @35804 has 3 MA's), (78, 35780), (Start: 88 @35729 has 3 MA's), (Start: 97 @35678 has 1 MA's), (116, 35597), (118, 35588), (141, 35468), (154, 35408), (157, 35372), (169, 35312), (179, 35234), (203, 35162), (208, 35132), (212, 35099), (213, 35093), (214, 35090), (230, 35009), (239, 34979), (279, 34925), (304, 34754), (321, 34658), (329, 34616), (333, 34598), (343, 34550), (346, 34538), (356, 34481), (357, 34475), (360, 34460), (363, 34433), (370, 34370), (371, 34364), (377, 34340), (402, 34235), (421, 34166), (426, 34148), (432, 34118), (459, 34040), (465, 34004), (481, 33941),

Gene: Fibonacci\_51 Start: 34847, Stop: 32826, Start Num: 50

Candidate Starts for Fibonacci\_51:

(28, 34898), (41, 34865), (Start: 50 @34847 has 19 MA's), (Start: 73 @34739 has 3 MA's), (Start: 88 @34664 has 3 MA's), (116, 34532), (118, 34523), (141, 34403), (169, 34247), (174, 34199), (178, 34172), (179, 34169), (182, 34157), (197, 34124), (203, 34103), (210, 34058), (212, 34040), (213, 34034), (214, 34031), (250, 33911), (283, 33836), (286, 33821), (290, 33794), (311, 33656), (321, 33596), (329, 33554), (333, 33536), (347, 33464), (357, 33410), (360, 33395), (361, 33377), (377, 33278), (393, 33215), (402, 33176), (426, 33086), (432, 33056), (447, 33008),

Gene: FiringLine\_51 Start: 35679, Stop: 33643, Start Num: 45

Candidate Starts for FiringLine\_51:

(Start: 45 @35679 has 304 MA's), (Start: 73 @35568 has 3 MA's), (74, 35565), (Start: 88 @35493 has 3 MA's), (Start: 97 @35442 has 1 MA's), (100, 35424), (110, 35388), (118, 35352), (141, 35232), (168, 35085), (169, 35076), (179, 34998), (203, 34926), (208, 34896), (209, 34893), (210, 34881), (212, 34863), (213, 34857), (214, 34854), (272, 34695), (283, 34650), (290, 34608), (311, 34470), (316, 34434), (329, 34368), (331, 34356), (344, 34296), (354, 34242), (357, 34224), (393, 34029), (402, 33990), (403, 33987), (417, 33936), (432, 33873), (447, 33825), (451, 33816), (484, 33675),

Gene: First\_0053 Start: 36164, Stop: 34107, Start Num: 45

Candidate Starts for First\_0053:

(Start: 45 @36164 has 304 MA's), (Start: 71 @36059 has 1 MA's), (Start: 73 @36050 has 3 MA's), (74, 36047), (78, 36026), (Start: 88 @35975 has 3 MA's), (Start: 97 @35924 has 1 MA's), (118, 35834), (126, 35777), (127, 35774), (141, 35714), (169, 35558), (170, 35549), (179, 35480), (203, 35414), (208, 35384), (209, 35381), (210, 35369), (212, 35351), (213, 35345), (214, 35342), (240, 35231), (272, 35159), (283, 35114), (290, 35072), (311, 34934), (329, 34832), (331, 34820), (344, 34760), (354, 34706), (357, 34688), (378, 34556), (382, 34547), (388, 34526), (393, 34493), (402, 34454), (403, 34451), (417, 34400), (419, 34394), (432, 34337), (447, 34289), (451, 34280),

Gene: Flare16\_51 Start: 35751, Stop: 33715, Start Num: 45

Candidate Starts for Flare16\_51:

(Start: 45 @35751 has 304 MA's), (61, 35712), (Start: 73 @35640 has 3 MA's), (Start: 88 @35565 has 3 MA's), (Start: 97 @35514 has 1 MA's), (102, 35481), (118, 35424), (134, 35337), (141, 35304), (169, 35148), (175, 35085), (179, 35070), (182, 35058), (198, 35016), (203, 34998), (208, 34968), (209, 34965), (210, 34953), (212, 34935), (213, 34929), (214, 34926), (272, 34767), (283, 34722), (290, 34680), (311, 34542), (316, 34506), (329, 34440), (331, 34428), (344, 34368), (354, 34314), (357, 34296), (365, 34245), (377, 34164), (380, 34155), (393, 34101), (399, 34071), (402, 34062), (417, 34008), (432, 33945), (447, 33897), (451, 33888),



Gene: Flaverint\_52 Start: 35305, Stop: 33284, Start Num: 50

Candidate Starts for Flaverint\_52:

(28, 35356), (41, 35323), (Start: 50 @35305 has 19 MA's), (Start: 73 @35197 has 3 MA's), (Start: 88 @35122 has 3 MA's), (116, 34990), (118, 34981), (141, 34861), (169, 34705), (174, 34657), (178, 34630), (179, 34627), (182, 34615), (197, 34582), (203, 34561), (210, 34516), (212, 34498), (213, 34492), (214, 34489), (250, 34369), (283, 34294), (286, 34279), (290, 34252), (311, 34114), (321, 34054), (329, 34012), (333, 33994), (347, 33922), (357, 33868), (360, 33853), (361, 33835), (377, 33736), (393, 33673), (402, 33634), (426, 33544), (432, 33514), (447, 33466),

Gene: Florean\_50 Start: 35447, Stop: 33414, Start Num: 49

Candidate Starts for Florean\_50:

(Start: 49 @35447 has 219 MA's), (68, 35384), (Start: 73 @35336 has 3 MA's), (78, 35312), (92, 35246), (Start: 97 @35210 has 1 MA's), (102, 35177), (116, 35129), (118, 35120), (127, 35063), (134, 35036), (141, 35003), (169, 34847), (170, 34838), (179, 34769), (203, 34697), (208, 34667), (209, 34664), (212, 34634), (213, 34628), (214, 34625), (232, 34538), (241, 34514), (244, 34508), (255, 34496), (261, 34487), (279, 34439), (310, 34238), (311, 34235), (329, 34133), (333, 34115), (360, 33974), (363, 33947), (392, 33803), (393, 33800), (399, 33770), (417, 33707), (426, 33674), (428, 33665), (432, 33644), (447, 33596), (465, 33530),

Gene: Flux\_50 Start: 35447, Stop: 33414, Start Num: 49

Candidate Starts for Flux\_50:

(Start: 49 @35447 has 219 MA's), (68, 35384), (Start: 73 @35336 has 3 MA's), (78, 35312), (92, 35246), (Start: 97 @35210 has 1 MA's), (102, 35177), (116, 35129), (118, 35120), (127, 35063), (134, 35036), (141, 35003), (169, 34847), (170, 34838), (179, 34769), (203, 34697), (208, 34667), (209, 34664), (212, 34634), (213, 34628), (214, 34625), (232, 34538), (244, 34508), (255, 34496), (261, 34487), (279, 34439), (311, 34235), (329, 34133), (333, 34115), (360, 33974), (363, 33947), (392, 33803), (393, 33800), (399, 33770), (417, 33707), (426, 33674), (428, 33665), (432, 33644), (447, 33596), (465, 33530),

Gene: FlyCatcher\_55 Start: 37832, Stop: 35775, Start Num: 51

Candidate Starts for FlyCatcher\_55:

(Start: 51 @37832 has 3 MA's), (75, 37709), (Start: 88 @37649 has 3 MA's), (Start: 97 @37598 has 1 MA's), (102, 37565), (116, 37517), (118, 37508), (127, 37448), (141, 37388), (150, 37343), (168, 37241), (176, 37163), (179, 37154), (203, 37073), (208, 37043), (209, 37040), (212, 37010), (213, 37004), (214, 37001), (254, 36875), (279, 36809), (311, 36605), (316, 36569), (322, 36542), (329, 36503), (333, 36485), (356, 36365), (357, 36359), (360, 36344), (365, 36308), (372, 36245), (393, 36158), (399, 36128), (403, 36116), (417, 36065), (428, 36023), (455, 35939),

Gene: ForGetIt\_43 Start: 34427, Stop: 32358, Start Num: 49

Candidate Starts for ForGetIt\_43:

(Start: 49 @34427 has 219 MA's), (Start: 88 @34241 has 3 MA's), (Start: 97 @34190 has 1 MA's), (102, 34157), (116, 34109), (118, 34100), (141, 33980), (146, 33965), (164, 33854), (165, 33851), (169, 33824), (170, 33815), (176, 33755), (179, 33746), (184, 33722), (203, 33635), (208, 33605), (209, 33602), (212, 33572), (213, 33566), (214, 33563), (283, 33371), (308, 33209), (313, 33176), (322, 33128), (329, 33089), (343, 33020), (354, 32963), (356, 32951), (357, 32945), (363, 32903), (365, 32894), (392, 32747), (399, 32714), (410, 32672), (421, 32636), (426, 32618), (428, 32609), (482, 32399),

Gene: Forrest\_24 Start: 8839, Stop: 10782, Start Num: 65

Candidate Starts for Forrest\_24:

(62, 8830), (Start: 65 @8839 has 26 MA's), (Start: 73 @8896 has 3 MA's), (90, 8977), (111, 9076), (112, 9085), (114, 9088), (133, 9193), (163, 9343), (169, 9373), (198, 9499), (244, 9706), (304, 9919),

(314, 9973), (327, 10045), (332, 10069), (351, 10141), (389, 10351), (390, 10354), (409, 10450), (413, 10459), (473, 10687),

Gene: Francesca\_37 Start: 17107, Stop: 19068, Start Num: 63

Candidate Starts for Francesca\_37:

(61, 17101), (Start: 63 @17107 has 2 MA's), (Start: 64 @17110 has 64 MA's), (90, 17239), (102, 17311), (106, 17329), (111, 17338), (112, 17347), (114, 17350), (133, 17455), (160, 17605), (169, 17638), (183, 17731), (198, 17764), (206, 17791), (207, 17809), (209, 17815), (211, 17842), (217, 17875), (248, 17977), (282, 18034), (293, 18121), (303, 18178), (307, 18199), (324, 18295), (327, 18310), (329, 18319), (336, 18355), (364, 18493), (381, 18583), (386, 18592), (466, 18913), (468, 18925), (473, 18946), (483, 18997),

Gene: Francob\_20 Start: 7636, Stop: 9579, Start Num: 65

Candidate Starts for Francob\_20:

(62, 7627), (Start: 65 @7636 has 26 MA's), (Start: 73 @7693 has 3 MA's), (90, 7774), (111, 7873), (114, 7885), (133, 7990), (198, 8296), (208, 8344), (244, 8503), (288, 8611), (295, 8677), (314, 8770), (317, 8797), (325, 8830), (327, 8842), (332, 8866), (351, 8938), (390, 9151), (401, 9211), (423, 9292), (433, 9340), (473, 9484), (486, 9559),

Gene: Fred313\_51 Start: 35332, Stop: 33308, Start Num: 49

Candidate Starts for Fred313\_51:

(Start: 49 @35332 has 219 MA's), (74, 35218), (92, 35131), (Start: 97 @35095 has 1 MA's), (102, 35062), (116, 35014), (118, 35005), (141, 34885), (165, 34756), (169, 34729), (170, 34720), (179, 34651), (185, 34630), (187, 34627), (203, 34585), (208, 34555), (210, 34540), (212, 34522), (213, 34516), (214, 34513), (235, 34408), (239, 34402), (279, 34345), (286, 34306), (311, 34141), (316, 34105), (321, 34081), (329, 34039), (333, 34021), (356, 33901), (357, 33895), (360, 33880), (363, 33853), (365, 33844), (389, 33715), (403, 33652), (428, 33559), (432, 33538), (460, 33457), (465, 33424),

Gene: Funston\_49 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Funston\_49:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Gadost\_50 Start: 35452, Stop: 33419, Start Num: 49

Candidate Starts for Gadost\_50:

(Start: 49 @35452 has 219 MA's), (68, 35389), (Start: 73 @35341 has 3 MA's), (78, 35317), (92, 35251), (Start: 97 @35215 has 1 MA's), (102, 35182), (116, 35134), (118, 35125), (127, 35068), (134, 35041), (141, 35008), (169, 34852), (170, 34843), (179, 34774), (203, 34702), (208, 34672), (209, 34669), (212, 34639), (213, 34633), (214, 34630), (232, 34543), (244, 34513), (255, 34501), (261, 34492), (279, 34444), (311, 34240), (329, 34138), (333, 34120), (360, 33979), (363, 33952), (392, 33808), (393, 33805), (399, 33775), (417, 33712), (426, 33679), (428, 33670), (432, 33649), (447, 33601), (465, 33535),

Gene: Gaia\_89 Start: 51713, Stop: 53695, Start Num: 48

Candidate Starts for Gaia\_89:

(Start: 48 @51713 has 2 MA's), (85, 51899), (102, 51992), (114, 52037), (118, 52055), (120, 52079), (121, 52094), (122, 52097), (125, 52112), (136, 52163), (140, 52178), (149, 52214), (176, 52409),

(185, 52439), (203, 52484), (209, 52517), (213, 52553), (215, 52559), (218, 52580), (227, 52628), (233, 52655), (236, 52661), (271, 52694), (278, 52715), (281, 52721), (285, 52748), (293, 52814), (296, 52841), (300, 52853), (315, 52931), (319, 52961), (321, 52964), (330, 53003), (333, 53015), (347, 53072), (354, 53105), (360, 53138), (361, 53156), (362, 53162), (363, 53165), (366, 53186), (392, 53315), (393, 53318), (398, 53342), (423, 53432), (433, 53480), (435, 53489), (441, 53504), (450, 53528), (454, 53540), (466, 53591), (468, 53603), (471, 53618), (474, 53627), (481, 53651),

Gene: Gail\_55 Start: 36771, Stop: 34732, Start Num: 45

Candidate Starts for Gail\_55:

(Start: 45 @36771 has 304 MA's), (74, 36654), (102, 36498), (116, 36450), (118, 36441), (128, 36378), (141, 36321), (169, 36165), (178, 36090), (179, 36087), (203, 36021), (208, 35991), (209, 35988), (212, 35958), (213, 35952), (214, 35949), (217, 35928), (272, 35784), (283, 35739), (290, 35697), (311, 35559), (321, 35499), (331, 35445), (344, 35385), (346, 35376), (352, 35349), (357, 35313), (361, 35280), (393, 35118), (402, 35079), (410, 35046), (417, 35025), (432, 34962), (447, 34914), (484, 34764),

Gene: Garak\_56 Start: 35277, Stop: 33223, Start Num: 45

Candidate Starts for Garak\_56:

(Start: 45 @35277 has 304 MA's), (Start: 88 @35091 has 3 MA's), (Start: 97 @35040 has 1 MA's), (102, 35007), (116, 34959), (118, 34950), (127, 34890), (141, 34830), (153, 34773), (157, 34734), (165, 34701), (169, 34674), (170, 34665), (175, 34611), (179, 34596), (203, 34524), (208, 34494), (212, 34461), (213, 34455), (214, 34452), (232, 34365), (250, 34311), (270, 34278), (283, 34230), (290, 34188), (311, 34050), (331, 33936), (344, 33876), (346, 33867), (354, 33822), (357, 33804), (361, 33771), (378, 33669), (380, 33663), (393, 33609), (398, 33582), (402, 33570), (417, 33516), (432, 33453), (440, 33423), (451, 33396), (461, 33357),

Gene: Garnacho\_141 Start: 76507, Stop: 78120, Start Num: 103

Candidate Starts for Garnacho\_141:

(Start: 103 @76507 has 3 MA's), (Start: 104 @76513 has 1 MA's), (108, 76522), (124, 76615), (138, 76678), (152, 76744), (157, 76783), (159, 76792), (162, 76807), (167, 76831), (173, 76873), (177, 76906), (202, 76939), (212, 77011), (218, 77041), (220, 77047), (226, 77080), (227, 77086), (247, 77143), (270, 77173), (279, 77197), (292, 77278), (306, 77353), (320, 77434), (326, 77464), (328, 77473), (349, 77566), (356, 77605), (363, 77653), (367, 77683), (376, 77743), (379, 77746), (411, 77869), (420, 77899), (425, 77920), (432, 77953), (439, 77980), (442, 77986), (458, 78025), (470, 78088),

Gene: GaugeLDP\_49 Start: 36020, Stop: 33984, Start Num: 45

Candidate Starts for GaugeLDP\_49:

(Start: 45 @36020 has 304 MA's), (70, 35924), (Start: 88 @35831 has 3 MA's), (Start: 97 @35780 has 1 MA's), (116, 35699), (118, 35690), (127, 35630), (139, 35576), (141, 35570), (159, 35465), (168, 35423), (169, 35414), (179, 35336), (203, 35264), (208, 35234), (209, 35231), (210, 35219), (212, 35201), (213, 35195), (214, 35192), (232, 35105), (270, 35039), (283, 34991), (290, 34949), (311, 34811), (316, 34775), (329, 34709), (344, 34637), (352, 34601), (357, 34565), (361, 34532), (377, 34433), (380, 34424), (393, 34370), (402, 34331), (417, 34277), (432, 34214), (447, 34166),

Gene: Gemma\_53 Start: 35792, Stop: 33777, Start Num: 55

Candidate Starts for Gemma\_53:

(Start: 55 @35792 has 95 MA's), (Start: 71 @35699 has 1 MA's), (Start: 73 @35690 has 3 MA's), (78, 35666), (Start: 88 @35615 has 3 MA's), (Start: 97 @35564 has 1 MA's), (116, 35483), (118, 35474), (127, 35417), (141, 35357), (154, 35297), (157, 35261), (169, 35201), (170, 35192), (179, 35123), (182, 35111), (203, 35051), (208, 35021), (209, 35018), (210, 35006), (212, 34988), (213, 34982), (214, 34979), (221, 34946), (253, 34844), (279, 34814), (304, 34643), (313, 34592), (316, 34571), (321, 34547), (329, 34505), (333, 34487), (343, 34439), (357, 34364), (363, 34322), (370, 34259),

(371, 34253), (377, 34229), (402, 34124), (421, 34055), (426, 34037), (428, 34028), (432, 34007), (459, 33929), (465, 33893), (481, 33830),

Gene: Genie2\_45 Start: 19480, Stop: 21420, Start Num: 64

Candidate Starts for Genie2\_45:

(Start: 64 @19480 has 64 MA's), (90, 19612), (96, 19648), (101, 19672), (102, 19684), (111, 19711), (114, 19723), (133, 19828), (144, 19870), (151, 19918), (207, 20182), (211, 20215), (217, 20248), (228, 20299), (230, 20314), (235, 20338), (248, 20350), (285, 20428), (297, 20527), (305, 20560), (306, 20563), (327, 20683), (333, 20710), (336, 20728), (366, 20884), (389, 20989), (390, 20992), (430, 21163), (438, 21202), (468, 21301),

Gene: George\_43 Start: 34425, Stop: 32572, Start Num: 97

Candidate Starts for George\_43:

(Start: 49 @34662 has 219 MA's), (Start: 88 @34476 has 3 MA's), (Start: 97 @34425 has 1 MA's), (116, 34344), (118, 34335), (141, 34215), (146, 34200), (164, 34089), (165, 34086), (169, 34059), (170, 34050), (176, 33990), (179, 33981), (184, 33957), (203, 33870), (208, 33840), (209, 33837), (212, 33807), (213, 33801), (214, 33798), (239, 33687), (283, 33585), (286, 33570), (308, 33423), (313, 33390), (322, 33342), (329, 33303), (343, 33234), (354, 33177), (356, 33165), (357, 33159), (363, 33117), (365, 33108), (372, 33045), (394, 32955), (399, 32928), (410, 32886), (421, 32850), (426, 32832), (482, 32613),

Gene: Georgie2\_52 Start: 35724, Stop: 33688, Start Num: 45

Candidate Starts for Georgie2\_52:

(Start: 45 @35724 has 304 MA's), (Start: 73 @35613 has 3 MA's), (74, 35610), (Start: 88 @35538 has 3 MA's), (Start: 97 @35487 has 1 MA's), (100, 35469), (110, 35433), (118, 35397), (141, 35277), (168, 35130), (169, 35121), (179, 35043), (203, 34971), (208, 34941), (209, 34938), (210, 34926), (212, 34908), (213, 34902), (214, 34899), (272, 34740), (283, 34695), (290, 34653), (311, 34515), (316, 34479), (329, 34413), (331, 34401), (344, 34341), (354, 34287), (357, 34269), (393, 34074), (402, 34035), (403, 34032), (417, 33981), (432, 33918), (447, 33870), (451, 33861), (484, 33720),

Gene: Ghouboy\_45 Start: 35167, Stop: 33101, Start Num: 49

Candidate Starts for Ghouboy\_45:

(Start: 49 @35167 has 219 MA's), (Start: 51 @35164 has 3 MA's), (74, 35053), (Start: 88 @34981 has 3 MA's), (100, 34912), (116, 34849), (118, 34840), (141, 34720), (146, 34705), (164, 34594), (168, 34573), (169, 34564), (170, 34555), (179, 34486), (182, 34474), (200, 34393), (203, 34375), (208, 34345), (209, 34342), (212, 34312), (213, 34306), (214, 34303), (232, 34216), (243, 34186), (258, 34162), (283, 34114), (308, 33952), (313, 33919), (322, 33871), (329, 33832), (343, 33763), (354, 33706), (356, 33694), (357, 33688), (363, 33646), (365, 33637), (392, 33490), (399, 33457), (410, 33415), (421, 33379), (426, 33361), (428, 33352), (482, 33142),

Gene: GiJojo\_135 Start: 78278, Stop: 79900, Start Num: 104

Candidate Starts for GiJojo\_135:

(Start: 104 @78278 has 1 MA's), (108, 78287), (124, 78380), (152, 78509), (154, 78515), (159, 78557), (162, 78572), (167, 78596), (173, 78638), (177, 78671), (180, 78680), (202, 78704), (212, 78776), (220, 78812), (222, 78818), (227, 78851), (279, 78977), (284, 79007), (299, 79106), (309, 79151), (316, 79193), (318, 79208), (328, 79253), (379, 79526), (407, 79637), (411, 79649), (420, 79679), (425, 79700), (432, 79733), (437, 79751), (442, 79766), (458, 79805), (470, 79868),

Gene: Gibbi\_48 Start: 19282, Stop: 21222, Start Num: 64

Candidate Starts for Gibbi\_48:

(Start: 64 @19282 has 64 MA's), (90, 19414), (96, 19450), (102, 19486), (111, 19513), (114, 19525), (133, 19630), (148, 19687), (185, 19912), (206, 19966), (217, 20050), (228, 20101), (235, 20140), (248, 20152), (285, 20230), (297, 20329), (306, 20365), (333, 20512), (366, 20686), (369, 20722),

(389, 20791), (390, 20794), (430, 20965), (468, 21103), (486, 21205),

Gene: Gilberta\_52 Start: 35298, Stop: 33274, Start Num: 50

Candidate Starts for Gilberta\_52:

(28, 35349), (41, 35316), (Start: 50 @35298 has 19 MA's), (Start: 73 @35190 has 3 MA's), (Start: 88 @35115 has 3 MA's), (116, 34983), (118, 34974), (141, 34854), (169, 34698), (174, 34650), (178, 34623), (179, 34620), (182, 34608), (197, 34575), (203, 34554), (210, 34509), (212, 34491), (213, 34485), (214, 34482), (270, 34332), (283, 34284), (286, 34269), (311, 34104), (329, 34002), (333, 33984), (347, 33912), (357, 33858), (360, 33843), (361, 33825), (393, 33663), (402, 33624), (426, 33534), (432, 33504), (447, 33456),

Gene: Gilson\_24 Start: 8669, Stop: 10612, Start Num: 65

Candidate Starts for Gilson\_24:

(62, 8660), (Start: 65 @8669 has 26 MA's), (Start: 73 @8726 has 3 MA's), (90, 8807), (111, 8906), (112, 8915), (114, 8918), (133, 9023), (163, 9173), (169, 9203), (198, 9329), (244, 9536), (304, 9749), (314, 9803), (327, 9875), (332, 9899), (351, 9971), (389, 10181), (390, 10184), (409, 10280), (413, 10289), (473, 10517),

Gene: GingkoMaracino\_54 Start: 35792, Stop: 33774, Start Num: 55

Candidate Starts for GingkoMaracino\_54:

(Start: 55 @35792 has 95 MA's), (Start: 71 @35699 has 1 MA's), (Start: 73 @35690 has 3 MA's), (78, 35666), (Start: 88 @35615 has 3 MA's), (Start: 97 @35564 has 1 MA's), (116, 35483), (118, 35474), (141, 35354), (154, 35294), (157, 35258), (169, 35198), (179, 35120), (182, 35108), (203, 35048), (208, 35018), (212, 34985), (213, 34979), (214, 34976), (230, 34895), (239, 34865), (279, 34811), (304, 34640), (321, 34544), (329, 34502), (333, 34484), (343, 34436), (346, 34424), (356, 34367), (357, 34361), (360, 34346), (363, 34319), (370, 34256), (371, 34250), (377, 34226), (402, 34121), (421, 34052), (426, 34034), (428, 34025), (432, 34004), (459, 33926), (465, 33890), (481, 33827),

Gene: GirlDinner\_47 Start: 32537, Stop: 34660, Start Num: 45

Candidate Starts for GirlDinner\_47:

(Start: 45 @32537 has 304 MA's), (79, 32693), (Start: 88 @32747 has 3 MA's), (90, 32753), (Start: 97 @32798 has 1 MA's), (116, 32879), (118, 32888), (134, 32975), (135, 32987), (141, 33008), (161, 33125), (169, 33167), (179, 33245), (190, 33302), (203, 33353), (212, 33416), (273, 33599), (279, 33617), (311, 33827), (316, 33863), (329, 33929), (357, 34073), (358, 34079), (360, 34088), (365, 34124), (369, 34172), (371, 34184), (378, 34211), (384, 34223), (389, 34253), (392, 34277), (421, 34382), (426, 34400), (462, 34529), (478, 34598), (485, 34652),

Gene: Giroux\_52 Start: 35768, Stop: 33747, Start Num: 49

Candidate Starts for Giroux\_52:

(Start: 49 @35768 has 219 MA's), (74, 35654), (92, 35567), (Start: 97 @35531 has 1 MA's), (116, 35450), (118, 35441), (126, 35384), (141, 35321), (169, 35165), (179, 35087), (185, 35066), (187, 35063), (203, 35021), (208, 34991), (210, 34976), (212, 34958), (213, 34952), (214, 34949), (221, 34916), (279, 34784), (311, 34580), (316, 34544), (321, 34520), (329, 34478), (333, 34460), (356, 34340), (357, 34334), (360, 34319), (363, 34292), (389, 34154), (403, 34091), (428, 33998), (432, 33977), (460, 33896), (465, 33863),

Gene: Gladiator\_51 Start: 34502, Stop: 32448, Start Num: 45

Candidate Starts for Gladiator\_51:

(Start: 45 @34502 has 304 MA's), (Start: 88 @34316 has 3 MA's), (Start: 97 @34265 has 1 MA's), (102, 34232), (116, 34184), (118, 34175), (127, 34115), (141, 34055), (153, 33998), (157, 33959), (165, 33926), (169, 33899), (170, 33890), (179, 33821), (203, 33749), (208, 33719), (212, 33686), (213, 33680), (214, 33677), (232, 33590), (250, 33536), (283, 33455), (290, 33413), (311, 33275), (331, 33161), (344, 33101), (346, 33092), (354, 33047), (357, 33029), (361, 32996), (378, 32894),

(380, 32888), (393, 32834), (398, 32807), (402, 32795), (417, 32741), (432, 32678), (440, 32648), (451, 32621), (461, 32582),

Gene: Goby\_47 Start: 32483, Stop: 34573, Start Num: 45

Candidate Starts for Goby\_47:

(15, 32399), (Start: 45 @32483 has 304 MA's), (61, 32528), (79, 32639), (Start: 88 @32693 has 3 MA's), (90, 32699), (Start: 97 @32744 has 1 MA's), (116, 32825), (118, 32834), (132, 32912), (134, 32921), (141, 32954), (154, 33014), (156, 33047), (161, 33071), (169, 33113), (179, 33191), (180, 33194), (195, 33251), (203, 33281), (212, 33344), (214, 33353), (225, 33404), (242, 33473), (275, 33518), (279, 33530), (288, 33587), (297, 33662), (307, 33719), (311, 33740), (316, 33776), (326, 33827), (334, 33863), (346, 33923), (357, 33986), (358, 33992), (360, 34001), (365, 34037), (369, 34085), (371, 34097), (378, 34124), (384, 34136), (392, 34190), (394, 34196), (404, 34241), (410, 34259), (411, 34262), (421, 34295), (426, 34313), (432, 34343), (434, 34355), (443, 34382), (462, 34442), (479, 34514), (485, 34565),

Gene: Godpower\_48 Start: 32463, Stop: 34553, Start Num: 45

Candidate Starts for Godpower\_48:

(Start: 45 @32463 has 304 MA's), (61, 32508), (79, 32619), (82, 32640), (Start: 88 @32673 has 3 MA's), (90, 32679), (Start: 97 @32724 has 1 MA's), (116, 32805), (118, 32814), (119, 32829), (132, 32892), (141, 32934), (154, 32994), (156, 33027), (161, 33051), (169, 33093), (170, 33102), (179, 33171), (180, 33174), (195, 33231), (203, 33261), (212, 33324), (214, 33333), (225, 33384), (242, 33453), (275, 33498), (279, 33510), (297, 33642), (307, 33699), (311, 33720), (316, 33756), (326, 33807), (334, 33843), (346, 33903), (357, 33966), (358, 33972), (360, 33981), (365, 34017), (371, 34077), (378, 34104), (384, 34116), (385, 34119), (392, 34170), (394, 34176), (404, 34221), (410, 34239), (411, 34242), (421, 34275), (426, 34293), (432, 34323), (434, 34335), (443, 34362), (462, 34422), (479, 34494), (485, 34545),

Gene: Gollum\_41 Start: 32072, Stop: 30027, Start Num: 45

Candidate Starts for Gollum\_41:

(Start: 45 @32072 has 304 MA's), (74, 31952), (87, 31883), (Start: 97 @31829 has 1 MA's), (116, 31748), (118, 31739), (127, 31679), (132, 31661), (154, 31559), (156, 31526), (157, 31523), (159, 31514), (164, 31493), (168, 31472), (169, 31463), (175, 31400), (179, 31385), (181, 31379), (203, 31319), (209, 31286), (212, 31256), (213, 31250), (214, 31247), (252, 31112), (304, 30899), (310, 30866), (326, 30776), (328, 30767), (354, 30635), (363, 30575), (372, 30503), (385, 30464), (387, 30461), (388, 30449), (402, 30377), (419, 30314), (421, 30305), (428, 30278), (465, 30143),

Gene: Goose\_49 Start: 34995, Stop: 32914, Start Num: 34

Candidate Starts for Goose\_49:

(Start: 34 @34995 has 17 MA's), (Start: 73 @34854 has 3 MA's), (74, 34851), (78, 34830), (Start: 97 @34728 has 1 MA's), (102, 34695), (116, 34647), (118, 34638), (127, 34581), (141, 34521), (146, 34506), (157, 34425), (169, 34365), (179, 34287), (182, 34275), (202, 34224), (203, 34215), (208, 34185), (212, 34152), (213, 34146), (214, 34143), (266, 33978), (272, 33960), (283, 33915), (290, 33873), (311, 33735), (329, 33633), (333, 33615), (343, 33564), (344, 33561), (356, 33495), (357, 33489), (360, 33474), (363, 33447), (365, 33438), (371, 33378), (392, 33303), (393, 33300), (394, 33297), (403, 33258), (417, 33207), (419, 33201), (432, 33144), (465, 33030), (479, 32973),

Gene: Gratitude\_51 Start: 35953, Stop: 33956, Start Num: 61

Candidate Starts for Gratitude\_51:

(Start: 45 @35992 has 304 MA's), (61, 35953), (Start: 73 @35881 has 3 MA's), (Start: 88 @35806 has 3 MA's), (Start: 97 @35755 has 1 MA's), (102, 35722), (118, 35665), (127, 35605), (134, 35578), (141, 35545), (169, 35389), (179, 35311), (182, 35299), (198, 35257), (203, 35239), (208, 35209), (209, 35206), (210, 35194), (212, 35176), (213, 35170), (214, 35167), (272, 35008), (283, 34963), (290, 34921), (311, 34783), (316, 34747), (329, 34681), (331, 34669), (354, 34555), (357, 34537), (365,

34486), (377, 34405), (380, 34396), (393, 34342), (399, 34312), (402, 34303), (417, 34249), (432, 34186), (447, 34138), (451, 34129),

Gene: GreedyLawyer\_53 Start: 34814, Stop: 32790, Start Num: 45

Candidate Starts for GreedyLawyer\_53:

(32, 34847), (Start: 45 @34814 has 304 MA's), (Start: 88 @34628 has 3 MA's), (102, 34544), (116, 34496), (118, 34487), (127, 34427), (141, 34367), (153, 34310), (157, 34271), (165, 34238), (169, 34211), (170, 34202), (175, 34148), (179, 34133), (203, 34061), (208, 34031), (212, 33998), (213, 33992), (214, 33989), (283, 33797), (307, 33638), (311, 33617), (331, 33503), (344, 33443), (346, 33434), (354, 33389), (357, 33371), (361, 33338), (378, 33236), (380, 33230), (393, 33176), (398, 33149), (399, 33146), (402, 33137), (417, 33083), (432, 33020), (440, 32990), (451, 32963),

Gene: GreenWeasel\_48 Start: 31722, Stop: 33791, Start Num: 45

Candidate Starts for GreenWeasel\_48:

(Start: 45 @31722 has 304 MA's), (Start: 88 @31929 has 3 MA's), (Start: 97 @31980 has 1 MA's), (118, 32073), (134, 32160), (135, 32172), (141, 32193), (157, 32289), (161, 32310), (179, 32430), (180, 32433), (186, 32463), (203, 32502), (208, 32532), (210, 32547), (212, 32565), (229, 32649), (270, 32727), (279, 32751), (294, 32871), (297, 32883), (306, 32931), (311, 32961), (316, 32997), (323, 33024), (360, 33222), (363, 33249), (371, 33318), (375, 33336), (384, 33357), (394, 33417), (404, 33462), (426, 33534), (436, 33582), (462, 33660), (478, 33729), (485, 33783),

Gene: Grif\_54 Start: 35981, Stop: 33963, Start Num: 55

Candidate Starts for Grif\_54:

(Start: 55 @35981 has 95 MA's), (Start: 71 @35888 has 1 MA's), (Start: 73 @35879 has 3 MA's), (78, 35855), (Start: 88 @35804 has 3 MA's), (Start: 97 @35753 has 1 MA's), (116, 35672), (118, 35663), (141, 35543), (154, 35483), (157, 35447), (169, 35387), (179, 35309), (203, 35237), (208, 35207), (212, 35174), (213, 35168), (214, 35165), (230, 35084), (239, 35054), (279, 35000), (304, 34829), (321, 34733), (329, 34691), (333, 34673), (343, 34625), (346, 34613), (356, 34556), (357, 34550), (360, 34535), (363, 34508), (370, 34445), (371, 34439), (377, 34415), (402, 34310), (421, 34241), (426, 34223), (428, 34214), (432, 34193), (459, 34115), (465, 34079), (481, 34016),

Gene: Groundhog\_46 Start: 33924, Stop: 31879, Start Num: 49

Candidate Starts for Groundhog\_46:

(Start: 49 @33924 has 219 MA's), (75, 33798), (87, 33741), (Start: 88 @33738 has 3 MA's), (Start: 97 @33687 has 1 MA's), (102, 33654), (116, 33606), (118, 33597), (123, 33555), (147, 33459), (153, 33420), (158, 33375), (168, 33330), (169, 33321), (175, 33258), (176, 33252), (179, 33243), (180, 33240), (203, 33171), (208, 33141), (209, 33138), (212, 33108), (213, 33102), (214, 33099), (283, 32901), (311, 32718), (316, 32682), (329, 32616), (350, 32517), (363, 32430), (365, 32421), (377, 32337), (399, 32235), (411, 32190), (428, 32130), (432, 32109), (436, 32091), (482, 31920),

Gene: Groupthink\_55 Start: 35796, Stop: 33781, Start Num: 55

Candidate Starts for Groupthink\_55:

(Start: 55 @35796 has 95 MA's), (Start: 71 @35703 has 1 MA's), (Start: 73 @35694 has 3 MA's), (Start: 88 @35619 has 3 MA's), (Start: 97 @35568 has 1 MA's), (116, 35487), (118, 35478), (127, 35421), (141, 35361), (154, 35301), (157, 35265), (169, 35205), (170, 35196), (179, 35127), (182, 35115), (203, 35055), (208, 35025), (209, 35022), (210, 35010), (212, 34992), (213, 34986), (214, 34983), (221, 34950), (253, 34848), (279, 34818), (304, 34647), (310, 34614), (313, 34596), (316, 34575), (321, 34551), (329, 34509), (333, 34491), (343, 34443), (357, 34368), (363, 34326), (370, 34263), (371, 34257), (377, 34233), (402, 34128), (421, 34059), (426, 34041), (428, 34032), (432, 34011), (459, 33933), (465, 33897), (481, 33834),

Gene: Grub\_54 Start: 35898, Stop: 33880, Start Num: 55

Candidate Starts for Grub\_54:

(Start: 55 @35898 has 95 MA's), (Start: 73 @35796 has 3 MA's), (78, 35772), (Start: 88 @35721 has 3 MA's), (Start: 97 @35670 has 1 MA's), (116, 35589), (118, 35580), (141, 35460), (154, 35400), (157, 35364), (169, 35304), (179, 35226), (203, 35154), (208, 35124), (212, 35091), (213, 35085), (214, 35082), (230, 35001), (239, 34971), (279, 34917), (304, 34746), (321, 34650), (329, 34608), (333, 34590), (343, 34542), (346, 34530), (356, 34473), (357, 34467), (360, 34452), (363, 34425), (370, 34362), (371, 34356), (377, 34332), (402, 34227), (421, 34158), (426, 34140), (428, 34131), (432, 34110), (459, 34032), (465, 33996), (481, 33933),

Gene: Grum1\_54 Start: 35906, Stop: 33888, Start Num: 55

Candidate Starts for Grum1\_54:

(Start: 55 @35906 has 95 MA's), (Start: 71 @35813 has 1 MA's), (Start: 73 @35804 has 3 MA's), (78, 35780), (Start: 88 @35729 has 3 MA's), (Start: 97 @35678 has 1 MA's), (116, 35597), (118, 35588), (141, 35468), (154, 35408), (157, 35372), (169, 35312), (179, 35234), (203, 35162), (208, 35132), (212, 35099), (213, 35093), (214, 35090), (230, 35009), (239, 34979), (279, 34925), (304, 34754), (321, 34658), (329, 34616), (333, 34598), (343, 34550), (346, 34538), (356, 34481), (357, 34475), (360, 34460), (363, 34433), (370, 34370), (371, 34364), (377, 34340), (402, 34235), (421, 34166), (426, 34148), (428, 34139), (432, 34118), (459, 34040), (465, 34004), (481, 33941),

Gene: Gruunaga\_54 Start: 35201, Stop: 33147, Start Num: 45

Candidate Starts for Gruunaga\_54:

(Start: 45 @35201 has 304 MA's), (Start: 88 @35015 has 3 MA's), (Start: 97 @34964 has 1 MA's), (102, 34931), (116, 34883), (118, 34874), (127, 34814), (141, 34754), (153, 34697), (157, 34658), (165, 34625), (169, 34598), (170, 34589), (179, 34520), (203, 34448), (208, 34418), (212, 34385), (213, 34379), (214, 34376), (232, 34289), (250, 34235), (270, 34202), (283, 34154), (290, 34112), (311, 33974), (331, 33860), (344, 33800), (346, 33791), (354, 33746), (357, 33728), (361, 33695), (378, 33593), (380, 33587), (393, 33533), (398, 33506), (402, 33494), (417, 33440), (432, 33377), (440, 33347), (451, 33320), (461, 33281),

Gene: GtownJaz\_54 Start: 35908, Stop: 33890, Start Num: 55

Candidate Starts for GtownJaz\_54:

(Start: 55 @35908 has 95 MA's), (Start: 71 @35815 has 1 MA's), (Start: 73 @35806 has 3 MA's), (78, 35782), (Start: 88 @35731 has 3 MA's), (Start: 97 @35680 has 1 MA's), (116, 35599), (118, 35590), (141, 35470), (154, 35410), (157, 35374), (169, 35314), (179, 35236), (203, 35164), (208, 35134), (212, 35101), (213, 35095), (214, 35092), (230, 35011), (239, 34981), (279, 34927), (304, 34756), (321, 34660), (329, 34618), (333, 34600), (343, 34552), (346, 34540), (356, 34483), (357, 34477), (360, 34462), (363, 34435), (370, 34372), (371, 34366), (377, 34342), (402, 34237), (421, 34168), (426, 34150), (428, 34141), (432, 34120), (459, 34042), (465, 34006), (481, 33943),

Gene: HINdeR\_46 Start: 36239, Stop: 34212, Start Num: 49

Candidate Starts for HINdeR\_46:

(Start: 49 @36239 has 219 MA's), (Start: 88 @36053 has 3 MA's), (Start: 97 @36002 has 1 MA's), (100, 35984), (102, 35969), (118, 35912), (134, 35825), (141, 35792), (147, 35774), (165, 35663), (169, 35636), (179, 35558), (180, 35555), (182, 35546), (203, 35486), (209, 35453), (210, 35441), (212, 35423), (213, 35417), (214, 35414), (231, 35330), (232, 35327), (279, 35240), (280, 35237), (307, 35057), (311, 35036), (316, 35000), (322, 34973), (333, 34916), (352, 34826), (356, 34796), (360, 34775), (365, 34739), (375, 34661), (399, 34568), (403, 34556), (417, 34505), (429, 34460), (453, 34379), (455, 34376), (465, 34328),

Gene: Haizum\_49 Start: 32987, Stop: 35110, Start Num: 45

Candidate Starts for Haizum\_49:

(18, 32909), (30, 32951), (38, 32969), (Start: 45 @32987 has 304 MA's), (Start: 88 @33197 has 3 MA's), (90, 33203), (116, 33329), (118, 33338), (132, 33416), (134, 33425), (135, 33437), (141, 33458), (161, 33575), (169, 33617), (170, 33626), (179, 33695), (203, 33803), (208, 33833), (209,



33836), (212, 33866), (260, 34031), (279, 34067), (294, 34187), (311, 34277), (316, 34313), (323, 34340), (346, 34460), (357, 34523), (358, 34529), (360, 34538), (365, 34574), (371, 34634), (378, 34661), (384, 34673), (388, 34691), (392, 34727), (394, 34733), (404, 34778), (411, 34799), (421, 34832), (426, 34850), (432, 34880), (434, 34892), (446, 34925), (462, 34979), (478, 35048), (485, 35102),

Gene: HamSlice\_49 Start: 35446, Stop: 33413, Start Num: 49

Candidate Starts for HamSlice\_49:

(Start: 49 @35446 has 219 MA's), (68, 35383), (Start: 73 @35335 has 3 MA's), (78, 35311), (92, 35245), (Start: 97 @35209 has 1 MA's), (102, 35176), (116, 35128), (118, 35119), (127, 35062), (134, 35035), (141, 35002), (169, 34846), (170, 34837), (179, 34768), (203, 34696), (208, 34666), (209, 34663), (212, 34633), (213, 34627), (214, 34624), (232, 34537), (244, 34507), (255, 34495), (261, 34486), (279, 34438), (311, 34234), (329, 34132), (333, 34114), (360, 33973), (363, 33946), (392, 33802), (393, 33799), (399, 33769), (417, 33706), (426, 33673), (428, 33664), (432, 33643), (447, 33595), (465, 33529),

Gene: Hammer\_54 Start: 34784, Stop: 32730, Start Num: 45

Candidate Starts for Hammer\_54:

(Start: 45 @34784 has 304 MA's), (Start: 88 @34598 has 3 MA's), (Start: 97 @34547 has 1 MA's), (102, 34514), (116, 34466), (118, 34457), (127, 34397), (141, 34337), (153, 34280), (157, 34241), (165, 34208), (169, 34181), (170, 34172), (175, 34118), (179, 34103), (203, 34031), (208, 34001), (212, 33968), (213, 33962), (214, 33959), (232, 33872), (250, 33818), (270, 33785), (283, 33737), (290, 33695), (311, 33557), (331, 33443), (344, 33383), (346, 33374), (354, 33329), (357, 33311), (361, 33278), (378, 33176), (380, 33170), (393, 33116), (402, 33077), (417, 33023), (432, 32960), (440, 32930), (451, 32903), (461, 32864),

Gene: HangryHippo\_43 Start: 19641, Stop: 21584, Start Num: 64

Candidate Starts for HangryHippo\_43:

(Start: 53 @19596 has 2 MA's), (56, 19605), (Start: 64 @19641 has 64 MA's), (Start: 67 @19647 has 1 MA's), (83, 19749), (86, 19770), (90, 19779), (93, 19791), (106, 19869), (111, 19878), (112, 19887), (114, 19890), (133, 19995), (154, 20094), (198, 20304), (235, 20505), (248, 20517), (306, 20730), (324, 20835), (333, 20877), (336, 20895), (366, 21051), (390, 21159), (430, 21330), (438, 21369), (468, 21468),

Gene: Hank144\_50 Start: 33089, Stop: 35194, Start Num: 45

Candidate Starts for Hank144\_50:

(Start: 45 @33089 has 304 MA's), (79, 33245), (Start: 88 @33299 has 3 MA's), (90, 33305), (Start: 97 @33350 has 1 MA's), (116, 33431), (118, 33440), (133, 33524), (134, 33527), (135, 33539), (141, 33560), (144, 33569), (161, 33677), (169, 33719), (179, 33797), (190, 33842), (203, 33887), (212, 33950), (260, 34115), (269, 34124), (279, 34151), (311, 34361), (316, 34397), (329, 34463), (357, 34607), (358, 34613), (360, 34622), (365, 34658), (368, 34697), (371, 34718), (384, 34757), (389, 34787), (392, 34811), (421, 34916), (426, 34934), (434, 34976), (462, 35063), (478, 35132), (485, 35186),

Gene: Hanray\_49 Start: 35723, Stop: 33684, Start Num: 45

Candidate Starts for Hanray\_49:

(Start: 45 @35723 has 304 MA's), (Start: 73 @35609 has 3 MA's), (75, 35594), (78, 35585), (Start: 97 @35483 has 1 MA's), (118, 35393), (127, 35333), (128, 35330), (141, 35273), (168, 35126), (169, 35117), (179, 35039), (182, 35027), (203, 34973), (208, 34943), (210, 34928), (212, 34910), (213, 34904), (214, 34901), (272, 34736), (283, 34691), (311, 34511), (329, 34409), (344, 34337), (361, 34232), (363, 34223), (393, 34070), (399, 34040), (417, 33977), (432, 33914),

Gene: Happiness\_49 Start: 35467, Stop: 33416, Start Num: 49

Candidate Starts for Happiness\_49:

(Start: 49 @35467 has 219 MA's), (68, 35404), (Start: 73 @35356 has 3 MA's), (74, 35353), (92, 35266), (Start: 97 @35230 has 1 MA's), (102, 35197), (116, 35149), (118, 35140), (127, 35083), (134, 35056), (141, 35023), (146, 35008), (169, 34867), (170, 34858), (179, 34789), (203, 34717), (208, 34687), (209, 34684), (212, 34654), (213, 34648), (214, 34645), (260, 34492), (279, 34441), (311, 34237), (329, 34135), (333, 34117), (360, 33976), (363, 33949), (392, 33805), (393, 33802), (399, 33772), (417, 33709), (426, 33676), (428, 33667), (432, 33646), (447, 33598), (465, 33532),

Gene: Harlequin\_40 Start: 31858, Stop: 29813, Start Num: 45

Candidate Starts for Harlequin\_40:

(Start: 45 @31858 has 304 MA's), (74, 31738), (87, 31669), (Start: 97 @31615 has 1 MA's), (116, 31534), (118, 31525), (154, 31345), (156, 31312), (157, 31309), (159, 31300), (164, 31279), (169, 31249), (175, 31186), (179, 31171), (181, 31165), (203, 31105), (209, 31072), (212, 31042), (213, 31036), (214, 31033), (252, 30898), (301, 30703), (304, 30685), (310, 30652), (326, 30562), (328, 30553), (354, 30421), (363, 30361), (372, 30289), (385, 30250), (387, 30247), (388, 30235), (393, 30202), (402, 30163), (421, 30091), (428, 30064), (432, 30043), (436, 30025), (459, 29965), (465, 29929),

Gene: HarryHoudini\_52 Start: 36178, Stop: 34142, Start Num: 45

Candidate Starts for HarryHoudini\_52:

(1, 36427), (Start: 45 @36178 has 304 MA's), (61, 36139), (Start: 73 @36067 has 3 MA's), (Start: 88 @35992 has 3 MA's), (Start: 97 @35941 has 1 MA's), (102, 35908), (118, 35851), (127, 35791), (134, 35764), (141, 35731), (169, 35575), (179, 35497), (182, 35485), (198, 35443), (203, 35425), (208, 35395), (209, 35392), (210, 35380), (212, 35362), (213, 35356), (214, 35353), (272, 35194), (283, 35149), (290, 35107), (311, 34969), (316, 34933), (329, 34867), (331, 34855), (344, 34795), (354, 34741), (357, 34723), (365, 34672), (377, 34591), (380, 34582), (393, 34528), (399, 34498), (402, 34489), (417, 34435), (432, 34372), (447, 34324), (451, 34315),

Gene: HashRod\_55 Start: 35934, Stop: 33916, Start Num: 55

Candidate Starts for HashRod\_55:

(Start: 55 @35934 has 95 MA's), (Start: 71 @35841 has 1 MA's), (Start: 73 @35832 has 3 MA's), (78, 35808), (Start: 88 @35757 has 3 MA's), (Start: 97 @35706 has 1 MA's), (116, 35625), (118, 35616), (141, 35499), (157, 35403), (169, 35343), (176, 35274), (179, 35265), (180, 35262), (182, 35253), (203, 35193), (208, 35163), (209, 35160), (210, 35148), (212, 35130), (213, 35124), (214, 35121), (235, 35016), (239, 35010), (279, 34953), (311, 34749), (313, 34734), (316, 34713), (321, 34689), (326, 34662), (329, 34647), (356, 34509), (357, 34503), (360, 34488), (363, 34461), (370, 34398), (371, 34392), (377, 34368), (402, 34263), (411, 34227), (432, 34146), (459, 34068), (465, 34032), (481, 33969),

Gene: HaveUMetTed\_55 Start: 35781, Stop: 33766, Start Num: 55

Candidate Starts for HaveUMetTed\_55:

(Start: 55 @35781 has 95 MA's), (Start: 71 @35688 has 1 MA's), (Start: 73 @35679 has 3 MA's), (78, 35655), (Start: 88 @35604 has 3 MA's), (Start: 97 @35553 has 1 MA's), (116, 35472), (118, 35463), (127, 35406), (141, 35346), (154, 35286), (157, 35250), (169, 35190), (170, 35181), (179, 35112), (182, 35100), (203, 35040), (208, 35010), (209, 35007), (210, 34995), (212, 34977), (213, 34971), (214, 34968), (221, 34935), (253, 34833), (279, 34803), (304, 34632), (313, 34581), (316, 34560), (321, 34536), (329, 34494), (333, 34476), (343, 34428), (356, 34359), (357, 34353), (363, 34311), (370, 34248), (371, 34242), (377, 34218), (402, 34113), (421, 34044), (426, 34026), (428, 34017), (432, 33996), (459, 33918), (465, 33882), (481, 33819),

Gene: Heathen\_51 Start: 35430, Stop: 33370, Start Num: 49

Candidate Starts for Heathen\_51:

(Start: 49 @35430 has 219 MA's), (74, 35316), (92, 35229), (Start: 97 @35193 has 1 MA's), (102, 35160), (116, 35112), (118, 35103), (141, 34983), (165, 34854), (169, 34827), (170, 34818), (179, 34749), (185, 34728), (187, 34725), (203, 34683), (208, 34653), (209, 34650), (210, 34638), (212, 34620), (213, 34614), (214, 34611), (279, 34407), (311, 34203), (316, 34167), (321, 34143), (329, 34101), (333, 34083), (356, 33963), (357, 33957), (360, 33942), (363, 33915), (389, 33777), (403, 33714), (428, 33621), (432, 33600), (460, 33519), (465, 33486),

Gene: Heffalump\_50 Start: 36497, Stop: 34434, Start Num: 45

Candidate Starts for Heffalump\_50:

(Start: 45 @36497 has 304 MA's), (59, 36458), (Start: 73 @36383 has 3 MA's), (74, 36380), (Start: 88 @36308 has 3 MA's), (Start: 97 @36257 has 1 MA's), (100, 36239), (110, 36203), (118, 36167), (141, 36047), (157, 35951), (168, 35900), (169, 35891), (179, 35813), (203, 35741), (208, 35711), (209, 35708), (210, 35696), (212, 35678), (213, 35672), (214, 35669), (240, 35558), (272, 35486), (283, 35441), (290, 35399), (311, 35261), (316, 35225), (329, 35159), (331, 35147), (344, 35087), (354, 35033), (357, 35015), (393, 34820), (402, 34781), (403, 34778), (417, 34727), (419, 34721), (432, 34664), (440, 34634), (484, 34466),

Gene: HelDan\_51 Start: 35646, Stop: 33622, Start Num: 49

Candidate Starts for HelDan\_51:

(Start: 49 @35646 has 219 MA's), (74, 35532), (92, 35445), (Start: 97 @35409 has 1 MA's), (102, 35376), (116, 35328), (118, 35319), (141, 35199), (165, 35070), (169, 35043), (170, 35034), (179, 34965), (185, 34944), (187, 34941), (203, 34899), (208, 34869), (210, 34854), (212, 34836), (213, 34830), (214, 34827), (235, 34722), (239, 34716), (279, 34659), (286, 34620), (311, 34455), (316, 34419), (321, 34395), (329, 34353), (333, 34335), (356, 34215), (357, 34209), (360, 34194), (363, 34167), (365, 34158), (389, 34029), (403, 33966), (428, 33873), (432, 33852), (460, 33771), (465, 33738),

Gene: Heliosoles\_53 Start: 35799, Stop: 33784, Start Num: 55

Candidate Starts for Heliosoles\_53:

(Start: 55 @35799 has 95 MA's), (Start: 71 @35706 has 1 MA's), (Start: 73 @35697 has 3 MA's), (Start: 88 @35622 has 3 MA's), (Start: 97 @35571 has 1 MA's), (116, 35490), (118, 35481), (127, 35424), (141, 35364), (154, 35304), (157, 35268), (169, 35208), (170, 35199), (179, 35130), (182, 35118), (203, 35058), (208, 35028), (209, 35025), (210, 35013), (212, 34995), (213, 34989), (214, 34986), (221, 34953), (253, 34851), (279, 34821), (304, 34650), (310, 34617), (313, 34599), (316, 34578), (321, 34554), (329, 34512), (333, 34494), (343, 34446), (357, 34371), (363, 34329), (370, 34266), (371, 34260), (377, 34236), (402, 34131), (421, 34062), (426, 34044), (428, 34035), (432, 34014), (459, 33936), (465, 33900), (481, 33837),

Gene: Helmet\_56 Start: 35277, Stop: 33223, Start Num: 45

Candidate Starts for Helmet\_56:

(Start: 45 @35277 has 304 MA's), (Start: 88 @35091 has 3 MA's), (Start: 97 @35040 has 1 MA's), (102, 35007), (116, 34959), (118, 34950), (127, 34890), (141, 34830), (153, 34773), (157, 34734), (165, 34701), (169, 34674), (170, 34665), (175, 34611), (179, 34596), (203, 34524), (208, 34494), (212, 34461), (213, 34455), (214, 34452), (232, 34365), (250, 34311), (270, 34278), (283, 34230), (290, 34188), (311, 34050), (331, 33936), (344, 33876), (346, 33867), (354, 33822), (357, 33804), (361, 33771), (378, 33669), (380, 33663), (393, 33609), (398, 33582), (402, 33570), (417, 33516), (432, 33453), (440, 33423), (451, 33396), (461, 33357),

Gene: Herbertwm\_51 Start: 35623, Stop: 33575, Start Num: 45

Candidate Starts for Herbertwm\_51:

(32, 35656), (Start: 45 @35623 has 304 MA's), (Start: 88 @35440 has 3 MA's), (Start: 97 @35389 has 1 MA's), (102, 35356), (116, 35308), (118, 35299), (141, 35179), (157, 35083), (169, 35023), (179, 34945), (187, 34921), (194, 34897), (203, 34873), (208, 34843), (209, 34840), (212, 34810), (213,

34804), (214, 34801), (270, 34633), (272, 34630), (283, 34585), (290, 34543), (311, 34405), (321, 34345), (329, 34303), (356, 34165), (357, 34159), (365, 34108), (393, 33964), (394, 33961), (402, 33925), (411, 33886), (421, 33853), (428, 33826), (432, 33805),

Gene: Hercules11\_54 Start: 35915, Stop: 33897, Start Num: 55

Candidate Starts for Hercules11\_54:

(Start: 55 @35915 has 95 MA's), (Start: 71 @35822 has 1 MA's), (Start: 73 @35813 has 3 MA's), (78, 35789), (Start: 88 @35738 has 3 MA's), (Start: 97 @35687 has 1 MA's), (116, 35606), (118, 35597), (141, 35477), (154, 35417), (157, 35381), (169, 35321), (179, 35243), (203, 35171), (208, 35141), (212, 35108), (213, 35102), (214, 35099), (230, 35018), (239, 34988), (279, 34934), (304, 34763), (321, 34667), (329, 34625), (333, 34607), (343, 34559), (346, 34547), (356, 34490), (357, 34484), (360, 34469), (363, 34442), (370, 34379), (371, 34373), (377, 34349), (402, 34244), (421, 34175), (426, 34157), (428, 34148), (432, 34127), (459, 34049), (465, 34013), (481, 33950),

Gene: Hexamo\_54 Start: 34907, Stop: 32853, Start Num: 45

Candidate Starts for Hexamo\_54:

(Start: 45 @34907 has 304 MA's), (Start: 88 @34721 has 3 MA's), (Start: 97 @34670 has 1 MA's), (102, 34637), (116, 34589), (118, 34580), (127, 34520), (141, 34460), (153, 34403), (157, 34364), (165, 34331), (169, 34304), (170, 34295), (179, 34226), (203, 34154), (208, 34124), (212, 34091), (213, 34085), (214, 34082), (232, 33995), (250, 33941), (270, 33908), (283, 33860), (290, 33818), (311, 33680), (331, 33566), (344, 33506), (346, 33497), (354, 33452), (357, 33434), (361, 33401), (378, 33299), (380, 33293), (393, 33239), (398, 33212), (402, 33200), (417, 33146), (432, 33083), (440, 33053), (451, 33026), (461, 32987),

Gene: Hippo\_47 Start: 32005, Stop: 34095, Start Num: 45

Candidate Starts for Hippo\_47:

(27, 31963), (30, 31969), (Start: 45 @32005 has 304 MA's), (Start: 73 @32122 has 3 MA's), (79, 32161), (82, 32182), (Start: 88 @32215 has 3 MA's), (Start: 97 @32266 has 1 MA's), (116, 32347), (118, 32356), (132, 32434), (141, 32476), (154, 32536), (156, 32569), (161, 32593), (169, 32635), (170, 32644), (179, 32713), (180, 32716), (203, 32803), (212, 32866), (214, 32875), (225, 32926), (242, 32995), (275, 33040), (279, 33052), (297, 33184), (311, 33262), (313, 33277), (316, 33298), (326, 33349), (357, 33508), (358, 33514), (360, 33523), (365, 33559), (371, 33619), (378, 33646), (384, 33658), (385, 33661), (392, 33712), (394, 33718), (411, 33784), (421, 33817), (426, 33835), (432, 33865), (434, 33877), (443, 33904), (462, 33964), (479, 34036),

Gene: Hiro\_41 Start: 32334, Stop: 30289, Start Num: 45

Candidate Starts for Hiro\_41:

(Start: 45 @32334 has 304 MA's), (74, 32214), (87, 32145), (Start: 97 @32091 has 1 MA's), (116, 32010), (118, 32001), (127, 31941), (154, 31821), (156, 31788), (157, 31785), (159, 31776), (164, 31755), (169, 31725), (175, 31662), (179, 31647), (181, 31641), (203, 31581), (212, 31518), (213, 31512), (214, 31509), (252, 31374), (301, 31179), (304, 31161), (328, 31029), (354, 30897), (363, 30837), (372, 30765), (385, 30726), (387, 30723), (388, 30711), (393, 30678), (402, 30639), (419, 30576), (421, 30567), (428, 30540), (432, 30519), (459, 30441), (465, 30405),

Gene: Horex\_50 Start: 35739, Stop: 33700, Start Num: 45

Candidate Starts for Horex\_50:

(Start: 45 @35739 has 304 MA's), (Start: 73 @35625 has 3 MA's), (75, 35610), (78, 35601), (Start: 97 @35499 has 1 MA's), (118, 35409), (127, 35349), (128, 35346), (141, 35289), (168, 35142), (169, 35133), (179, 35055), (182, 35043), (203, 34989), (208, 34959), (210, 34944), (212, 34926), (213, 34920), (214, 34917), (272, 34752), (283, 34707), (311, 34527), (329, 34425), (344, 34353), (361, 34248), (363, 34239), (393, 34086), (399, 34056), (417, 33993), (432, 33930),

Gene: Holli\_49 Start: 35238, Stop: 33205, Start Num: 49

Candidate Starts for Holli\_49:

(Start: 49 @35238 has 219 MA's), (68, 35175), (Start: 73 @35127 has 3 MA's), (78, 35103), (92, 35037), (Start: 97 @35001 has 1 MA's), (102, 34968), (116, 34920), (118, 34911), (127, 34854), (134, 34827), (141, 34794), (169, 34638), (170, 34629), (179, 34560), (203, 34488), (208, 34458), (209, 34455), (212, 34425), (213, 34419), (214, 34416), (232, 34329), (241, 34305), (244, 34299), (255, 34287), (261, 34278), (279, 34230), (311, 34026), (329, 33924), (333, 33906), (360, 33765), (363, 33738), (392, 33594), (393, 33591), (399, 33561), (417, 33498), (426, 33465), (428, 33456), (432, 33435), (447, 33387), (465, 33321),

Gene: Hookmount\_50 Start: 35711, Stop: 33693, Start Num: 55

Candidate Starts for Hookmount\_50:

(Start: 55 @35711 has 95 MA's), (Start: 71 @35618 has 1 MA's), (Start: 73 @35609 has 3 MA's), (77, 35588), (92, 35519), (Start: 97 @35483 has 1 MA's), (102, 35450), (116, 35402), (118, 35393), (141, 35276), (157, 35180), (169, 35120), (176, 35051), (179, 35042), (182, 35030), (203, 34970), (208, 34940), (209, 34937), (210, 34925), (212, 34907), (213, 34901), (214, 34898), (235, 34793), (239, 34787), (279, 34730), (311, 34526), (321, 34466), (329, 34424), (333, 34406), (346, 34343), (357, 34280), (360, 34265), (363, 34238), (372, 34166), (393, 34079), (403, 34037), (428, 33944), (432, 33923), (465, 33809),

Gene: Hoot\_48 Start: 32665, Stop: 30641, Start Num: 45

Candidate Starts for Hoot\_48:

(32, 32698), (Start: 45 @32665 has 304 MA's), (Start: 88 @32479 has 3 MA's), (102, 32395), (116, 32347), (118, 32338), (127, 32278), (141, 32218), (153, 32161), (157, 32122), (165, 32089), (169, 32062), (170, 32053), (175, 31999), (179, 31984), (203, 31912), (208, 31882), (212, 31849), (213, 31843), (214, 31840), (283, 31648), (307, 31489), (311, 31468), (331, 31354), (344, 31294), (346, 31285), (354, 31240), (357, 31222), (361, 31189), (378, 31087), (380, 31081), (393, 31027), (398, 31000), (399, 30997), (402, 30988), (417, 30934), (432, 30871), (440, 30841), (451, 30814),

Gene: HortumSL17\_51 Start: 35670, Stop: 33631, Start Num: 45

Candidate Starts for HortumSL17\_51:

(Start: 45 @35670 has 304 MA's), (Start: 73 @35556 has 3 MA's), (75, 35541), (78, 35532), (Start: 97 @35430 has 1 MA's), (118, 35340), (127, 35280), (141, 35220), (168, 35073), (169, 35064), (179, 34986), (182, 34974), (202, 34929), (203, 34920), (208, 34890), (210, 34875), (212, 34857), (213, 34851), (214, 34848), (272, 34683), (280, 34659), (283, 34638), (311, 34458), (331, 34344), (344, 34284), (361, 34179), (363, 34170), (393, 34017), (399, 33987), (417, 33924), (432, 33861),

Gene: Houdini22\_50 Start: 35452, Stop: 33419, Start Num: 49

Candidate Starts for Houdini22\_50:

(Start: 49 @35452 has 219 MA's), (68, 35389), (Start: 73 @35341 has 3 MA's), (78, 35317), (92, 35251), (Start: 97 @35215 has 1 MA's), (102, 35182), (116, 35134), (118, 35125), (127, 35068), (134, 35041), (141, 35008), (169, 34852), (170, 34843), (179, 34774), (203, 34702), (208, 34672), (209, 34669), (212, 34639), (213, 34633), (214, 34630), (232, 34543), (244, 34513), (255, 34501), (261, 34492), (279, 34444), (311, 34240), (329, 34138), (333, 34120), (360, 33979), (363, 33952), (392, 33808), (393, 33805), (399, 33775), (417, 33712), (426, 33679), (428, 33670), (432, 33649), (447, 33601), (465, 33535),

Gene: HuhtaEnerson15\_44 Start: 34653, Stop: 32563, Start Num: 49

Candidate Starts for HuhtaEnerson15\_44:

(Start: 49 @34653 has 219 MA's), (Start: 88 @34467 has 3 MA's), (Start: 97 @34416 has 1 MA's), (116, 34335), (118, 34326), (141, 34206), (146, 34191), (164, 34080), (165, 34077), (169, 34050), (170, 34041), (176, 33981), (179, 33972), (182, 33960), (203, 33861), (208, 33831), (209, 33828), (212, 33798), (213, 33792), (214, 33789), (239, 33678), (283, 33576), (286, 33561), (308, 33414), (313, 33381), (322, 33333), (329, 33294), (343, 33225), (354, 33168), (356, 33156), (357, 33150),

(363, 33108), (365, 33099), (372, 33036), (394, 32946), (399, 32919), (410, 32877), (421, 32841), (426, 32823), (428, 32814), (482, 32604),

Gene: Hutc2\_51 Start: 34847, Stop: 32826, Start Num: 50

Candidate Starts for Hutc2\_51:

(28, 34898), (41, 34865), (Start: 50 @34847 has 19 MA's), (Start: 73 @34739 has 3 MA's), (Start: 88 @34664 has 3 MA's), (116, 34532), (118, 34523), (141, 34403), (169, 34247), (174, 34199), (178, 34172), (179, 34169), (182, 34157), (197, 34124), (203, 34103), (210, 34058), (212, 34040), (213, 34034), (214, 34031), (250, 33911), (283, 33836), (286, 33821), (290, 33794), (311, 33656), (321, 33596), (329, 33554), (333, 33536), (347, 33464), (357, 33410), (360, 33395), (361, 33377), (377, 33278), (393, 33215), (402, 33176), (426, 33086), (432, 33056), (447, 33008),

Gene: Huxley\_50 Start: 35509, Stop: 33476, Start Num: 49

Candidate Starts for Huxley\_50:

(Start: 49 @35509 has 219 MA's), (68, 35446), (Start: 73 @35398 has 3 MA's), (78, 35374), (92, 35308), (Start: 97 @35272 has 1 MA's), (102, 35239), (116, 35191), (118, 35182), (127, 35125), (141, 35065), (169, 34909), (170, 34900), (179, 34831), (203, 34759), (208, 34729), (209, 34726), (212, 34696), (213, 34690), (214, 34687), (232, 34600), (244, 34570), (255, 34558), (261, 34549), (279, 34501), (311, 34297), (329, 34195), (333, 34177), (360, 34036), (363, 34009), (392, 33865), (393, 33862), (399, 33832), (417, 33769), (426, 33736), (428, 33727), (432, 33706), (447, 33658), (465, 33592),

Gene: Hydra\_48 Start: 32319, Stop: 34409, Start Num: 45

Candidate Starts for Hydra\_48:

(Start: 45 @32319 has 304 MA's), (78, 32460), (79, 32475), (82, 32496), (Start: 88 @32529 has 3 MA's), (90, 32535), (Start: 97 @32580 has 1 MA's), (116, 32661), (118, 32670), (132, 32748), (134, 32757), (141, 32790), (156, 32883), (161, 32907), (169, 32949), (179, 33027), (180, 33030), (203, 33117), (212, 33180), (214, 33189), (275, 33354), (279, 33366), (297, 33498), (302, 33525), (311, 33576), (313, 33591), (316, 33612), (329, 33678), (357, 33822), (358, 33828), (360, 33837), (365, 33873), (369, 33921), (371, 33933), (378, 33960), (384, 33972), (392, 34026), (404, 34077), (411, 34098), (421, 34131), (426, 34149), (432, 34179), (434, 34191), (443, 34218), (462, 34278), (478, 34347), (479, 34350), (485, 34401),

Gene: ICleared\_50 Start: 35477, Stop: 33444, Start Num: 49

Candidate Starts for ICleared\_50:

(Start: 49 @35477 has 219 MA's), (68, 35414), (Start: 73 @35366 has 3 MA's), (78, 35342), (92, 35276), (Start: 97 @35240 has 1 MA's), (102, 35207), (116, 35159), (118, 35150), (127, 35093), (134, 35066), (141, 35033), (169, 34877), (170, 34868), (179, 34799), (203, 34727), (208, 34697), (209, 34694), (212, 34664), (213, 34658), (214, 34655), (232, 34568), (244, 34538), (255, 34526), (261, 34517), (279, 34469), (311, 34265), (329, 34163), (333, 34145), (360, 34004), (363, 33977), (392, 33833), (393, 33830), (399, 33800), (417, 33737), (426, 33704), (428, 33695), (432, 33674), (447, 33626), (465, 33560),

Gene: Ibantik\_27 Start: 14042, Stop: 11976, Start Num: 54

Candidate Starts for Ibantik\_27:

(Start: 54 @14042 has 3 MA's), (61, 14009), (77, 13916), (119, 13706), (141, 13601), (142, 13598), (154, 13541), (169, 13445), (179, 13367), (180, 13364), (187, 13343), (203, 13280), (209, 13247), (212, 13217), (214, 13208), (232, 13124), (270, 13031), (279, 13007), (283, 12983), (297, 12875), (316, 12767), (342, 12641), (345, 12626), (348, 12608), (359, 12545), (363, 12515), (378, 12416), (388, 12386), (394, 12350), (421, 12263), (432, 12215), (461, 12119), (464, 12107), (470, 12077), (480, 12029), (485, 11981),

Gene: Iceman\_50 Start: 35734, Stop: 33701, Start Num: 49

Candidate Starts for Iceman\_50:

(Start: 49 @35734 has 219 MA's), (68, 35671), (Start: 73 @35623 has 3 MA's), (78, 35599), (92, 35533), (Start: 97 @35497 has 1 MA's), (102, 35464), (116, 35416), (118, 35407), (127, 35350), (134, 35323), (141, 35290), (169, 35134), (170, 35125), (179, 35056), (203, 34984), (208, 34954), (209, 34951), (212, 34921), (213, 34915), (214, 34912), (232, 34825), (244, 34795), (255, 34783), (261, 34774), (279, 34726), (311, 34522), (329, 34420), (333, 34402), (360, 34261), (363, 34234), (392, 34090), (393, 34087), (399, 34057), (417, 33994), (426, 33961), (428, 33952), (432, 33931), (447, 33883), (465, 33817),

Gene: IchabodCrane\_42 Start: 19236, Stop: 21176, Start Num: 64

Candidate Starts for IchabodCrane\_42:

(Start: 64 @19236 has 64 MA's), (90, 19368), (96, 19404), (102, 19440), (111, 19467), (114, 19479), (133, 19584), (148, 19641), (185, 19866), (217, 20004), (228, 20055), (235, 20094), (248, 20106), (285, 20184), (297, 20283), (306, 20319), (333, 20466), (366, 20640), (389, 20745), (390, 20748), (430, 20919), (468, 21057),

Gene: Idleandcovert\_52 Start: 35769, Stop: 33748, Start Num: 49

Candidate Starts for Idleandcovert\_52:

(Start: 49 @35769 has 219 MA's), (74, 35655), (92, 35568), (Start: 97 @35532 has 1 MA's), (116, 35451), (118, 35442), (126, 35385), (141, 35322), (169, 35166), (179, 35088), (185, 35067), (187, 35064), (203, 35022), (208, 34992), (210, 34977), (212, 34959), (213, 34953), (214, 34950), (221, 34917), (279, 34785), (311, 34581), (316, 34545), (321, 34521), (329, 34479), (333, 34461), (356, 34341), (357, 34335), (360, 34320), (363, 34293), (389, 34155), (403, 34092), (428, 33999), (432, 33978), (460, 33897), (465, 33864),

Gene: Indigo\_46 Start: 31663, Stop: 33753, Start Num: 45

Candidate Starts for Indigo\_46:

(Start: 45 @31663 has 304 MA's), (78, 31804), (79, 31819), (82, 31840), (Start: 88 @31873 has 3 MA's), (90, 31879), (Start: 97 @31924 has 1 MA's), (116, 32005), (118, 32014), (132, 32092), (134, 32101), (141, 32134), (156, 32227), (161, 32251), (169, 32293), (179, 32371), (180, 32374), (203, 32461), (212, 32524), (214, 32533), (275, 32698), (279, 32710), (297, 32842), (302, 32869), (311, 32920), (313, 32935), (316, 32956), (329, 33022), (357, 33166), (358, 33172), (360, 33181), (365, 33217), (369, 33265), (371, 33277), (378, 33304), (384, 33316), (392, 33370), (404, 33421), (411, 33442), (421, 33475), (426, 33493), (432, 33523), (434, 33535), (443, 33562), (462, 33622), (478, 33691), (479, 33694), (485, 33745),

Gene: Indra\_57 Start: 35278, Stop: 33224, Start Num: 45

Candidate Starts for Indra\_57:

(Start: 45 @35278 has 304 MA's), (Start: 88 @35092 has 3 MA's), (Start: 97 @35041 has 1 MA's), (102, 35008), (116, 34960), (118, 34951), (127, 34891), (141, 34831), (153, 34774), (157, 34735), (165, 34702), (169, 34675), (170, 34666), (175, 34612), (179, 34597), (203, 34525), (208, 34495), (212, 34462), (213, 34456), (214, 34453), (232, 34366), (250, 34312), (270, 34279), (283, 34231), (290, 34189), (311, 34051), (331, 33937), (344, 33877), (346, 33868), (354, 33823), (357, 33805), (361, 33772), (378, 33670), (380, 33664), (393, 33610), (398, 33583), (402, 33571), (417, 33517), (432, 33454), (440, 33424), (451, 33397), (461, 33358),

Gene: Insomnia\_52 Start: 35250, Stop: 33337, Start Num: 73

Candidate Starts for Insomnia\_52:

(28, 35409), (41, 35376), (Start: 50 @35358 has 19 MA's), (Start: 73 @35250 has 3 MA's), (Start: 88 @35175 has 3 MA's), (116, 35043), (118, 35034), (141, 34914), (169, 34758), (174, 34710), (178, 34683), (179, 34680), (182, 34668), (197, 34635), (203, 34614), (210, 34569), (212, 34551), (213, 34545), (214, 34542), (250, 34422), (283, 34347), (286, 34332), (311, 34167), (321, 34107), (329, 34065), (333, 34047), (347, 33975), (357, 33921), (360, 33906), (361, 33888), (377, 33789), (393,

33726), (402, 33687), (426, 33597), (432, 33567), (447, 33519),

Gene: Iracema64\_51 Start: 35712, Stop: 33679, Start Num: 49

Candidate Starts for Iracema64\_51:

(Start: 49 @35712 has 219 MA's), (68, 35649), (Start: 73 @35601 has 3 MA's), (78, 35577), (92, 35511), (Start: 97 @35475 has 1 MA's), (102, 35442), (116, 35394), (118, 35385), (127, 35328), (134, 35301), (141, 35268), (169, 35112), (170, 35103), (179, 35034), (203, 34962), (208, 34932), (209, 34929), (212, 34899), (213, 34893), (214, 34890), (232, 34803), (244, 34773), (255, 34761), (261, 34752), (279, 34704), (311, 34500), (329, 34398), (333, 34380), (360, 34239), (363, 34212), (392, 34068), (393, 34065), (399, 34035), (417, 33972), (426, 33939), (428, 33930), (432, 33909), (447, 33861), (465, 33795),

Gene: IronMan\_51 Start: 36856, Stop: 34826, Start Num: 45

Candidate Starts for IronMan\_51:

(Start: 45 @36856 has 304 MA's), (74, 36742), (118, 36529), (119, 36514), (141, 36409), (169, 36253), (170, 36244), (179, 36175), (203, 36103), (208, 36073), (209, 36070), (210, 36058), (212, 36040), (213, 36034), (214, 36031), (232, 35944), (270, 35875), (283, 35827), (290, 35785), (311, 35647), (316, 35611), (329, 35545), (331, 35533), (344, 35473), (354, 35419), (357, 35401), (377, 35269), (378, 35266), (380, 35260), (388, 35239), (393, 35206), (417, 35119), (432, 35056), (447, 35008), (451, 34999),

Gene: Isca\_50 Start: 35212, Stop: 33191, Start Num: 49

Candidate Starts for Isca\_50:

(Start: 49 @35212 has 219 MA's), (Start: 73 @35101 has 3 MA's), (74, 35098), (92, 35011), (Start: 97 @34975 has 1 MA's), (102, 34942), (116, 34894), (118, 34885), (141, 34765), (146, 34750), (165, 34636), (169, 34609), (170, 34600), (179, 34531), (185, 34510), (187, 34507), (203, 34465), (210, 34420), (212, 34402), (213, 34396), (214, 34393), (279, 34228), (311, 34024), (321, 33964), (329, 33922), (333, 33904), (356, 33784), (357, 33778), (360, 33763), (372, 33664), (392, 33580), (399, 33547), (403, 33535), (418, 33481), (428, 33442), (432, 33421), (465, 33307),

Gene: Isiphiwo\_51 Start: 34390, Stop: 32330, Start Num: 45

Candidate Starts for Isiphiwo\_51:

(32, 34423), (Start: 45 @34390 has 304 MA's), (Start: 88 @34204 has 3 MA's), (102, 34120), (116, 34072), (118, 34063), (127, 34003), (141, 33943), (153, 33886), (157, 33847), (165, 33814), (169, 33787), (170, 33778), (175, 33724), (179, 33709), (187, 33685), (202, 33646), (203, 33637), (208, 33607), (212, 33574), (213, 33568), (214, 33565), (272, 33382), (283, 33337), (286, 33322), (311, 33157), (331, 33043), (344, 32983), (346, 32974), (354, 32929), (357, 32911), (361, 32878), (378, 32776), (380, 32770), (393, 32716), (402, 32677), (404, 32668), (417, 32623), (432, 32560), (440, 32530), (451, 32503),

Gene: Issmi\_49 Start: 33474, Stop: 35540, Start Num: 45

Candidate Starts for Issmi\_49:

(21, 33405), (33, 33444), (Start: 45 @33474 has 304 MA's), (79, 33630), (Start: 88 @33684 has 3 MA's), (90, 33690), (116, 33816), (118, 33825), (132, 33903), (134, 33912), (135, 33924), (141, 33945), (161, 34062), (168, 34095), (169, 34104), (170, 34113), (179, 34182), (180, 34185), (203, 34248), (205, 34254), (208, 34278), (209, 34281), (212, 34311), (279, 34497), (307, 34686), (311, 34707), (316, 34743), (323, 34770), (329, 34809), (355, 34941), (357, 34953), (363, 34995), (371, 35064), (384, 35103), (392, 35157), (393, 35160), (411, 35229), (421, 35262), (424, 35271), (426, 35280), (432, 35310), (462, 35409), (478, 35478), (485, 35532),

Gene: Iwokeuplikedis\_54 Start: 35807, Stop: 33771, Start Num: 45

Candidate Starts for Iwokeuplikedis\_54:



(Start: 45 @35807 has 304 MA's), (Start: 73 @35696 has 3 MA's), (74, 35693), (118, 35480), (119, 35465), (127, 35420), (141, 35360), (169, 35204), (179, 35126), (198, 35072), (203, 35054), (208, 35024), (209, 35021), (212, 34991), (213, 34985), (214, 34982), (272, 34823), (283, 34778), (290, 34736), (311, 34598), (316, 34562), (329, 34496), (331, 34484), (344, 34424), (354, 34370), (357, 34352), (377, 34220), (380, 34211), (393, 34157), (402, 34118), (417, 34064), (422, 34046), (432, 34001), (447, 33953), (451, 33944),

Gene: Izzy\_48 Start: 32007, Stop: 34097, Start Num: 45

Candidate Starts for Izzy\_48:

(14, 31923), (16, 31929), (27, 31965), (30, 31971), (Start: 45 @32007 has 304 MA's), (78, 32148), (79, 32163), (82, 32184), (Start: 88 @32217 has 3 MA's), (90, 32223), (Start: 97 @32268 has 1 MA's), (116, 32349), (118, 32358), (132, 32436), (134, 32445), (141, 32478), (156, 32571), (161, 32595), (169, 32637), (179, 32715), (180, 32718), (203, 32805), (212, 32868), (214, 32877), (275, 33042), (279, 33054), (302, 33213), (311, 33264), (313, 33279), (316, 33300), (329, 33366), (357, 33510), (358, 33516), (360, 33525), (365, 33561), (369, 33609), (371, 33621), (378, 33648), (384, 33660), (392, 33714), (404, 33765), (411, 33786), (421, 33819), (426, 33837), (432, 33867), (434, 33879), (443, 33906), (462, 33966), (478, 34035), (479, 34038), (485, 34089),

Gene: JF2\_49 Start: 33913, Stop: 31892, Start Num: 49

Candidate Starts for JF2\_49:

(Start: 49 @33913 has 219 MA's), (Start: 73 @33802 has 3 MA's), (74, 33799), (92, 33712), (Start: 97 @33676 has 1 MA's), (102, 33643), (116, 33595), (118, 33586), (141, 33466), (146, 33451), (165, 33337), (169, 33310), (170, 33301), (179, 33232), (185, 33211), (187, 33208), (203, 33166), (208, 33136), (210, 33121), (212, 33103), (213, 33097), (214, 33094), (279, 32929), (311, 32725), (321, 32665), (329, 32623), (333, 32605), (356, 32485), (357, 32479), (360, 32464), (372, 32365), (392, 32281), (399, 32248), (403, 32236), (418, 32182), (428, 32143), (432, 32122), (465, 32008),

Gene: JF4\_49 Start: 33913, Stop: 31892, Start Num: 49

Candidate Starts for JF4\_49:

(Start: 49 @33913 has 219 MA's), (Start: 73 @33802 has 3 MA's), (74, 33799), (92, 33712), (Start: 97 @33676 has 1 MA's), (102, 33643), (116, 33595), (118, 33586), (141, 33466), (146, 33451), (165, 33337), (169, 33310), (170, 33301), (179, 33232), (185, 33211), (187, 33208), (203, 33166), (208, 33136), (210, 33121), (212, 33103), (213, 33097), (214, 33094), (279, 32929), (311, 32725), (321, 32665), (329, 32623), (333, 32605), (356, 32485), (357, 32479), (360, 32464), (372, 32365), (392, 32281), (399, 32248), (403, 32236), (418, 32182), (428, 32143), (432, 32122), (465, 32008),

Gene: JHC117\_54 Start: 35905, Stop: 33887, Start Num: 55

Candidate Starts for JHC117\_54:

(Start: 55 @35905 has 95 MA's), (Start: 71 @35812 has 1 MA's), (Start: 73 @35803 has 3 MA's), (78, 35779), (Start: 88 @35728 has 3 MA's), (Start: 97 @35677 has 1 MA's), (116, 35596), (118, 35587), (141, 35467), (154, 35407), (157, 35371), (169, 35311), (179, 35233), (203, 35161), (208, 35131), (212, 35098), (213, 35092), (214, 35089), (230, 35008), (239, 34978), (279, 34924), (304, 34753), (321, 34657), (329, 34615), (333, 34597), (343, 34549), (346, 34537), (356, 34480), (357, 34474), (360, 34459), (363, 34432), (370, 34369), (371, 34363), (377, 34339), (402, 34234), (421, 34165), (426, 34147), (428, 34138), (432, 34117), (459, 34039), (465, 34003), (481, 33940),

Gene: JSwag\_55 Start: 34643, Stop: 32580, Start Num: 40

Candidate Starts for JSwag\_55:

(Start: 40 @34643 has 21 MA's), (87, 34448), (Start: 88 @34445 has 3 MA's), (116, 34313), (118, 34304), (141, 34184), (170, 34019), (174, 33980), (179, 33950), (194, 33908), (203, 33884), (208, 33854), (212, 33821), (213, 33815), (214, 33812), (270, 33638), (275, 33626), (283, 33590), (310, 33413), (311, 33410), (316, 33374), (329, 33308), (337, 33269), (339, 33257), (356, 33170), (357, 33164), (363, 33122), (411, 32891), (432, 32810), (452, 32750), (459, 32732), (479, 32639), (482,

32621),

Gene: Jaan\_51 Start: 37028, Stop: 34998, Start Num: 45

Candidate Starts for Jaan\_51:

(Start: 45 @37028 has 304 MA's), (74, 36914), (118, 36701), (119, 36686), (141, 36581), (169, 36425), (170, 36416), (179, 36347), (194, 36299), (203, 36275), (208, 36245), (209, 36242), (210, 36230), (212, 36212), (213, 36206), (214, 36203), (232, 36116), (270, 36047), (283, 35999), (290, 35957), (311, 35819), (316, 35783), (329, 35717), (331, 35705), (344, 35645), (354, 35591), (357, 35573), (377, 35441), (378, 35438), (380, 35432), (388, 35411), (393, 35378), (398, 35351), (417, 35291), (432, 35228), (447, 35180), (451, 35171),

Gene: Jabiru\_44 Start: 34204, Stop: 32168, Start Num: 49

Candidate Starts for Jabiru\_44:

(17, 34270), (Start: 49 @34204 has 219 MA's), (Start: 88 @34021 has 3 MA's), (Start: 97 @33970 has 1 MA's), (102, 33937), (116, 33889), (118, 33880), (123, 33838), (147, 33742), (153, 33703), (158, 33658), (168, 33613), (169, 33604), (175, 33541), (176, 33535), (179, 33526), (203, 33454), (208, 33424), (209, 33421), (210, 33409), (212, 33391), (213, 33385), (214, 33382), (272, 33226), (283, 33181), (286, 33166), (308, 33019), (313, 32986), (322, 32938), (329, 32899), (343, 32830), (354, 32773), (356, 32761), (357, 32755), (363, 32713), (365, 32704), (372, 32641), (394, 32551), (399, 32524), (410, 32482), (421, 32446), (426, 32428), (428, 32419), (482, 32209),

Gene: Jabith\_52 Start: 35359, Stop: 33338, Start Num: 50

Candidate Starts for Jabith\_52:

(28, 35410), (41, 35377), (Start: 50 @35359 has 19 MA's), (Start: 73 @35251 has 3 MA's), (Start: 88 @35176 has 3 MA's), (116, 35044), (118, 35035), (141, 34915), (169, 34759), (174, 34711), (178, 34684), (179, 34681), (182, 34669), (197, 34636), (203, 34615), (210, 34570), (212, 34552), (213, 34546), (214, 34543), (250, 34423), (283, 34348), (286, 34333), (311, 34168), (321, 34108), (329, 34066), (333, 34048), (347, 33976), (357, 33922), (360, 33907), (361, 33889), (377, 33790), (393, 33727), (402, 33688), (426, 33598), (432, 33568), (447, 33520),

Gene: Jada\_22 Start: 8021, Stop: 9964, Start Num: 65

Candidate Starts for Jada\_22:

(62, 8012), (Start: 65 @8021 has 26 MA's), (Start: 73 @8078 has 3 MA's), (90, 8159), (111, 8258), (112, 8267), (114, 8270), (133, 8375), (163, 8525), (169, 8555), (198, 8681), (244, 8888), (304, 9101), (314, 9155), (327, 9227), (332, 9251), (351, 9323), (389, 9533), (390, 9536), (409, 9632), (413, 9641), (473, 9869),

Gene: Janus\_48 Start: 32877, Stop: 35000, Start Num: 45

Candidate Starts for Janus\_48:

(Start: 45 @32877 has 304 MA's), (79, 33033), (Start: 88 @33087 has 3 MA's), (90, 33093), (Start: 97 @33138 has 1 MA's), (116, 33219), (118, 33228), (134, 33315), (135, 33327), (141, 33348), (161, 33465), (169, 33507), (179, 33585), (190, 33642), (203, 33693), (212, 33756), (273, 33939), (279, 33957), (311, 34167), (316, 34203), (329, 34269), (357, 34413), (358, 34419), (360, 34428), (365, 34464), (369, 34512), (371, 34524), (378, 34551), (384, 34563), (389, 34593), (392, 34617), (421, 34722), (426, 34740), (462, 34869), (478, 34938), (485, 34992),

Gene: Jash\_48 Start: 31960, Stop: 34050, Start Num: 45

Candidate Starts for Jash\_48:

(14, 31876), (16, 31882), (27, 31918), (30, 31924), (Start: 45 @31960 has 304 MA's), (78, 32101), (79, 32116), (82, 32137), (Start: 88 @32170 has 3 MA's), (90, 32176), (Start: 97 @32221 has 1 MA's), (116, 32302), (118, 32311), (132, 32389), (134, 32398), (141, 32431), (156, 32524), (161, 32548), (169, 32590), (179, 32668), (180, 32671), (203, 32758), (212, 32821), (214, 32830), (275, 32995), (279, 33007), (302, 33166), (311, 33217), (313, 33232), (316, 33253), (329, 33319), (357, 33463),

(358, 33469), (360, 33478), (365, 33514), (369, 33562), (371, 33574), (378, 33601), (384, 33613), (392, 33667), (404, 33718), (411, 33739), (421, 33772), (426, 33790), (432, 33820), (434, 33832), (443, 33859), (462, 33919), (478, 33988), (479, 33991), (485, 34042),

Gene: Jay2Jay\_47 Start: 19956, Stop: 21899, Start Num: 64

Candidate Starts for Jay2Jay\_47:

(Start: 64 @19956 has 64 MA's), (Start: 67 @19962 has 1 MA's), (83, 20064), (86, 20085), (90, 20094), (106, 20184), (111, 20193), (112, 20202), (114, 20205), (133, 20310), (159, 20454), (198, 20619), (217, 20730), (235, 20820), (248, 20832), (306, 21045), (333, 21192), (336, 21210), (364, 21348), (366, 21366), (390, 21474), (430, 21645), (438, 21684), (468, 21783),

Gene: Jaykayelowell\_48 Start: 35441, Stop: 33408, Start Num: 49

Candidate Starts for Jaykayelowell\_48:

(Start: 49 @35441 has 219 MA's), (68, 35378), (Start: 73 @35330 has 3 MA's), (78, 35306), (92, 35240), (Start: 97 @35204 has 1 MA's), (102, 35171), (116, 35123), (118, 35114), (127, 35057), (134, 35030), (141, 34997), (169, 34841), (170, 34832), (179, 34763), (203, 34691), (208, 34661), (209, 34658), (212, 34628), (213, 34622), (214, 34619), (232, 34532), (244, 34502), (255, 34490), (261, 34481), (279, 34433), (311, 34229), (329, 34127), (333, 34109), (360, 33968), (363, 33941), (392, 33797), (393, 33794), (399, 33764), (417, 33701), (426, 33668), (428, 33659), (432, 33638), (447, 33590), (465, 33524),

Gene: Jeeves\_55 Start: 35543, Stop: 33504, Start Num: 45

Candidate Starts for Jeeves\_55:

(Start: 45 @35543 has 304 MA's), (102, 35270), (116, 35222), (118, 35213), (127, 35153), (128, 35150), (141, 35093), (169, 34937), (178, 34862), (179, 34859), (203, 34793), (208, 34763), (209, 34760), (212, 34730), (213, 34724), (214, 34721), (217, 34700), (272, 34556), (283, 34511), (287, 34487), (290, 34469), (311, 34331), (321, 34271), (331, 34217), (344, 34157), (346, 34148), (357, 34085), (361, 34052), (393, 33890), (398, 33863), (402, 33851), (410, 33818), (417, 33797), (432, 33734), (447, 33686), (484, 33536),

Gene: Jeffabunny\_54 Start: 34904, Stop: 32880, Start Num: 45

Candidate Starts for Jeffabunny\_54:

(Start: 45 @34904 has 304 MA's), (Start: 88 @34718 has 3 MA's), (Start: 97 @34667 has 1 MA's), (102, 34634), (116, 34586), (118, 34577), (127, 34517), (141, 34457), (153, 34400), (157, 34361), (165, 34328), (169, 34301), (170, 34292), (179, 34223), (203, 34151), (208, 34121), (212, 34088), (213, 34082), (214, 34079), (283, 33887), (311, 33707), (331, 33593), (344, 33533), (346, 33524), (354, 33479), (357, 33461), (361, 33428), (378, 33326), (380, 33320), (393, 33266), (398, 33239), (402, 33227), (417, 33173), (432, 33110), (440, 33080), (451, 33053), (461, 33014),

Gene: JenCasNa\_55 Start: 35906, Stop: 33888, Start Num: 55

Candidate Starts for JenCasNa\_55:

(Start: 55 @35906 has 95 MA's), (Start: 71 @35813 has 1 MA's), (Start: 73 @35804 has 3 MA's), (78, 35780), (Start: 88 @35729 has 3 MA's), (Start: 97 @35678 has 1 MA's), (116, 35597), (118, 35588), (141, 35468), (154, 35408), (157, 35372), (169, 35312), (179, 35234), (203, 35162), (208, 35132), (212, 35099), (213, 35093), (214, 35090), (230, 35009), (239, 34979), (279, 34925), (304, 34754), (321, 34658), (329, 34616), (333, 34598), (343, 34550), (346, 34538), (356, 34481), (357, 34475), (360, 34460), (363, 34433), (370, 34370), (371, 34364), (377, 34340), (402, 34235), (421, 34166), (426, 34148), (432, 34118), (459, 34040), (465, 34004), (481, 33941),

Gene: JeppNRM\_55 Start: 35797, Stop: 33782, Start Num: 55

Candidate Starts for JeppNRM\_55:

(Start: 55 @35797 has 95 MA's), (Start: 71 @35704 has 1 MA's), (Start: 73 @35695 has 3 MA's), (Start: 88 @35620 has 3 MA's), (Start: 97 @35569 has 1 MA's), (116, 35488), (118, 35479), (127,

35422), (141, 35362), (154, 35302), (157, 35266), (169, 35206), (170, 35197), (179, 35128), (182, 35116), (203, 35056), (208, 35026), (209, 35023), (210, 35011), (212, 34993), (213, 34987), (214, 34984), (221, 34951), (253, 34849), (279, 34819), (304, 34648), (313, 34597), (316, 34576), (321, 34552), (329, 34510), (333, 34492), (343, 34444), (357, 34369), (363, 34327), (370, 34264), (371, 34258), (377, 34234), (402, 34129), (421, 34060), (426, 34042), (428, 34033), (432, 34012), (459, 33934), (465, 33898), (481, 33835),

Gene: Jerm\_53 Start: 36261, Stop: 34222, Start Num: 45

Candidate Starts for Jerm\_53:

(Start: 45 @36261 has 304 MA's), (Start: 97 @36021 has 1 MA's), (118, 35931), (119, 35916), (141, 35811), (169, 35655), (179, 35577), (203, 35505), (208, 35475), (209, 35472), (210, 35460), (212, 35442), (213, 35436), (214, 35433), (272, 35274), (283, 35229), (290, 35187), (311, 35049), (316, 35013), (329, 34947), (331, 34935), (344, 34875), (354, 34821), (393, 34608), (402, 34569), (403, 34566), (417, 34515), (432, 34452), (447, 34404), (451, 34395),

Gene: Jester\_40 Start: 31789, Stop: 29744, Start Num: 45

Candidate Starts for Jester\_40:

(Start: 45 @31789 has 304 MA's), (74, 31669), (87, 31600), (Start: 97 @31546 has 1 MA's), (116, 31465), (118, 31456), (154, 31276), (156, 31243), (157, 31240), (159, 31231), (164, 31210), (169, 31180), (175, 31117), (179, 31102), (181, 31096), (203, 31036), (209, 31003), (212, 30973), (213, 30967), (214, 30964), (252, 30829), (301, 30634), (304, 30616), (310, 30583), (326, 30493), (328, 30484), (354, 30352), (363, 30292), (372, 30220), (385, 30181), (387, 30178), (388, 30166), (393, 30133), (402, 30094), (421, 30022), (428, 29995), (432, 29974), (436, 29956), (459, 29896), (465, 29860),

Gene: JetBlade\_50 Start: 35442, Stop: 33409, Start Num: 49

Candidate Starts for JetBlade\_50:

(Start: 49 @35442 has 219 MA's), (68, 35379), (Start: 73 @35331 has 3 MA's), (78, 35307), (92, 35241), (Start: 97 @35205 has 1 MA's), (102, 35172), (116, 35124), (118, 35115), (127, 35058), (134, 35031), (141, 34998), (169, 34842), (170, 34833), (179, 34764), (203, 34692), (208, 34662), (209, 34659), (212, 34629), (213, 34623), (214, 34620), (232, 34533), (244, 34503), (255, 34491), (261, 34482), (279, 34434), (311, 34230), (329, 34128), (333, 34110), (360, 33969), (363, 33942), (392, 33798), (393, 33795), (399, 33765), (417, 33702), (426, 33669), (428, 33660), (432, 33639), (447, 33591), (465, 33525),

Gene: Jevington\_50 Start: 33260, Stop: 35362, Start Num: 45

Candidate Starts for Jevington\_50:

(Start: 45 @33260 has 304 MA's), (Start: 88 @33461 has 3 MA's), (116, 33593), (118, 33602), (129, 33671), (134, 33689), (135, 33701), (141, 33722), (161, 33839), (169, 33881), (179, 33959), (203, 34067), (212, 34130), (270, 34295), (275, 34307), (279, 34319), (294, 34439), (311, 34529), (316, 34565), (321, 34589), (323, 34592), (329, 34631), (357, 34775), (360, 34790), (365, 34826), (371, 34886), (378, 34913), (384, 34925), (392, 34979), (394, 34985), (411, 35051), (421, 35084), (426, 35102), (436, 35150), (462, 35231), (478, 35300), (481, 35309), (485, 35354),

Gene: JewelBug\_54 Start: 35020, Stop: 32960, Start Num: 45

Candidate Starts for JewelBug\_54:

(32, 35053), (Start: 45 @35020 has 304 MA's), (Start: 88 @34834 has 3 MA's), (Start: 97 @34783 has 1 MA's), (102, 34750), (116, 34702), (118, 34693), (119, 34678), (127, 34633), (141, 34573), (153, 34516), (157, 34477), (165, 34444), (169, 34417), (170, 34408), (179, 34339), (203, 34267), (208, 34237), (209, 34234), (212, 34204), (213, 34198), (214, 34195), (272, 34012), (283, 33967), (287, 33943), (307, 33808), (311, 33787), (331, 33673), (344, 33613), (346, 33604), (354, 33559), (357, 33541), (361, 33508), (372, 33427), (378, 33406), (380, 33400), (393, 33346), (394, 33343), (398, 33319), (399, 33316), (402, 33307), (417, 33253), (432, 33190), (440, 33160), (451, 33133),

Gene: Jiawan\_49 Start: 35755, Stop: 33716, Start Num: 45

Candidate Starts for Jiawan\_49:

(Start: 45 @35755 has 304 MA's), (Start: 73 @35641 has 3 MA's), (75, 35626), (78, 35617), (Start: 97 @35515 has 1 MA's), (118, 35425), (127, 35365), (128, 35362), (141, 35305), (168, 35158), (169, 35149), (179, 35071), (182, 35059), (203, 35005), (208, 34975), (210, 34960), (212, 34942), (213, 34936), (214, 34933), (272, 34768), (283, 34723), (311, 34543), (329, 34441), (344, 34369), (361, 34264), (363, 34255), (393, 34102), (399, 34072), (417, 34009), (421, 33994), (432, 33946),

Gene: JimJam\_45 Start: 19610, Stop: 21550, Start Num: 64

Candidate Starts for JimJam\_45:

(Start: 64 @19610 has 64 MA's), (90, 19742), (96, 19778), (102, 19814), (111, 19841), (114, 19853), (133, 19958), (148, 20015), (185, 20240), (206, 20294), (217, 20378), (228, 20429), (235, 20468), (248, 20480), (285, 20558), (297, 20657), (306, 20693), (333, 20840), (366, 21014), (369, 21050), (389, 21119), (390, 21122), (430, 21293), (468, 21431),

Gene: Jobu08\_53 Start: 35738, Stop: 33720, Start Num: 55

Candidate Starts for Jobu08\_53:

(Start: 55 @35738 has 95 MA's), (Start: 71 @35645 has 1 MA's), (Start: 73 @35636 has 3 MA's), (78, 35612), (Start: 88 @35561 has 3 MA's), (Start: 97 @35510 has 1 MA's), (107, 35462), (116, 35429), (118, 35420), (141, 35300), (154, 35240), (157, 35204), (169, 35144), (179, 35066), (182, 35054), (203, 34994), (208, 34964), (212, 34931), (213, 34925), (214, 34922), (230, 34841), (239, 34811), (279, 34757), (304, 34586), (321, 34490), (329, 34448), (333, 34430), (343, 34382), (346, 34370), (356, 34313), (357, 34307), (360, 34292), (363, 34265), (370, 34202), (371, 34196), (377, 34172), (402, 34067), (421, 33998), (426, 33980), (428, 33971), (432, 33950), (459, 33872), (465, 33836), (481, 33773),

Gene: Jollison\_44 Start: 19490, Stop: 21430, Start Num: 64

Candidate Starts for Jollison\_44:

(60, 19481), (Start: 64 @19490 has 64 MA's), (90, 19622), (96, 19658), (102, 19694), (111, 19721), (114, 19733), (133, 19838), (148, 19895), (185, 20120), (206, 20174), (217, 20258), (228, 20309), (235, 20348), (248, 20360), (285, 20438), (297, 20537), (306, 20573), (333, 20720), (366, 20894), (369, 20930), (389, 20999), (390, 21002), (430, 21173), (468, 21311),

Gene: JoongJeon\_49 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for JoongJeon\_49:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: Jordennis\_53 Start: 34510, Stop: 32486, Start Num: 45

Candidate Starts for Jordennis\_53:

(32, 34543), (Start: 45 @34510 has 304 MA's), (Start: 88 @34324 has 3 MA's), (102, 34240), (116, 34192), (118, 34183), (127, 34123), (141, 34063), (153, 34006), (157, 33967), (165, 33934), (169, 33907), (170, 33898), (175, 33844), (179, 33829), (203, 33757), (208, 33727), (212, 33694), (213, 33688), (214, 33685), (283, 33493), (307, 33334), (311, 33313), (331, 33199), (344, 33139), (346, 33130), (354, 33085), (357, 33067), (361, 33034), (378, 32932), (380, 32926), (393, 32872), (398, 32845), (399, 32842), (402, 32833), (417, 32779), (432, 32716), (440, 32686), (451, 32659),

Gene: Joselito\_52 Start: 35307, Stop: 33283, Start Num: 50

Candidate Starts for Joselito\_52:

(28, 35358), (41, 35325), (Start: 50 @35307 has 19 MA's), (Start: 73 @35199 has 3 MA's), (Start: 88 @35124 has 3 MA's), (116, 34992), (118, 34983), (141, 34863), (169, 34707), (174, 34659), (178, 34632), (179, 34629), (182, 34617), (197, 34584), (203, 34563), (210, 34518), (212, 34500), (213, 34494), (214, 34491), (270, 34341), (283, 34293), (286, 34278), (311, 34113), (329, 34011), (333, 33993), (347, 33921), (357, 33867), (360, 33852), (361, 33834), (393, 33672), (402, 33633), (426, 33543), (432, 33513), (447, 33465),

Gene: JoshKayV\_53 Start: 36364, Stop: 34310, Start Num: 45

Candidate Starts for JoshKayV\_53:

(Start: 45 @36364 has 304 MA's), (61, 36325), (Start: 73 @36253 has 3 MA's), (74, 36250), (Start: 88 @36178 has 3 MA's), (Start: 97 @36127 has 1 MA's), (118, 36037), (126, 35980), (127, 35977), (141, 35917), (147, 35899), (169, 35761), (170, 35752), (179, 35683), (192, 35647), (203, 35617), (208, 35587), (209, 35584), (212, 35554), (213, 35548), (214, 35545), (240, 35434), (272, 35362), (283, 35317), (290, 35275), (311, 35137), (316, 35101), (329, 35035), (331, 35023), (344, 34963), (354, 34909), (357, 34891), (378, 34759), (382, 34750), (388, 34729), (393, 34696), (402, 34657), (403, 34654), (410, 34624), (417, 34603), (432, 34540), (447, 34492), (451, 34483),

Gene: Journey13\_45 Start: 34077, Stop: 32026, Start Num: 45

Candidate Starts for Journey13\_45:

(Start: 45 @34077 has 304 MA's), (Start: 97 @33837 has 1 MA's), (102, 33804), (116, 33756), (118, 33747), (128, 33684), (141, 33627), (168, 33480), (169, 33471), (178, 33396), (179, 33393), (203, 33327), (209, 33294), (210, 33282), (212, 33264), (213, 33258), (214, 33255), (267, 33087), (270, 33075), (283, 33027), (290, 32985), (301, 32901), (311, 32847), (316, 32811), (329, 32745), (331, 32733), (344, 32673), (354, 32619), (357, 32601), (361, 32568), (363, 32559), (369, 32502), (393, 32406), (417, 32319), (428, 32277), (432, 32256),

Gene: Jovo\_43 Start: 34683, Stop: 32614, Start Num: 49

Candidate Starts for Jovo\_43:

(Start: 49 @34683 has 219 MA's), (Start: 88 @34497 has 3 MA's), (Start: 97 @34446 has 1 MA's), (102, 34413), (116, 34365), (118, 34356), (141, 34236), (146, 34221), (164, 34110), (165, 34107), (169, 34080), (170, 34071), (176, 34011), (179, 34002), (184, 33978), (203, 33891), (208, 33861), (209, 33858), (212, 33828), (213, 33822), (214, 33819), (283, 33627), (308, 33465), (313, 33432), (322, 33384), (329, 33345), (343, 33276), (354, 33219), (356, 33207), (357, 33201), (363, 33159), (365, 33150), (392, 33003), (399, 32970), (410, 32928), (421, 32892), (426, 32874), (428, 32865), (482, 32655),

Gene: Jsquared\_49 Start: 34681, Stop: 32633, Start Num: 45

Candidate Starts for Jsquared\_49:

(Start: 45 @34681 has 304 MA's), (Start: 71 @34579 has 1 MA's), (Start: 73 @34570 has 3 MA's), (Start: 88 @34495 has 3 MA's), (116, 34363), (118, 34354), (128, 34291), (141, 34234), (156, 34141), (168, 34087), (169, 34078), (174, 34030), (179, 34000), (203, 33934), (208, 33904), (209, 33901), (210, 33889), (212, 33871), (213, 33865), (214, 33862), (242, 33754), (263, 33709), (270, 33682), (283, 33634), (290, 33592), (301, 33508), (311, 33454), (316, 33418), (321, 33394), (322, 33391), (326, 33367), (331, 33340), (344, 33280), (346, 33271), (357, 33208), (361, 33175), (363, 33166), (373, 33085), (393, 33013), (398, 32986), (417, 32926), (432, 32863),

Gene: KADY\_54 Start: 35934, Stop: 33916, Start Num: 55

Candidate Starts for KADY\_54:

(Start: 55 @35934 has 95 MA's), (Start: 71 @35841 has 1 MA's), (Start: 73 @35832 has 3 MA's), (78, 35808), (Start: 88 @35757 has 3 MA's), (Start: 97 @35706 has 1 MA's), (116, 35625), (118, 35616), (141, 35499), (157, 35403), (169, 35343), (176, 35274), (179, 35265), (180, 35262), (182, 35253),

(203, 35193), (208, 35163), (209, 35160), (210, 35148), (212, 35130), (213, 35124), (214, 35121), (235, 35016), (239, 35010), (279, 34953), (311, 34749), (313, 34734), (316, 34713), (321, 34689), (326, 34662), (329, 34647), (356, 34509), (357, 34503), (360, 34488), (363, 34461), (370, 34398), (371, 34392), (377, 34368), (402, 34263), (411, 34227), (432, 34146), (459, 34068), (465, 34032), (481, 33969),

Gene: KFPoly\_49 Start: 35442, Stop: 33409, Start Num: 49

Candidate Starts for KFPoly\_49:

(Start: 49 @35442 has 219 MA's), (68, 35379), (Start: 73 @35331 has 3 MA's), (78, 35307), (92, 35241), (Start: 97 @35205 has 1 MA's), (102, 35172), (116, 35124), (118, 35115), (127, 35058), (134, 35031), (141, 34998), (169, 34842), (170, 34833), (179, 34764), (203, 34692), (208, 34662), (209, 34659), (212, 34629), (213, 34623), (214, 34620), (232, 34533), (244, 34503), (255, 34491), (261, 34482), (279, 34434), (311, 34230), (329, 34128), (333, 34110), (360, 33969), (363, 33942), (392, 33798), (393, 33795), (399, 33765), (417, 33702), (426, 33669), (428, 33660), (432, 33639), (447, 33591), (465, 33525),

Gene: Kachowdy\_51 Start: 35682, Stop: 33622, Start Num: 49

Candidate Starts for Kachowdy\_51:

(Start: 49 @35682 has 219 MA's), (74, 35568), (92, 35481), (Start: 97 @35445 has 1 MA's), (102, 35412), (116, 35364), (118, 35355), (141, 35235), (165, 35106), (169, 35079), (170, 35070), (179, 35001), (185, 34980), (187, 34977), (203, 34935), (208, 34905), (209, 34902), (210, 34890), (212, 34872), (213, 34866), (214, 34863), (279, 34659), (311, 34455), (316, 34419), (321, 34395), (329, 34353), (333, 34335), (356, 34215), (357, 34209), (360, 34194), (363, 34167), (389, 34029), (403, 33966), (428, 33873), (432, 33852), (460, 33771), (465, 33738),

Gene: Kaine\_47 Start: 33048, Stop: 35111, Start Num: 45

Candidate Starts for Kaine\_47:

(12, 32946), (13, 32952), (Start: 45 @33048 has 304 MA's), (61, 33087), (Start: 71 @33150 has 1 MA's), (Start: 73 @33159 has 3 MA's), (81, 33210), (82, 33216), (Start: 88 @33249 has 3 MA's), (118, 33390), (119, 33405), (134, 33477), (141, 33510), (161, 33627), (169, 33669), (179, 33747), (180, 33750), (184, 33771), (203, 33837), (212, 33900), (214, 33909), (270, 34050), (279, 34074), (307, 34263), (316, 34320), (340, 34443), (363, 34569), (365, 34578), (388, 34695), (389, 34707), (392, 34731), (393, 34734), (404, 34782), (421, 34836), (426, 34854), (432, 34884), (451, 34938), (462, 34980), (481, 35058),

Gene: Kalb97\_55 Start: 35795, Stop: 33780, Start Num: 55

Candidate Starts for Kalb97\_55:

(Start: 55 @35795 has 95 MA's), (Start: 71 @35702 has 1 MA's), (Start: 73 @35693 has 3 MA's), (Start: 88 @35618 has 3 MA's), (Start: 97 @35567 has 1 MA's), (116, 35486), (118, 35477), (127, 35420), (141, 35360), (154, 35300), (157, 35264), (169, 35204), (170, 35195), (179, 35126), (182, 35114), (203, 35054), (208, 35024), (209, 35021), (210, 35009), (212, 34991), (213, 34985), (214, 34982), (221, 34949), (253, 34847), (279, 34817), (304, 34646), (310, 34613), (313, 34595), (316, 34574), (321, 34550), (329, 34508), (333, 34490), (343, 34442), (357, 34367), (363, 34325), (370, 34262), (371, 34256), (377, 34232), (402, 34127), (421, 34058), (426, 34040), (428, 34031), (432, 34010), (459, 33932), (465, 33896), (481, 33833),

Gene: Kalnoky\_55 Start: 35793, Stop: 33778, Start Num: 55

Candidate Starts for Kalnoky\_55:

(Start: 55 @35793 has 95 MA's), (Start: 71 @35700 has 1 MA's), (Start: 73 @35691 has 3 MA's), (Start: 88 @35616 has 3 MA's), (Start: 97 @35565 has 1 MA's), (116, 35484), (118, 35475), (127, 35418), (141, 35358), (154, 35298), (157, 35262), (169, 35202), (170, 35193), (179, 35124), (182, 35112), (203, 35052), (208, 35022), (209, 35019), (210, 35007), (212, 34989), (213, 34983), (214, 34980), (221, 34947), (253, 34845), (279, 34815), (304, 34644), (313, 34593), (316, 34572), (321,

34548), (329, 34506), (333, 34488), (343, 34440), (357, 34365), (363, 34323), (370, 34260), (371, 34254), (377, 34230), (402, 34125), (421, 34056), (426, 34038), (428, 34029), (432, 34008), (459, 33930), (465, 33894), (481, 33831),

Gene: Kalpine\_49 Start: 35973, Stop: 33940, Start Num: 45

Candidate Starts for Kalpine\_49:

(Start: 45 @35973 has 304 MA's), (Start: 73 @35859 has 3 MA's), (74, 35856), (87, 35787), (Start: 88 @35784 has 3 MA's), (Start: 97 @35733 has 1 MA's), (102, 35700), (116, 35652), (118, 35643), (127, 35583), (141, 35523), (169, 35367), (170, 35358), (179, 35289), (203, 35223), (208, 35193), (209, 35190), (210, 35178), (212, 35160), (213, 35154), (214, 35151), (272, 34992), (283, 34947), (290, 34905), (311, 34767), (329, 34665), (331, 34653), (344, 34593), (357, 34521), (377, 34389), (380, 34380), (393, 34326), (410, 34254), (417, 34233), (419, 34227), (432, 34170), (447, 34122), (451, 34113),

Gene: Kampy\_50 Start: 35450, Stop: 33417, Start Num: 49

Candidate Starts for Kampy\_50:

(Start: 49 @35450 has 219 MA's), (68, 35387), (Start: 73 @35339 has 3 MA's), (78, 35315), (92, 35249), (Start: 97 @35213 has 1 MA's), (102, 35180), (116, 35132), (118, 35123), (127, 35066), (134, 35039), (141, 35006), (169, 34850), (170, 34841), (179, 34772), (203, 34700), (208, 34670), (209, 34667), (212, 34637), (213, 34631), (214, 34628), (232, 34541), (244, 34511), (255, 34499), (261, 34490), (279, 34442), (311, 34238), (329, 34136), (333, 34118), (360, 33977), (363, 33950), (392, 33806), (393, 33803), (399, 33773), (417, 33710), (426, 33677), (428, 33668), (432, 33647), (447, 33599), (465, 33533),

Gene: Karimac\_44 Start: 19639, Stop: 21579, Start Num: 64

Candidate Starts for Karimac\_44:

(Start: 64 @19639 has 64 MA's), (90, 19771), (96, 19807), (102, 19843), (111, 19870), (114, 19882), (133, 19987), (148, 20044), (185, 20269), (217, 20407), (228, 20458), (235, 20497), (248, 20509), (285, 20587), (297, 20686), (306, 20722), (333, 20869), (366, 21043), (389, 21148), (390, 21151), (430, 21322), (468, 21460),

Gene: Karp\_20 Start: 7742, Stop: 9685, Start Num: 65

Candidate Starts for Karp\_20:

(62, 7733), (Start: 65 @7742 has 26 MA's), (90, 7880), (111, 7979), (114, 7991), (133, 8096), (244, 8609), (289, 8723), (305, 8825), (327, 8948), (332, 8972), (351, 9044), (366, 9149), (370, 9191), (381, 9221), (390, 9257), (393, 9278), (405, 9329), (412, 9359), (427, 9410), (468, 9566), (476, 9608), (486, 9665),

Gene: Katalie\_47 Start: 32197, Stop: 34287, Start Num: 45

Candidate Starts for Katalie\_47:

(30, 32158), (Start: 45 @32197 has 304 MA's), (79, 32353), (Start: 88 @32407 has 3 MA's), (90, 32413), (Start: 97 @32458 has 1 MA's), (116, 32539), (118, 32548), (132, 32626), (141, 32668), (147, 32686), (161, 32785), (169, 32827), (179, 32905), (180, 32908), (203, 32995), (212, 33058), (214, 33067), (275, 33232), (279, 33244), (297, 33376), (311, 33454), (313, 33469), (316, 33490), (326, 33541), (357, 33700), (358, 33706), (365, 33751), (371, 33811), (378, 33838), (392, 33904), (394, 33910), (404, 33955), (410, 33973), (421, 34009), (426, 34027), (432, 34057), (443, 34096), (462, 34156), (479, 34228),

Gene: Katalie136\_49 Start: 35409, Stop: 33391, Start Num: 49

Candidate Starts for Katalie136\_49:

(Start: 49 @35409 has 219 MA's), (Start: 73 @35298 has 3 MA's), (92, 35208), (Start: 97 @35172 has 1 MA's), (102, 35139), (116, 35091), (118, 35082), (127, 35022), (141, 34962), (169, 34806), (170, 34797), (179, 34728), (182, 34716), (201, 34665), (203, 34656), (208, 34626), (209, 34623), (212,



34593), (213, 34587), (214, 34584), (248, 34464), (270, 34440), (279, 34416), (311, 34212), (329, 34110), (333, 34092), (343, 34041), (356, 33972), (360, 33951), (363, 33924), (392, 33780), (393, 33777), (399, 33747), (411, 33702), (426, 33651), (428, 33642), (432, 33621), (465, 33507), (479, 33450),

Gene: KatherineG\_57 Start: 35181, Stop: 33118, Start Num: 40

Candidate Starts for KatherineG\_57:

(Start: 40 @35181 has 21 MA's), (77, 35037), (87, 34986), (Start: 88 @34983 has 3 MA's), (116, 34851), (118, 34842), (141, 34722), (170, 34557), (174, 34518), (179, 34488), (194, 34446), (203, 34422), (208, 34392), (212, 34359), (213, 34353), (214, 34350), (270, 34176), (275, 34164), (283, 34128), (307, 33969), (310, 33951), (311, 33948), (316, 33912), (321, 33888), (329, 33846), (339, 33795), (356, 33708), (357, 33702), (363, 33660), (411, 33429), (432, 33348), (452, 33288), (459, 33270), (479, 33177), (482, 33159),

Gene: Kazan\_54 Start: 34820, Stop: 32796, Start Num: 45

Candidate Starts for Kazan\_54:

(32, 34853), (Start: 45 @34820 has 304 MA's), (Start: 88 @34634 has 3 MA's), (102, 34550), (116, 34502), (118, 34493), (127, 34433), (141, 34373), (153, 34316), (157, 34277), (165, 34244), (169, 34217), (170, 34208), (175, 34154), (179, 34139), (203, 34067), (208, 34037), (212, 34004), (213, 33998), (214, 33995), (283, 33803), (307, 33644), (311, 33623), (331, 33509), (344, 33449), (346, 33440), (354, 33395), (357, 33377), (361, 33344), (378, 33242), (380, 33236), (393, 33182), (398, 33155), (399, 33152), (402, 33143), (417, 33089), (432, 33026), (440, 32996), (451, 32969),

Gene: Kenrey\_24 Start: 8723, Stop: 10666, Start Num: 65

Candidate Starts for Kenrey\_24:

(62, 8714), (Start: 65 @8723 has 26 MA's), (Start: 73 @8780 has 3 MA's), (90, 8861), (98, 8912), (99, 8915), (111, 8960), (112, 8969), (114, 8972), (133, 9077), (148, 9134), (231, 9563), (244, 9590), (304, 9803), (314, 9857), (327, 9929), (332, 9953), (351, 10025), (390, 10238), (413, 10343), (423, 10379), (448, 10472), (473, 10571),

Gene: KentuckyRacer\_45 Start: 19423, Stop: 21363, Start Num: 64

Candidate Starts for KentuckyRacer\_45:

(Start: 64 @19423 has 64 MA's), (90, 19555), (96, 19591), (102, 19627), (111, 19654), (114, 19666), (133, 19771), (144, 19813), (148, 19828), (185, 20053), (206, 20107), (217, 20191), (228, 20242), (235, 20281), (248, 20293), (285, 20371), (297, 20470), (306, 20506), (333, 20653), (366, 20827), (369, 20863), (389, 20932), (390, 20935), (430, 21106), (468, 21244),

Gene: Kerberos\_53 Start: 35561, Stop: 33480, Start Num: 49

Candidate Starts for Kerberos\_53:

(Start: 49 @35561 has 219 MA's), (Start: 71 @35456 has 1 MA's), (Start: 73 @35447 has 3 MA's), (Start: 88 @35372 has 3 MA's), (102, 35288), (116, 35240), (118, 35231), (127, 35171), (147, 35093), (153, 35054), (169, 34955), (175, 34892), (179, 34877), (203, 34781), (208, 34751), (209, 34748), (212, 34718), (213, 34712), (214, 34709), (232, 34622), (266, 34562), (270, 34547), (283, 34499), (311, 34319), (329, 34217), (331, 34205), (344, 34145), (346, 34136), (354, 34091), (356, 34079), (360, 34058), (363, 34031), (371, 33962), (393, 33866), (398, 33839), (402, 33827), (411, 33791), (432, 33710), (444, 33668),

Gene: Keziacharles14\_51 Start: 36794, Stop: 34755, Start Num: 45

Candidate Starts for Keziacharles14\_51:

(Start: 45 @36794 has 304 MA's), (75, 36665), (118, 36464), (127, 36404), (141, 36344), (142, 36341), (169, 36188), (175, 36125), (178, 36113), (179, 36110), (203, 36044), (210, 35999), (212, 35981), (213, 35975), (214, 35972), (223, 35933), (230, 35891), (272, 35807), (283, 35762), (311, 35582), (331, 35468), (344, 35408), (346, 35399), (361, 35303), (363, 35294), (365, 35285), (393, 35141),

(402, 35102), (417, 35048), (432, 34985),

Gene: Kimona\_50 Start: 34054, Stop: 32024, Start Num: 49

Candidate Starts for Kimona\_50:

(Start: 49 @34054 has 219 MA's), (Start: 71 @33949 has 1 MA's), (Start: 73 @33940 has 3 MA's), (116, 33733), (118, 33724), (123, 33682), (141, 33604), (146, 33589), (154, 33544), (169, 33448), (170, 33439), (176, 33379), (179, 33370), (182, 33358), (203, 33298), (212, 33235), (213, 33229), (214, 33226), (279, 33061), (286, 33022), (301, 32911), (311, 32857), (343, 32686), (344, 32683), (346, 32674), (356, 32617), (357, 32611), (360, 32596), (363, 32569), (371, 32500), (392, 32413), (403, 32368), (428, 32275), (465, 32140), (479, 32083), (481, 32077),

Gene: KingCyrus\_53 Start: 37460, Stop: 35421, Start Num: 45

Candidate Starts for KingCyrus\_53:

(Start: 45 @37460 has 304 MA's), (Start: 97 @37220 has 1 MA's), (118, 37130), (119, 37115), (141, 37010), (169, 36854), (179, 36776), (203, 36704), (208, 36674), (209, 36671), (210, 36659), (212, 36641), (213, 36635), (214, 36632), (283, 36428), (290, 36386), (311, 36248), (316, 36212), (329, 36146), (331, 36134), (344, 36074), (354, 36020), (357, 36002), (393, 35807), (402, 35768), (417, 35714), (422, 35696), (432, 35651), (447, 35603), (451, 35594), (484, 35453),

Gene: Kingmustik0402\_50 Start: 35437, Stop: 33404, Start Num: 49

Candidate Starts for Kingmustik0402\_50:

(Start: 49 @35437 has 219 MA's), (68, 35374), (Start: 73 @35326 has 3 MA's), (78, 35302), (92, 35236), (Start: 97 @35200 has 1 MA's), (102, 35167), (116, 35119), (118, 35110), (127, 35053), (134, 35026), (141, 34993), (169, 34837), (170, 34828), (179, 34759), (203, 34687), (208, 34657), (209, 34654), (212, 34624), (213, 34618), (214, 34615), (232, 34528), (244, 34498), (255, 34486), (261, 34477), (279, 34429), (311, 34225), (329, 34123), (333, 34105), (360, 33964), (363, 33937), (392, 33793), (393, 33790), (399, 33760), (417, 33697), (426, 33664), (428, 33655), (432, 33634), (447, 33586), (465, 33520),

Gene: Kinmap\_48 Start: 34071, Stop: 32233, Start Num: 88

Candidate Starts for Kinmap\_48:

(Start: 45 @34257 has 304 MA's), (74, 34143), (85, 34080), (Start: 88 @34071 has 3 MA's), (Start: 97 @34020 has 1 MA's), (102, 33987), (118, 33930), (127, 33870), (141, 33810), (154, 33750), (157, 33714), (165, 33681), (169, 33654), (170, 33645), (179, 33576), (203, 33504), (208, 33474), (209, 33471), (212, 33441), (213, 33435), (214, 33432), (283, 33240), (311, 33060), (321, 33000), (329, 32958), (343, 32883), (356, 32814), (357, 32808), (363, 32766), (365, 32757), (391, 32622), (394, 32610), (399, 32583), (432, 32463), (440, 32433), (447, 32415),

Gene: Kipper29\_53 Start: 34833, Stop: 32809, Start Num: 45

Candidate Starts for Kipper29\_53:

(32, 34866), (Start: 45 @34833 has 304 MA's), (Start: 88 @34647 has 3 MA's), (102, 34563), (116, 34515), (118, 34506), (127, 34446), (141, 34386), (153, 34329), (157, 34290), (165, 34257), (169, 34230), (170, 34221), (175, 34167), (179, 34152), (203, 34080), (208, 34050), (212, 34017), (213, 34011), (214, 34008), (283, 33816), (307, 33657), (311, 33636), (331, 33522), (344, 33462), (346, 33453), (354, 33408), (357, 33390), (361, 33357), (378, 33255), (380, 33249), (393, 33195), (398, 33168), (399, 33165), (402, 33156), (417, 33102), (432, 33039), (440, 33009), (451, 32982),

Gene: KittenMittens\_46 Start: 34407, Stop: 32368, Start Num: 34

Candidate Starts for KittenMittens\_46:

(Start: 34 @34407 has 17 MA's), (78, 34272), (Start: 97 @34170 has 1 MA's), (102, 34137), (116, 34089), (118, 34080), (127, 34023), (141, 33963), (146, 33948), (169, 33807), (179, 33729), (182, 33717), (203, 33657), (208, 33627), (212, 33594), (213, 33588), (214, 33585), (221, 33552), (270, 33417), (279, 33393), (311, 33189), (329, 33087), (333, 33069), (343, 33018), (356, 32949), (357,

32943), (363, 32901), (365, 32892), (371, 32832), (392, 32757), (393, 32754), (394, 32751), (403, 32712), (417, 32661), (419, 32655), (432, 32598), (465, 32484), (479, 32427),

Gene: Koan\_48 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Koan\_48:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Koduck\_52 Start: 34966, Stop: 32918, Start Num: 45

Candidate Starts for Koduck\_52:

(Start: 45 @34966 has 304 MA's), (74, 34852), (79, 34816), (82, 34813), (Start: 88 @34780 has 3 MA's), (92, 34765), (116, 34648), (118, 34639), (141, 34519), (168, 34372), (169, 34363), (174, 34315), (178, 34288), (179, 34285), (203, 34219), (209, 34186), (210, 34174), (212, 34156), (213, 34150), (214, 34147), (263, 33994), (270, 33967), (283, 33919), (290, 33877), (301, 33793), (311, 33739), (316, 33703), (326, 33652), (331, 33625), (344, 33565), (346, 33556), (357, 33493), (361, 33460), (363, 33451), (369, 33394), (373, 33370), (380, 33352), (393, 33298), (398, 33271), (417, 33211), (428, 33169), (432, 33148),

Gene: Koko\_55 Start: 35338, Stop: 33284, Start Num: 45

Candidate Starts for Koko\_55:

(Start: 45 @35338 has 304 MA's), (Start: 88 @35152 has 3 MA's), (Start: 97 @35101 has 1 MA's), (102, 35068), (116, 35020), (118, 35011), (127, 34951), (141, 34891), (153, 34834), (157, 34795), (165, 34762), (169, 34735), (170, 34726), (179, 34657), (203, 34585), (208, 34555), (212, 34522), (213, 34516), (214, 34513), (232, 34426), (250, 34372), (270, 34339), (283, 34291), (290, 34249), (311, 34111), (331, 33997), (344, 33937), (346, 33928), (354, 33883), (357, 33865), (361, 33832), (378, 33730), (380, 33724), (393, 33670), (398, 33643), (402, 33631), (417, 33577), (432, 33514), (440, 33484), (451, 33457), (461, 33418),

Gene: Koreni\_49 Start: 35129, Stop: 33096, Start Num: 49

Candidate Starts for Koreni\_49:

(Start: 49 @35129 has 219 MA's), (68, 35066), (Start: 73 @35018 has 3 MA's), (78, 34994), (92, 34928), (Start: 97 @34892 has 1 MA's), (102, 34859), (116, 34811), (118, 34802), (127, 34745), (134, 34718), (141, 34685), (169, 34529), (170, 34520), (179, 34451), (203, 34379), (208, 34349), (209, 34346), (212, 34316), (213, 34310), (214, 34307), (232, 34220), (244, 34190), (255, 34178), (261, 34169), (279, 34121), (311, 33917), (329, 33815), (333, 33797), (360, 33656), (363, 33629), (392, 33485), (393, 33482), (399, 33452), (417, 33389), (426, 33356), (428, 33347), (432, 33326), (447, 33278), (465, 33212),

Gene: Kratark\_50 Start: 35603, Stop: 33573, Start Num: 49

Candidate Starts for Kratark\_50:

(Start: 49 @35603 has 219 MA's), (92, 35402), (Start: 97 @35366 has 1 MA's), (102, 35333), (116, 35285), (118, 35276), (127, 35219), (141, 35159), (158, 35057), (169, 35003), (170, 34994), (179, 34925), (182, 34913), (202, 34862), (203, 34853), (208, 34823), (209, 34820), (212, 34790), (213, 34784), (214, 34781), (221, 34748), (279, 34598), (311, 34394), (329, 34292), (333, 34274), (356, 34154), (360, 34133), (363, 34106), (392, 33962), (393, 33959), (399, 33929), (411, 33884), (421, 33851), (426, 33833), (428, 33824), (432, 33803), (465, 33689),

Gene: Kremtemulon\_50 Start: 35396, Stop: 33363, Start Num: 49

Candidate Starts for Kremtemulon\_50:

(Start: 49 @35396 has 219 MA's), (68, 35333), (Start: 73 @35285 has 3 MA's), (78, 35261), (92, 35195), (Start: 97 @35159 has 1 MA's), (102, 35126), (116, 35078), (118, 35069), (127, 35012), (134, 34985), (141, 34952), (169, 34796), (170, 34787), (179, 34718), (203, 34646), (208, 34616), (209, 34613), (212, 34583), (213, 34577), (214, 34574), (232, 34487), (244, 34457), (255, 34445), (261, 34436), (279, 34388), (311, 34184), (329, 34082), (333, 34064), (360, 33923), (363, 33896), (392, 33752), (393, 33749), (399, 33719), (417, 33656), (426, 33623), (428, 33614), (432, 33593), (447, 33545), (465, 33479),

Gene: Krishelle\_41 Start: 32434, Stop: 30389, Start Num: 45

Candidate Starts for Krishelle\_41:

(Start: 45 @32434 has 304 MA's), (74, 32314), (87, 32245), (Start: 97 @32191 has 1 MA's), (116, 32110), (118, 32101), (127, 32041), (132, 32023), (154, 31921), (156, 31888), (157, 31885), (159, 31876), (164, 31855), (168, 31834), (169, 31825), (175, 31762), (179, 31747), (181, 31741), (203, 31681), (209, 31648), (212, 31618), (213, 31612), (214, 31609), (252, 31474), (304, 31261), (310, 31228), (326, 31138), (328, 31129), (354, 30997), (363, 30937), (372, 30865), (385, 30826), (387, 30823), (388, 30811), (402, 30739), (421, 30667), (428, 30640), (465, 30505),

Gene: Kristoff\_49 Start: 35549, Stop: 33468, Start Num: 34

Candidate Starts for Kristoff\_49:

(Start: 34 @35549 has 17 MA's), (44, 35528), (Start: 73 @35408 has 3 MA's), (74, 35405), (78, 35384), (Start: 97 @35282 has 1 MA's), (102, 35249), (116, 35201), (118, 35192), (127, 35135), (141, 35075), (146, 35060), (157, 34979), (169, 34919), (179, 34841), (182, 34829), (202, 34778), (203, 34769), (208, 34739), (212, 34706), (213, 34700), (214, 34697), (266, 34532), (272, 34514), (283, 34469), (290, 34427), (311, 34289), (329, 34187), (333, 34169), (343, 34118), (356, 34049), (357, 34043), (360, 34028), (363, 34001), (365, 33992), (371, 33932), (392, 33857), (393, 33854), (394, 33851), (403, 33812), (417, 33761), (419, 33755), (432, 33698), (465, 33584), (479, 33527),

Gene: Kyee\_50 Start: 35446, Stop: 33413, Start Num: 49

Candidate Starts for Kyee\_50:

(Start: 49 @35446 has 219 MA's), (68, 35383), (Start: 73 @35335 has 3 MA's), (78, 35311), (92, 35245), (Start: 97 @35209 has 1 MA's), (102, 35176), (116, 35128), (118, 35119), (127, 35062), (134, 35035), (141, 35002), (169, 34846), (170, 34837), (179, 34768), (203, 34696), (208, 34666), (209, 34663), (212, 34633), (213, 34627), (214, 34624), (232, 34537), (244, 34507), (255, 34495), (261, 34486), (279, 34438), (311, 34234), (329, 34132), (333, 34114), (360, 33973), (363, 33946), (392, 33802), (393, 33799), (399, 33769), (417, 33706), (426, 33673), (428, 33664), (432, 33643), (447, 33595), (465, 33529),

Gene: L5\_50 Start: 35041, Stop: 32993, Start Num: 45

Candidate Starts for L5\_50:

(Start: 45 @35041 has 304 MA's), (74, 34927), (79, 34891), (82, 34888), (Start: 88 @34855 has 3 MA's), (92, 34840), (116, 34723), (118, 34714), (141, 34594), (168, 34447), (169, 34438), (174, 34390), (178, 34363), (179, 34360), (203, 34294), (209, 34261), (210, 34249), (212, 34231), (213, 34225), (214, 34222), (263, 34069), (270, 34042), (283, 33994), (290, 33952), (301, 33868), (311, 33814), (316, 33778), (326, 33727), (331, 33700), (344, 33640), (346, 33631), (357, 33568), (361, 33535), (363, 33526), (369, 33469), (373, 33445), (380, 33427), (393, 33373), (398, 33346), (417, 33286), (428, 33244), (432, 33223),

Gene: LBerry\_55 Start: 35910, Stop: 33892, Start Num: 55

Candidate Starts for LBerry\_55:

(Start: 55 @35910 has 95 MA's), (Start: 71 @35817 has 1 MA's), (Start: 73 @35808 has 3 MA's), (78, 35784), (Start: 88 @35733 has 3 MA's), (Start: 97 @35682 has 1 MA's), (116, 35601), (118, 35592), (141, 35472), (154, 35412), (157, 35376), (169, 35316), (179, 35238), (203, 35166), (208, 35136),

(212, 35103), (213, 35097), (214, 35094), (230, 35013), (239, 34983), (279, 34929), (304, 34758), (321, 34662), (329, 34620), (333, 34602), (343, 34554), (346, 34542), (356, 34485), (357, 34479), (360, 34464), (363, 34437), (370, 34374), (371, 34368), (377, 34344), (402, 34239), (421, 34170), (426, 34152), (428, 34143), (432, 34122), (459, 34044), (465, 34008), (481, 33945),

Gene: LHTSCC\_52 Start: 35884, Stop: 33833, Start Num: 49

Candidate Starts for LHTSCC\_52:

(Start: 49 @35884 has 219 MA's), (68, 35821), (Start: 73 @35773 has 3 MA's), (74, 35770), (78, 35749), (92, 35683), (Start: 97 @35647 has 1 MA's), (102, 35614), (116, 35566), (118, 35557), (127, 35500), (134, 35473), (141, 35440), (146, 35425), (169, 35284), (170, 35275), (179, 35206), (203, 35134), (208, 35104), (209, 35101), (212, 35071), (213, 35065), (214, 35062), (260, 34909), (279, 34858), (311, 34654), (329, 34552), (333, 34534), (360, 34393), (363, 34366), (392, 34222), (393, 34219), (399, 34189), (417, 34126), (426, 34093), (428, 34084), (432, 34063), (447, 34015), (465, 33949),

Gene: LadyBird\_56 Start: 36593, Stop: 34536, Start Num: 45

Candidate Starts for LadyBird\_56:

(Start: 45 @36593 has 304 MA's), (74, 36476), (Start: 88 @36404 has 3 MA's), (89, 36401), (Start: 97 @36353 has 1 MA's), (118, 36263), (127, 36203), (141, 36143), (169, 35987), (170, 35978), (179, 35909), (203, 35843), (208, 35813), (209, 35810), (210, 35798), (212, 35780), (213, 35774), (214, 35771), (240, 35660), (272, 35588), (283, 35543), (290, 35501), (311, 35363), (316, 35327), (329, 35261), (331, 35249), (344, 35189), (354, 35135), (357, 35117), (382, 34976), (388, 34955), (393, 34922), (402, 34883), (403, 34880), (410, 34850), (417, 34829), (419, 34823), (432, 34766), (447, 34718), (451, 34709),

Gene: Lambert1\_50 Start: 35710, Stop: 33692, Start Num: 55

Candidate Starts for Lambert1\_50:

(Start: 55 @35710 has 95 MA's), (Start: 71 @35617 has 1 MA's), (Start: 73 @35608 has 3 MA's), (77, 35587), (92, 35518), (Start: 97 @35482 has 1 MA's), (102, 35449), (116, 35401), (118, 35392), (141, 35275), (157, 35179), (169, 35119), (176, 35050), (179, 35041), (182, 35029), (203, 34969), (208, 34939), (209, 34936), (210, 34924), (212, 34906), (213, 34900), (214, 34897), (235, 34792), (239, 34786), (279, 34729), (311, 34525), (321, 34465), (329, 34423), (333, 34405), (346, 34342), (357, 34279), (360, 34264), (363, 34237), (372, 34165), (393, 34078), (403, 34036), (428, 33943), (432, 33922), (465, 33808),

Gene: Landor\_51 Start: 36934, Stop: 34904, Start Num: 45

Candidate Starts for Landor\_51:

(Start: 45 @36934 has 304 MA's), (74, 36820), (118, 36607), (119, 36592), (141, 36487), (169, 36331), (170, 36322), (179, 36253), (194, 36205), (203, 36181), (208, 36151), (209, 36148), (210, 36136), (212, 36118), (213, 36112), (214, 36109), (232, 36022), (270, 35953), (283, 35905), (290, 35863), (311, 35725), (316, 35689), (329, 35623), (331, 35611), (344, 35551), (354, 35497), (357, 35479), (377, 35347), (378, 35344), (380, 35338), (388, 35317), (393, 35284), (398, 35257), (417, 35197), (432, 35134), (447, 35086), (451, 35077),

Gene: Lannister\_49 Start: 32582, Stop: 34672, Start Num: 45

Candidate Starts for Lannister\_49:

(14, 32498), (16, 32504), (30, 32546), (Start: 45 @32582 has 304 MA's), (82, 32759), (Start: 88 @32792 has 3 MA's), (Start: 97 @32843 has 1 MA's), (116, 32924), (118, 32933), (132, 33011), (141, 33053), (156, 33146), (161, 33170), (165, 33185), (169, 33212), (179, 33290), (180, 33293), (203, 33380), (212, 33443), (214, 33452), (249, 33584), (275, 33617), (279, 33629), (297, 33761), (311, 33839), (316, 33875), (329, 33941), (346, 34022), (357, 34085), (358, 34091), (365, 34136), (371, 34196), (378, 34223), (384, 34235), (392, 34289), (394, 34295), (404, 34340), (411, 34361), (421, 34394), (426, 34412), (432, 34442), (434, 34454), (446, 34487), (462, 34541), (470, 34580), (478,

34610), (479, 34613),

Gene: LappelDuVide\_50 Start: 35447, Stop: 33414, Start Num: 49

Candidate Starts for LappelDuVide\_50:

(Start: 49 @35447 has 219 MA's), (68, 35384), (Start: 73 @35336 has 3 MA's), (78, 35312), (92, 35246), (Start: 97 @35210 has 1 MA's), (102, 35177), (116, 35129), (118, 35120), (127, 35063), (134, 35036), (141, 35003), (169, 34847), (170, 34838), (179, 34769), (203, 34697), (208, 34667), (209, 34664), (212, 34634), (213, 34628), (214, 34625), (232, 34538), (244, 34508), (255, 34496), (261, 34487), (279, 34439), (311, 34235), (329, 34133), (333, 34115), (360, 33974), (363, 33947), (392, 33803), (393, 33800), (399, 33770), (417, 33707), (426, 33674), (428, 33665), (432, 33644), (447, 33596), (465, 33530),

Gene: Larenn\_50 Start: 35855, Stop: 33822, Start Num: 45

Candidate Starts for Larenn\_50:

(Start: 45 @35855 has 304 MA's), (Start: 73 @35741 has 3 MA's), (Start: 88 @35666 has 3 MA's), (Start: 97 @35615 has 1 MA's), (102, 35582), (116, 35534), (118, 35525), (119, 35510), (127, 35465), (141, 35405), (169, 35249), (170, 35240), (179, 35171), (203, 35105), (208, 35075), (209, 35072), (210, 35060), (212, 35042), (213, 35036), (214, 35033), (272, 34874), (283, 34829), (290, 34787), (311, 34649), (316, 34613), (329, 34547), (331, 34535), (344, 34475), (357, 34403), (393, 34208), (398, 34181), (399, 34178), (402, 34169), (417, 34115), (419, 34109), (432, 34052), (451, 33995),

Gene: Larnav\_43 Start: 19627, Stop: 21570, Start Num: 64

Candidate Starts for Larnav\_43:

(Start: 53 @19582 has 2 MA's), (56, 19591), (Start: 64 @19627 has 64 MA's), (Start: 67 @19633 has 1 MA's), (69, 19657), (83, 19735), (86, 19756), (90, 19765), (93, 19777), (106, 19855), (111, 19864), (112, 19873), (114, 19876), (133, 19981), (198, 20290), (235, 20491), (248, 20503), (306, 20716), (307, 20725), (324, 20821), (333, 20863), (336, 20881), (366, 21037), (390, 21145), (430, 21316), (438, 21355), (468, 21454),

Gene: LarryKay\_54 Start: 35936, Stop: 33918, Start Num: 55

Candidate Starts for LarryKay\_54:

(Start: 55 @35936 has 95 MA's), (Start: 71 @35843 has 1 MA's), (Start: 73 @35834 has 3 MA's), (78, 35810), (Start: 88 @35759 has 3 MA's), (Start: 97 @35708 has 1 MA's), (116, 35627), (118, 35618), (141, 35501), (157, 35405), (169, 35345), (176, 35276), (179, 35267), (180, 35264), (182, 35255), (203, 35195), (208, 35165), (209, 35162), (210, 35150), (212, 35132), (213, 35126), (214, 35123), (235, 35018), (239, 35012), (279, 34955), (311, 34751), (313, 34736), (316, 34715), (321, 34691), (326, 34664), (329, 34649), (356, 34511), (357, 34505), (360, 34490), (363, 34463), (370, 34400), (371, 34394), (377, 34370), (402, 34265), (411, 34229), (432, 34148), (459, 34070), (465, 34034), (481, 33971),

Gene: LastResort\_55 Start: 34695, Stop: 32632, Start Num: 40

Candidate Starts for LastResort\_55:

(Start: 40 @34695 has 21 MA's), (87, 34500), (Start: 88 @34497 has 3 MA's), (116, 34365), (118, 34356), (141, 34236), (170, 34071), (174, 34032), (179, 34002), (194, 33960), (203, 33936), (208, 33906), (212, 33873), (213, 33867), (214, 33864), (270, 33690), (275, 33678), (283, 33642), (310, 33465), (311, 33462), (316, 33426), (329, 33360), (337, 33321), (339, 33309), (356, 33222), (357, 33216), (363, 33174), (411, 32943), (432, 32862), (452, 32802), (459, 32784), (479, 32691), (482, 32673),

Gene: Legacy\_46 Start: 31762, Stop: 33852, Start Num: 45

Candidate Starts for Legacy\_46:

(Start: 45 @31762 has 304 MA's), (78, 31903), (79, 31918), (82, 31939), (Start: 88 @31972 has 3 MA's), (90, 31978), (Start: 97 @32023 has 1 MA's), (116, 32104), (118, 32113), (132, 32191), (134,

32200), (141, 32233), (156, 32326), (161, 32350), (169, 32392), (179, 32470), (180, 32473), (203, 32560), (212, 32623), (214, 32632), (275, 32797), (279, 32809), (297, 32941), (302, 32968), (311, 33019), (313, 33034), (316, 33055), (329, 33121), (357, 33265), (358, 33271), (360, 33280), (365, 33316), (369, 33364), (371, 33376), (378, 33403), (384, 33415), (392, 33469), (404, 33520), (411, 33541), (421, 33574), (426, 33592), (432, 33622), (434, 33634), (443, 33661), (462, 33721), (478, 33790), (479, 33793), (485, 33844),

Gene: Lemur\_50 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for Lemur\_50:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: Leo04\_43 Start: 19640, Stop: 21583, Start Num: 64

Candidate Starts for Leo04\_43:

(Start: 53 @19595 has 2 MA's), (56, 19604), (Start: 64 @19640 has 64 MA's), (Start: 67 @19646 has 1 MA's), (83, 19748), (86, 19769), (90, 19778), (93, 19790), (106, 19868), (111, 19877), (112, 19886), (114, 19889), (133, 19994), (154, 20093), (198, 20303), (235, 20504), (248, 20516), (306, 20729), (324, 20834), (333, 20876), (336, 20894), (366, 21050), (390, 21158), (430, 21329), (438, 21368), (468, 21467),

Gene: LeoAvram\_50 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for LeoAvram\_50:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Leogania\_51 Start: 36900, Stop: 34861, Start Num: 43

Candidate Starts for Leogania\_51:

(Start: 43 @36900 has 3 MA's), (Start: 73 @36786 has 3 MA's), (Start: 88 @36711 has 3 MA's), (Start: 97 @36660 has 1 MA's), (102, 36627), (116, 36579), (118, 36570), (127, 36510), (141, 36450), (147, 36432), (169, 36294), (170, 36285), (179, 36216), (203, 36144), (208, 36114), (209, 36111), (210, 36099), (212, 36081), (213, 36075), (214, 36072), (272, 35913), (283, 35868), (290, 35826), (311, 35688), (316, 35652), (321, 35628), (329, 35586), (331, 35574), (344, 35514), (357, 35442), (377, 35310), (380, 35301), (393, 35247), (398, 35220), (399, 35217), (402, 35208), (417, 35154), (432, 35091), (447, 35043), (451, 35034),

Gene: Lev2\_43 Start: 34315, Stop: 32246, Start Num: 49

Candidate Starts for Lev2\_43:

(Start: 49 @34315 has 219 MA's), (Start: 88 @34129 has 3 MA's), (Start: 97 @34078 has 1 MA's), (102, 34045), (116, 33997), (118, 33988), (141, 33868), (146, 33853), (164, 33742), (165, 33739), (169, 33712), (170, 33703), (176, 33643), (179, 33634), (184, 33610), (203, 33523), (208, 33493), (209, 33490), (212, 33460), (213, 33454), (214, 33451), (283, 33259), (308, 33097), (313, 33064), (322, 33016), (329, 32977), (343, 32908), (354, 32851), (356, 32839), (357, 32833), (363, 32791), (365, 32782), (392, 32635), (399, 32602), (410, 32560), (421, 32524), (426, 32506), (428, 32497),

(482, 32287),

Gene: Leviathan\_53 Start: 36318, Stop: 34279, Start Num: 45

Candidate Starts for Leviathan\_53:

(Start: 45 @36318 has 304 MA's), (Start: 97 @36078 has 1 MA's), (118, 35988), (119, 35973), (141, 35868), (169, 35712), (179, 35634), (203, 35562), (208, 35532), (209, 35529), (210, 35517), (212, 35499), (213, 35493), (214, 35490), (272, 35331), (283, 35286), (290, 35244), (311, 35106), (316, 35070), (329, 35004), (331, 34992), (344, 34932), (354, 34878), (357, 34860), (403, 34623), (417, 34572), (432, 34509), (447, 34461), (451, 34452), (484, 34311),

Gene: Leviticus\_47 Start: 31667, Stop: 33757, Start Num: 45

Candidate Starts for Leviticus\_47:

(Start: 45 @31667 has 304 MA's), (78, 31808), (79, 31823), (Start: 88 @31877 has 3 MA's), (90, 31883), (Start: 97 @31928 has 1 MA's), (116, 32009), (118, 32018), (132, 32096), (134, 32105), (141, 32138), (156, 32231), (161, 32255), (169, 32297), (179, 32375), (180, 32378), (203, 32465), (212, 32528), (214, 32537), (275, 32702), (279, 32714), (297, 32846), (302, 32873), (311, 32924), (313, 32939), (316, 32960), (329, 33026), (357, 33170), (358, 33176), (360, 33185), (365, 33221), (369, 33269), (371, 33281), (378, 33308), (384, 33320), (392, 33374), (404, 33425), (411, 33446), (421, 33479), (426, 33497), (432, 33527), (434, 33539), (443, 33566), (462, 33626), (478, 33695), (479, 33698), (485, 33749),

Gene: Liandry\_41 Start: 18297, Stop: 20249, Start Num: 64

Candidate Starts for Liandry\_41:

(Start: 64 @18297 has 64 MA's), (Start: 67 @18303 has 1 MA's), (83, 18405), (86, 18426), (90, 18435), (106, 18525), (111, 18534), (112, 18543), (114, 18546), (133, 18651), (198, 18960), (217, 19071), (235, 19161), (248, 19173), (306, 19386), (333, 19533), (349, 19596), (364, 19689), (366, 19707), (381, 19779), (390, 19815), (430, 19986), (438, 20025), (468, 20124),

Gene: Lika\_47 Start: 32466, Stop: 34556, Start Num: 45

Candidate Starts for Lika\_47:

(Start: 45 @32466 has 304 MA's), (61, 32511), (79, 32622), (Start: 88 @32676 has 3 MA's), (90, 32682), (Start: 97 @32727 has 1 MA's), (116, 32808), (118, 32817), (119, 32832), (132, 32895), (134, 32904), (141, 32937), (154, 32997), (156, 33030), (161, 33054), (169, 33096), (170, 33105), (179, 33174), (180, 33177), (195, 33234), (203, 33264), (212, 33327), (214, 33336), (225, 33387), (242, 33456), (275, 33501), (279, 33513), (297, 33645), (307, 33702), (311, 33723), (316, 33759), (326, 33810), (334, 33846), (346, 33906), (357, 33969), (358, 33975), (360, 33984), (365, 34020), (371, 34080), (378, 34107), (384, 34119), (385, 34122), (392, 34173), (394, 34179), (404, 34224), (410, 34242), (411, 34245), (421, 34278), (426, 34296), (432, 34326), (434, 34338), (443, 34365), (462, 34425), (479, 34497), (485, 34548),

Gene: LilMartin\_40 Start: 18338, Stop: 20281, Start Num: 64

Candidate Starts for LilMartin\_40:

(52, 18293), (Start: 64 @18338 has 64 MA's), (Start: 67 @18344 has 1 MA's), (83, 18446), (86, 18467), (90, 18476), (106, 18566), (111, 18575), (112, 18584), (114, 18587), (133, 18692), (144, 18734), (176, 18944), (198, 19001), (217, 19112), (235, 19202), (248, 19214), (306, 19427), (307, 19436), (333, 19574), (366, 19748), (390, 19856), (430, 20027), (438, 20066), (468, 20165),

Gene: LilTurb\_52 Start: 36142, Stop: 34103, Start Num: 45

Candidate Starts for LilTurb\_52:

(Start: 45 @36142 has 304 MA's), (Start: 97 @35902 has 1 MA's), (118, 35812), (119, 35797), (141, 35692), (169, 35536), (179, 35458), (203, 35386), (208, 35356), (209, 35353), (210, 35341), (212, 35323), (213, 35317), (214, 35314), (272, 35155), (283, 35110), (290, 35068), (311, 34930), (316, 34894), (329, 34828), (331, 34816), (344, 34756), (354, 34702), (357, 34684), (402, 34450), (403,



34447), (417, 34396), (432, 34333), (447, 34285), (451, 34276), (484, 34135),

Gene: Lilbunny\_53 Start: 34908, Stop: 32854, Start Num: 45

Candidate Starts for Lilbunny\_53:

(Start: 45 @34908 has 304 MA's), (Start: 88 @34722 has 3 MA's), (Start: 97 @34671 has 1 MA's), (102, 34638), (116, 34590), (118, 34581), (127, 34521), (141, 34461), (153, 34404), (157, 34365), (165, 34332), (169, 34305), (170, 34296), (175, 34242), (179, 34227), (203, 34155), (208, 34125), (212, 34092), (213, 34086), (214, 34083), (232, 33996), (250, 33942), (270, 33909), (283, 33861), (290, 33819), (311, 33681), (331, 33567), (344, 33507), (346, 33498), (354, 33453), (357, 33435), (361, 33402), (378, 33300), (380, 33294), (393, 33240), (398, 33213), (402, 33201), (417, 33147), (432, 33084), (440, 33054), (451, 33027), (461, 32988),

Gene: Lilit\_55 Start: 35899, Stop: 33881, Start Num: 55

Candidate Starts for Lilit\_55:

(Start: 55 @35899 has 95 MA's), (Start: 73 @35797 has 3 MA's), (78, 35773), (Start: 88 @35722 has 3 MA's), (Start: 97 @35671 has 1 MA's), (116, 35590), (118, 35581), (141, 35461), (154, 35401), (157, 35365), (169, 35305), (179, 35227), (203, 35155), (208, 35125), (212, 35092), (213, 35086), (214, 35083), (230, 35002), (239, 34972), (279, 34918), (304, 34747), (321, 34651), (329, 34609), (333, 34591), (343, 34543), (346, 34531), (356, 34474), (357, 34468), (360, 34453), (363, 34426), (370, 34363), (371, 34357), (377, 34333), (402, 34228), (421, 34159), (426, 34141), (428, 34132), (432, 34111), (459, 34033), (465, 33997), (481, 33934),

Gene: Lilleskat\_49 Start: 35672, Stop: 33633, Start Num: 45

Candidate Starts for Lilleskat\_49:

(Start: 45 @35672 has 304 MA's), (Start: 73 @35558 has 3 MA's), (75, 35543), (78, 35534), (Start: 97 @35432 has 1 MA's), (118, 35342), (127, 35282), (141, 35222), (168, 35075), (169, 35066), (179, 34988), (182, 34976), (203, 34922), (208, 34892), (210, 34877), (212, 34859), (213, 34853), (214, 34850), (272, 34685), (283, 34640), (311, 34460), (329, 34358), (344, 34286), (361, 34181), (363, 34172), (393, 34019), (399, 33989), (417, 33926), (421, 33911), (432, 33863),

Gene: Lillie\_41 Start: 32074, Stop: 30029, Start Num: 45

Candidate Starts for Lillie\_41:

(Start: 45 @32074 has 304 MA's), (74, 31954), (85, 31891), (87, 31885), (Start: 97 @31831 has 1 MA's), (116, 31750), (118, 31741), (127, 31681), (132, 31663), (154, 31561), (156, 31528), (157, 31525), (159, 31516), (164, 31495), (168, 31474), (169, 31465), (175, 31402), (179, 31387), (181, 31381), (203, 31321), (209, 31288), (212, 31258), (213, 31252), (214, 31249), (252, 31114), (304, 30901), (310, 30868), (326, 30778), (328, 30769), (354, 30637), (363, 30577), (372, 30505), (385, 30466), (387, 30463), (388, 30451), (402, 30379), (421, 30307), (428, 30280), (465, 30145),

Gene: Limpid\_20 Start: 7773, Stop: 9716, Start Num: 65

Candidate Starts for Limpid\_20:

(11, 7599), (Start: 20 @7635 has 1 MA's), (62, 7764), (Start: 65 @7773 has 26 MA's), (Start: 73 @7830 has 3 MA's), (86, 7902), (90, 7911), (100, 7968), (Start: 103 @7986 has 3 MA's), (105, 7995), (111, 8010), (114, 8022), (133, 8127), (188, 8412), (244, 8640), (295, 8814), (314, 8907), (317, 8934), (327, 8979), (332, 9003), (346, 9054), (366, 9180), (390, 9288), (392, 9306), (408, 9378), (412, 9390), (468, 9597), (473, 9621),

Gene: LionsBait\_53 Start: 37258, Stop: 35195, Start Num: 45

Candidate Starts for LionsBait\_53:

(Start: 45 @37258 has 304 MA's), (Start: 73 @37144 has 3 MA's), (74, 37141), (Start: 88 @37069 has 3 MA's), (Start: 97 @37018 has 1 MA's), (118, 36928), (127, 36868), (141, 36808), (169, 36652), (179, 36574), (203, 36502), (208, 36472), (209, 36469), (210, 36457), (212, 36439), (213, 36433), (214, 36430), (240, 36319), (272, 36247), (283, 36202), (287, 36178), (290, 36160), (311, 36022), (316,

35986), (329, 35920), (331, 35908), (344, 35848), (354, 35794), (356, 35782), (357, 35776), (361, 35743), (387, 35626), (393, 35581), (394, 35578), (402, 35542), (417, 35488), (432, 35425), (447, 35377), (451, 35368),

Gene: LittleB\_50 Start: 35449, Stop: 33416, Start Num: 49

Candidate Starts for LittleB\_50:

(Start: 49 @35449 has 219 MA's), (68, 35386), (Start: 73 @35338 has 3 MA's), (78, 35314), (92, 35248), (Start: 97 @35212 has 1 MA's), (102, 35179), (116, 35131), (118, 35122), (127, 35065), (134, 35038), (141, 35005), (169, 34849), (170, 34840), (179, 34771), (203, 34699), (208, 34669), (209, 34666), (212, 34636), (213, 34630), (214, 34627), (232, 34540), (244, 34510), (255, 34498), (261, 34489), (279, 34441), (311, 34237), (329, 34135), (333, 34117), (360, 33976), (363, 33949), (392, 33805), (393, 33802), (399, 33772), (417, 33709), (426, 33676), (428, 33667), (432, 33646), (447, 33598), (465, 33532),

Gene: LittleCherry\_44 Start: 34673, Stop: 32583, Start Num: 49

Candidate Starts for LittleCherry\_44:

(Start: 49 @34673 has 219 MA's), (Start: 88 @34487 has 3 MA's), (Start: 97 @34436 has 1 MA's), (116, 34355), (118, 34346), (141, 34226), (146, 34211), (164, 34100), (165, 34097), (169, 34070), (170, 34061), (176, 34001), (179, 33992), (182, 33980), (203, 33881), (208, 33851), (209, 33848), (212, 33818), (213, 33812), (214, 33809), (239, 33698), (283, 33596), (286, 33581), (308, 33434), (313, 33401), (322, 33353), (329, 33314), (343, 33245), (354, 33188), (356, 33176), (357, 33170), (363, 33128), (365, 33119), (372, 33056), (394, 32966), (399, 32939), (410, 32897), (421, 32861), (426, 32843), (428, 32834), (482, 32624),

Gene: LittleGuy\_50 Start: 35344, Stop: 33311, Start Num: 49

Candidate Starts for LittleGuy\_50:

(Start: 49 @35344 has 219 MA's), (68, 35281), (Start: 73 @35233 has 3 MA's), (78, 35209), (92, 35143), (Start: 97 @35107 has 1 MA's), (102, 35074), (116, 35026), (118, 35017), (127, 34960), (141, 34900), (169, 34744), (170, 34735), (179, 34666), (203, 34594), (208, 34564), (209, 34561), (212, 34531), (213, 34525), (214, 34522), (232, 34435), (244, 34405), (255, 34393), (261, 34384), (279, 34336), (307, 34153), (311, 34132), (329, 34030), (333, 34012), (360, 33871), (363, 33844), (392, 33700), (393, 33697), (399, 33667), (417, 33604), (426, 33571), (428, 33562), (432, 33541), (447, 33493), (465, 33427),

Gene: LochMonster\_51 Start: 35684, Stop: 33651, Start Num: 49

Candidate Starts for LochMonster\_51:

(Start: 49 @35684 has 219 MA's), (68, 35621), (Start: 73 @35573 has 3 MA's), (78, 35549), (92, 35483), (Start: 97 @35447 has 1 MA's), (102, 35414), (116, 35366), (118, 35357), (127, 35300), (134, 35273), (141, 35240), (169, 35084), (170, 35075), (179, 35006), (203, 34934), (208, 34904), (209, 34901), (212, 34871), (213, 34865), (214, 34862), (232, 34775), (244, 34745), (255, 34733), (261, 34724), (279, 34676), (311, 34472), (329, 34370), (333, 34352), (360, 34211), (363, 34184), (392, 34040), (393, 34037), (399, 34007), (417, 33944), (426, 33911), (428, 33902), (432, 33881), (447, 33833), (465, 33767),

Gene: Loka\_48 Start: 35085, Stop: 33028, Start Num: 45

Candidate Starts for Loka\_48:

(Start: 45 @35085 has 304 MA's), (Start: 71 @34983 has 1 MA's), (74, 34971), (Start: 88 @34899 has 3 MA's), (Start: 97 @34848 has 1 MA's), (102, 34815), (116, 34767), (118, 34758), (141, 34638), (169, 34482), (170, 34473), (179, 34404), (203, 34338), (208, 34308), (209, 34305), (210, 34293), (212, 34275), (213, 34269), (214, 34266), (269, 34086), (270, 34083), (283, 34035), (290, 33993), (311, 33855), (329, 33753), (331, 33741), (344, 33681), (346, 33672), (357, 33609), (361, 33576), (374, 33483), (393, 33414), (402, 33375), (403, 33372), (404, 33366), (417, 33321), (432, 33258), (447, 33210), (451, 33201),

Gene: LoneWolf\_52 Start: 35710, Stop: 33671, Start Num: 45

Candidate Starts for LoneWolf\_52:

(Start: 45 @35710 has 304 MA's), (Start: 73 @35596 has 3 MA's), (75, 35581), (78, 35572), (102, 35437), (118, 35380), (127, 35320), (128, 35317), (141, 35260), (169, 35104), (179, 35026), (182, 35014), (203, 34960), (208, 34930), (210, 34915), (212, 34897), (213, 34891), (214, 34888), (264, 34750), (272, 34723), (283, 34678), (301, 34552), (311, 34498), (316, 34462), (321, 34438), (344, 34324), (361, 34219), (363, 34210), (393, 34057), (402, 34018), (417, 33964), (432, 33901), (447, 33853),

Gene: Loofah\_49 Start: 33265, Stop: 35361, Start Num: 45

Candidate Starts for Loofah\_49:

(Start: 45 @33265 has 304 MA's), (Start: 88 @33466 has 3 MA's), (116, 33598), (118, 33607), (133, 33691), (134, 33694), (135, 33706), (141, 33727), (161, 33844), (165, 33859), (169, 33886), (170, 33895), (179, 33964), (203, 34054), (208, 34084), (209, 34087), (212, 34117), (260, 34282), (269, 34291), (279, 34318), (288, 34375), (290, 34384), (294, 34438), (297, 34450), (302, 34477), (311, 34528), (316, 34564), (323, 34591), (329, 34630), (357, 34774), (358, 34780), (360, 34789), (365, 34825), (369, 34873), (371, 34885), (375, 34903), (379, 34915), (394, 34984), (404, 35029), (411, 35050), (421, 35083), (426, 35101), (462, 35230), (478, 35299),

Gene: Looper\_56 Start: 34672, Stop: 32609, Start Num: 40

Candidate Starts for Looper\_56:

(Start: 40 @34672 has 21 MA's), (87, 34477), (Start: 88 @34474 has 3 MA's), (116, 34342), (118, 34333), (141, 34213), (170, 34048), (174, 34009), (179, 33979), (194, 33937), (203, 33913), (208, 33883), (212, 33850), (213, 33844), (214, 33841), (270, 33667), (275, 33655), (283, 33619), (310, 33442), (311, 33439), (316, 33403), (329, 33337), (337, 33298), (339, 33286), (356, 33199), (357, 33193), (363, 33151), (411, 32920), (432, 32839), (452, 32779), (459, 32761), (479, 32668), (482, 32650),

Gene: Lorelei\_48 Start: 32494, Stop: 34584, Start Num: 45

Candidate Starts for Lorelei\_48:

(27, 32452), (30, 32458), (Start: 45 @32494 has 304 MA's), (61, 32539), (79, 32650), (Start: 88 @32704 has 3 MA's), (90, 32710), (Start: 97 @32755 has 1 MA's), (116, 32836), (118, 32845), (132, 32923), (134, 32932), (141, 32965), (154, 33025), (156, 33058), (161, 33082), (168, 33115), (169, 33124), (179, 33202), (180, 33205), (195, 33262), (203, 33292), (212, 33355), (214, 33364), (225, 33415), (242, 33484), (275, 33529), (279, 33541), (293, 33640), (297, 33673), (307, 33730), (311, 33751), (316, 33787), (326, 33838), (334, 33874), (346, 33934), (357, 33997), (358, 34003), (365, 34048), (371, 34108), (378, 34135), (384, 34147), (392, 34201), (394, 34207), (404, 34252), (411, 34273), (421, 34306), (426, 34324), (432, 34354), (434, 34366), (443, 34393), (462, 34453), (479, 34525), (485, 34576),

Gene: Lorenzo\_50 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Lorenzo\_50:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Loser\_53 Start: 36715, Stop: 34652, Start Num: 45

Candidate Starts for Loser\_53:

(Start: 45 @36715 has 304 MA's), (Start: 73 @36604 has 3 MA's), (74, 36601), (Start: 88 @36529 has 3 MA's), (Start: 97 @36478 has 1 MA's), (102, 36445), (118, 36388), (141, 36268), (150, 36223), (169, 36112), (170, 36103), (179, 36034), (194, 35986), (203, 35962), (208, 35932), (209, 35929), (212, 35899), (213, 35893), (214, 35890), (232, 35803), (272, 35704), (283, 35659), (290, 35617), (311, 35479), (316, 35443), (329, 35377), (331, 35365), (344, 35305), (357, 35233), (365, 35182), (377, 35101), (378, 35098), (380, 35092), (393, 35038), (398, 35011), (402, 34999), (417, 34945), (419, 34939), (432, 34882), (451, 34825),

Gene: Louie6\_53 Start: 35935, Stop: 33917, Start Num: 55

Candidate Starts for Louie6\_53:

(Start: 55 @35935 has 95 MA's), (Start: 71 @35842 has 1 MA's), (Start: 73 @35833 has 3 MA's), (78, 35809), (Start: 88 @35758 has 3 MA's), (Start: 97 @35707 has 1 MA's), (116, 35626), (118, 35617), (141, 35500), (157, 35404), (169, 35344), (176, 35275), (179, 35266), (180, 35263), (182, 35254), (203, 35194), (208, 35164), (209, 35161), (210, 35149), (212, 35131), (213, 35125), (214, 35122), (235, 35017), (239, 35011), (279, 34954), (311, 34750), (313, 34735), (316, 34714), (321, 34690), (326, 34663), (329, 34648), (356, 34510), (357, 34504), (360, 34489), (363, 34462), (370, 34399), (371, 34393), (377, 34369), (402, 34264), (411, 34228), (432, 34147), (459, 34069), (465, 34033), (481, 33970),

Gene: Lowa\_54 Start: 35898, Stop: 33880, Start Num: 55

Candidate Starts for Lowa\_54:

(Start: 55 @35898 has 95 MA's), (Start: 73 @35796 has 3 MA's), (78, 35772), (Start: 88 @35721 has 3 MA's), (Start: 97 @35670 has 1 MA's), (116, 35589), (118, 35580), (141, 35460), (154, 35400), (157, 35364), (169, 35304), (179, 35226), (203, 35154), (208, 35124), (212, 35091), (213, 35085), (214, 35082), (230, 35001), (239, 34971), (279, 34917), (304, 34746), (321, 34650), (329, 34608), (333, 34590), (343, 34542), (346, 34530), (356, 34473), (357, 34467), (360, 34452), (363, 34425), (370, 34362), (371, 34356), (377, 34332), (402, 34227), (421, 34158), (426, 34140), (428, 34131), (432, 34110), (459, 34032), (465, 33996), (481, 33933),

Gene: Luchador\_55 Start: 37328, Stop: 35289, Start Num: 45

Candidate Starts for Luchador\_55:

(Start: 45 @37328 has 304 MA's), (116, 37007), (118, 36998), (128, 36935), (141, 36878), (169, 36722), (178, 36647), (179, 36644), (203, 36578), (208, 36548), (209, 36545), (212, 36515), (213, 36509), (214, 36506), (217, 36485), (272, 36341), (283, 36296), (290, 36254), (311, 36116), (321, 36056), (331, 36002), (344, 35942), (346, 35933), (357, 35870), (361, 35837), (393, 35675), (398, 35648), (402, 35636), (410, 35603), (417, 35582), (432, 35519), (447, 35471),

Gene: Lucivia\_52 Start: 35248, Stop: 33332, Start Num: 73

Candidate Starts for Lucivia\_52:

(28, 35407), (41, 35374), (Start: 50 @35356 has 19 MA's), (Start: 73 @35248 has 3 MA's), (Start: 88 @35173 has 3 MA's), (116, 35041), (118, 35032), (141, 34912), (169, 34756), (174, 34708), (178, 34681), (179, 34678), (182, 34666), (197, 34633), (203, 34612), (210, 34567), (212, 34549), (213, 34543), (214, 34540), (270, 34390), (283, 34342), (286, 34327), (311, 34162), (329, 34060), (333, 34042), (347, 33970), (357, 33916), (360, 33901), (361, 33883), (377, 33784), (393, 33721), (402, 33682), (426, 33592), (432, 33562), (447, 33514),

Gene: LuckySocke\_141 Start: 76832, Stop: 78463, Start Num: 103

Candidate Starts for LuckySocke\_141:

(Start: 103 @76832 has 3 MA's), (Start: 104 @76838 has 1 MA's), (108, 76850), (124, 76943), (130, 76967), (138, 77006), (152, 77072), (157, 77111), (162, 77135), (172, 77192), (173, 77201), (177, 77234), (202, 77267), (212, 77339), (218, 77369), (220, 77375), (226, 77408), (227, 77414), (270, 77516), (279, 77540), (284, 77570), (306, 77696), (326, 77807), (328, 77816), (345, 77888), (366, 78017), (376, 78086), (379, 78089), (396, 78158), (420, 78242), (425, 78263), (432, 78296), (442,

78329), (458, 78368), (470, 78431),

Gene: Lucyedi\_52 Start: 35536, Stop: 33494, Start Num: 45

Candidate Starts for Lucyedi\_52:

(Start: 45 @35536 has 304 MA's), (87, 35353), (116, 35218), (118, 35209), (119, 35194), (127, 35149), (128, 35146), (141, 35089), (169, 34933), (179, 34855), (203, 34789), (208, 34759), (209, 34756), (212, 34726), (213, 34720), (214, 34717), (252, 34594), (270, 34552), (283, 34504), (286, 34489), (290, 34462), (311, 34324), (316, 34288), (321, 34264), (331, 34210), (343, 34153), (344, 34150), (346, 34141), (354, 34096), (357, 34078), (361, 34045), (363, 34036), (393, 33883), (399, 33853), (417, 33787), (432, 33724),

Gene: LugYA\_57 Start: 35907, Stop: 33889, Start Num: 55

Candidate Starts for LugYA\_57:

(Start: 55 @35907 has 95 MA's), (Start: 71 @35814 has 1 MA's), (Start: 73 @35805 has 3 MA's), (78, 35781), (Start: 88 @35730 has 3 MA's), (Start: 97 @35679 has 1 MA's), (116, 35598), (118, 35589), (141, 35469), (154, 35409), (157, 35373), (169, 35313), (179, 35235), (203, 35163), (208, 35133), (212, 35100), (213, 35094), (214, 35091), (230, 35010), (239, 34980), (279, 34926), (304, 34755), (321, 34659), (329, 34617), (333, 34599), (343, 34551), (346, 34539), (356, 34482), (357, 34476), (360, 34461), (363, 34434), (370, 34371), (371, 34365), (377, 34341), (402, 34236), (421, 34167), (426, 34149), (432, 34119), (459, 34041), (465, 34005), (481, 33942),

Gene: LukeCage\_44 Start: 19275, Stop: 21215, Start Num: 64

Candidate Starts for LukeCage\_44:

(Start: 64 @19275 has 64 MA's), (90, 19407), (91, 19410), (102, 19479), (111, 19506), (114, 19518), (119, 19551), (133, 19623), (148, 19680), (151, 19713), (185, 19905), (217, 20043), (228, 20094), (235, 20133), (248, 20145), (297, 20322), (306, 20358), (333, 20505), (366, 20679), (369, 20715), (389, 20784), (390, 20787), (430, 20958), (468, 21096),

Gene: Lululemon\_42 Start: 19022, Stop: 20965, Start Num: 64

Candidate Starts for Lululemon\_42:

(Start: 64 @19022 has 64 MA's), (Start: 67 @19028 has 1 MA's), (83, 19130), (86, 19151), (90, 19160), (93, 19172), (106, 19250), (111, 19259), (112, 19268), (114, 19271), (133, 19376), (154, 19475), (198, 19685), (235, 19886), (248, 19898), (306, 20111), (324, 20216), (333, 20258), (336, 20276), (366, 20432), (390, 20540), (430, 20711), (438, 20750), (468, 20849),

Gene: Lunsford\_51 Start: 35442, Stop: 33409, Start Num: 49

Candidate Starts for Lunsford\_51:

(Start: 49 @35442 has 219 MA's), (68, 35379), (Start: 73 @35331 has 3 MA's), (78, 35307), (92, 35241), (Start: 97 @35205 has 1 MA's), (102, 35172), (116, 35124), (118, 35115), (127, 35058), (134, 35031), (141, 34998), (169, 34842), (170, 34833), (179, 34764), (203, 34692), (208, 34662), (209, 34659), (212, 34629), (213, 34623), (214, 34620), (232, 34533), (244, 34503), (255, 34491), (261, 34482), (279, 34434), (311, 34230), (329, 34128), (333, 34110), (360, 33969), (363, 33942), (392, 33798), (393, 33795), (399, 33765), (417, 33702), (426, 33669), (428, 33660), (432, 33639), (447, 33591), (465, 33525),

Gene: MA5\_51 Start: 35098, Stop: 33077, Start Num: 49

Candidate Starts for MA5\_51:

(Start: 49 @35098 has 219 MA's), (74, 34984), (92, 34897), (Start: 97 @34861 has 1 MA's), (102, 34828), (116, 34780), (118, 34771), (141, 34651), (165, 34522), (169, 34495), (170, 34486), (179, 34417), (203, 34351), (208, 34321), (209, 34318), (210, 34306), (212, 34288), (213, 34282), (214, 34279), (279, 34114), (311, 33910), (321, 33850), (329, 33808), (333, 33790), (356, 33670), (357, 33664), (360, 33649), (372, 33550), (392, 33466), (403, 33421), (428, 33328), (432, 33307), (465, 33193),

Gene: MK4\_51 Start: 35197, Stop: 33176, Start Num: 49

Candidate Starts for MK4\_51:

(Start: 49 @35197 has 219 MA's), (Start: 73 @35086 has 3 MA's), (74, 35083), (92, 34996), (Start: 97 @34960 has 1 MA's), (102, 34927), (116, 34879), (118, 34870), (141, 34750), (146, 34735), (165, 34621), (169, 34594), (170, 34585), (179, 34516), (185, 34495), (187, 34492), (203, 34450), (208, 34420), (210, 34405), (212, 34387), (213, 34381), (214, 34378), (279, 34213), (311, 34009), (321, 33949), (329, 33907), (333, 33889), (356, 33769), (357, 33763), (360, 33748), (372, 33649), (392, 33565), (399, 33532), (403, 33520), (418, 33466), (428, 33427), (432, 33406), (465, 33292),

Gene: MaCh\_52 Start: 35286, Stop: 33262, Start Num: 50

Candidate Starts for MaCh\_52:

(28, 35337), (41, 35304), (Start: 50 @35286 has 19 MA's), (Start: 73 @35178 has 3 MA's), (Start: 88 @35103 has 3 MA's), (116, 34971), (118, 34962), (141, 34842), (169, 34686), (174, 34638), (178, 34611), (179, 34608), (182, 34596), (197, 34563), (203, 34542), (210, 34497), (212, 34479), (213, 34473), (214, 34470), (270, 34320), (283, 34272), (286, 34257), (311, 34092), (329, 33990), (333, 33972), (347, 33900), (357, 33846), (360, 33831), (361, 33813), (393, 33651), (402, 33612), (414, 33564), (426, 33522), (432, 33492), (447, 33444),

Gene: Mabel\_51 Start: 34705, Stop: 32867, Start Num: 88

Candidate Starts for Mabel\_51:

(28, 34939), (41, 34906), (Start: 50 @34888 has 19 MA's), (Start: 73 @34780 has 3 MA's), (Start: 88 @34705 has 3 MA's), (116, 34573), (118, 34564), (141, 34444), (169, 34288), (174, 34240), (178, 34213), (179, 34210), (182, 34198), (197, 34165), (203, 34144), (210, 34099), (212, 34081), (213, 34075), (214, 34072), (250, 33952), (283, 33877), (286, 33862), (290, 33835), (311, 33697), (321, 33637), (329, 33595), (333, 33577), (347, 33505), (357, 33451), (360, 33436), (361, 33418), (377, 33319), (393, 33256), (402, 33217), (426, 33127), (432, 33097), (447, 33049),

Gene: MadMarie\_54 Start: 35908, Stop: 33890, Start Num: 55

Candidate Starts for MadMarie\_54:

(Start: 55 @35908 has 95 MA's), (Start: 71 @35815 has 1 MA's), (Start: 73 @35806 has 3 MA's), (76, 35788), (78, 35782), (Start: 88 @35731 has 3 MA's), (Start: 97 @35680 has 1 MA's), (116, 35599), (118, 35590), (141, 35470), (154, 35410), (157, 35374), (169, 35314), (179, 35236), (203, 35164), (208, 35134), (212, 35101), (213, 35095), (214, 35092), (230, 35011), (239, 34981), (279, 34927), (304, 34756), (321, 34660), (329, 34618), (333, 34600), (343, 34552), (346, 34540), (356, 34483), (357, 34477), (360, 34462), (363, 34435), (370, 34372), (371, 34366), (377, 34342), (402, 34237), (421, 34168), (426, 34150), (428, 34141), (432, 34120), (459, 34042), (465, 34006), (481, 33943),

Gene: Mainiac\_54 Start: 35900, Stop: 33882, Start Num: 55

Candidate Starts for Mainiac\_54:

(Start: 55 @35900 has 95 MA's), (Start: 71 @35807 has 1 MA's), (Start: 73 @35798 has 3 MA's), (78, 35774), (Start: 88 @35723 has 3 MA's), (Start: 97 @35672 has 1 MA's), (116, 35591), (118, 35582), (141, 35462), (154, 35402), (157, 35366), (169, 35306), (179, 35228), (203, 35156), (208, 35126), (212, 35093), (213, 35087), (214, 35084), (230, 35003), (239, 34973), (279, 34919), (304, 34748), (321, 34652), (329, 34610), (333, 34592), (343, 34544), (346, 34532), (356, 34475), (357, 34469), (360, 34454), (363, 34427), (370, 34364), (371, 34358), (377, 34334), (402, 34229), (421, 34160), (426, 34142), (428, 34133), (432, 34112), (459, 34034), (465, 33998), (481, 33935),

Gene: MajorMajor\_50 Start: 34526, Stop: 32664, Start Num: 88

Candidate Starts for MajorMajor\_50:

(Start: 45 @34712 has 304 MA's), (Start: 71 @34610 has 1 MA's), (Start: 73 @34601 has 3 MA's), (Start: 88 @34526 has 3 MA's), (116, 34394), (118, 34385), (128, 34322), (141, 34265), (168, 34118), (169, 34109), (174, 34061), (175, 34046), (179, 34031), (203, 33965), (208, 33935), (209, 33932),

(210, 33920), (212, 33902), (213, 33896), (214, 33893), (263, 33740), (270, 33713), (283, 33665), (290, 33623), (311, 33485), (316, 33449), (326, 33398), (331, 33371), (344, 33311), (346, 33302), (357, 33239), (361, 33206), (363, 33197), (373, 33116), (393, 33044), (398, 33017), (417, 32957), (432, 32894),

Gene: Malec\_51 Start: 36422, Stop: 34389, Start Num: 45

Candidate Starts for Malec\_51:

(Start: 45 @36422 has 304 MA's), (Start: 73 @36308 has 3 MA's), (Start: 88 @36233 has 3 MA's), (Start: 97 @36182 has 1 MA's), (102, 36149), (116, 36101), (118, 36092), (119, 36077), (127, 36032), (141, 35972), (169, 35816), (170, 35807), (179, 35738), (203, 35672), (208, 35642), (209, 35639), (210, 35627), (212, 35609), (213, 35603), (214, 35600), (272, 35441), (283, 35396), (290, 35354), (311, 35216), (316, 35180), (329, 35114), (331, 35102), (344, 35042), (357, 34970), (393, 34775), (398, 34748), (399, 34745), (402, 34736), (417, 34682), (419, 34676), (432, 34619), (451, 34562),

Gene: Malinsilva\_56 Start: 35898, Stop: 33880, Start Num: 55

Candidate Starts for Malinsilva\_56:

(Start: 55 @35898 has 95 MA's), (Start: 73 @35796 has 3 MA's), (78, 35772), (Start: 88 @35721 has 3 MA's), (Start: 97 @35670 has 1 MA's), (116, 35589), (118, 35580), (141, 35460), (154, 35400), (157, 35364), (169, 35304), (179, 35226), (203, 35154), (208, 35124), (212, 35091), (213, 35085), (214, 35082), (230, 35001), (239, 34971), (279, 34917), (304, 34746), (321, 34650), (329, 34608), (333, 34590), (343, 34542), (346, 34530), (356, 34473), (357, 34467), (360, 34452), (363, 34425), (370, 34362), (371, 34356), (377, 34332), (402, 34227), (421, 34158), (426, 34140), (428, 34131), (432, 34110), (459, 34032), (465, 33996), (481, 33933),

Gene: Maminiaina\_50 Start: 35477, Stop: 33438, Start Num: 45

Candidate Starts for Maminiaina\_50:

(Start: 45 @35477 has 304 MA's), (Start: 73 @35363 has 3 MA's), (75, 35348), (78, 35339), (102, 35204), (118, 35147), (127, 35087), (141, 35027), (168, 34880), (169, 34871), (179, 34793), (182, 34781), (203, 34727), (208, 34697), (210, 34682), (212, 34664), (213, 34658), (214, 34655), (264, 34517), (272, 34490), (283, 34445), (311, 34265), (329, 34163), (344, 34091), (361, 33986), (363, 33977), (393, 33824), (402, 33785), (411, 33749), (432, 33668),

Gene: Maneekul\_47 Start: 32034, Stop: 34124, Start Num: 45

Candidate Starts for Maneekul\_47:

(27, 31992), (30, 31998), (Start: 45 @32034 has 304 MA's), (Start: 73 @32151 has 3 MA's), (79, 32190), (82, 32211), (Start: 88 @32244 has 3 MA's), (Start: 97 @32295 has 1 MA's), (116, 32376), (118, 32385), (132, 32463), (141, 32505), (154, 32565), (156, 32598), (161, 32622), (169, 32664), (179, 32742), (180, 32745), (195, 32802), (203, 32832), (212, 32895), (214, 32904), (225, 32955), (242, 33024), (275, 33069), (279, 33081), (297, 33213), (311, 33291), (313, 33306), (316, 33327), (326, 33378), (357, 33537), (358, 33543), (360, 33552), (365, 33588), (371, 33648), (378, 33675), (384, 33687), (385, 33690), (392, 33741), (394, 33747), (411, 33813), (421, 33846), (426, 33864), (432, 33894), (434, 33906), (443, 33933), (462, 33993), (479, 34065),

Gene: Manu\_54 Start: 35796, Stop: 33781, Start Num: 55

Candidate Starts for Manu\_54:

(Start: 55 @35796 has 95 MA's), (Start: 71 @35703 has 1 MA's), (Start: 73 @35694 has 3 MA's), (Start: 88 @35619 has 3 MA's), (Start: 97 @35568 has 1 MA's), (116, 35487), (118, 35478), (127, 35421), (141, 35361), (154, 35301), (157, 35265), (169, 35205), (170, 35196), (179, 35127), (182, 35115), (203, 35055), (208, 35025), (209, 35022), (210, 35010), (212, 34992), (213, 34986), (214, 34983), (221, 34950), (253, 34848), (279, 34818), (304, 34647), (310, 34614), (313, 34596), (316, 34575), (321, 34551), (329, 34509), (333, 34491), (343, 34443), (357, 34368), (363, 34326), (370, 34263), (371, 34257), (377, 34233), (402, 34128), (421, 34059), (426, 34041), (428, 34032), (432, 34011), (459, 33933), (465, 33897), (481, 33834),

Gene: MarQuardt\_54 Start: 35908, Stop: 33890, Start Num: 55

Candidate Starts for MarQuardt\_54:

(Start: 55 @35908 has 95 MA's), (Start: 71 @35815 has 1 MA's), (Start: 73 @35806 has 3 MA's), (78, 35782), (Start: 88 @35731 has 3 MA's), (Start: 97 @35680 has 1 MA's), (116, 35599), (118, 35590), (141, 35470), (154, 35410), (157, 35374), (169, 35314), (179, 35236), (203, 35164), (208, 35134), (212, 35101), (213, 35095), (214, 35092), (230, 35011), (239, 34981), (279, 34927), (304, 34756), (321, 34660), (329, 34618), (333, 34600), (343, 34552), (346, 34540), (356, 34483), (357, 34477), (360, 34462), (363, 34435), (370, 34372), (371, 34366), (377, 34342), (402, 34237), (421, 34168), (426, 34150), (428, 34141), (432, 34120), (459, 34042), (465, 34006), (481, 33943),

Gene: Marav\_51 Start: 33576, Stop: 35678, Start Num: 45

Candidate Starts for Marav\_51:

(Start: 45 @33576 has 304 MA's), (Start: 88 @33777 has 3 MA's), (Start: 97 @33828 has 1 MA's), (116, 33909), (118, 33918), (129, 33987), (134, 34005), (135, 34017), (141, 34038), (161, 34155), (169, 34197), (179, 34275), (203, 34383), (212, 34446), (270, 34611), (275, 34623), (276, 34626), (279, 34635), (294, 34755), (311, 34845), (316, 34881), (321, 34905), (323, 34908), (329, 34947), (357, 35091), (360, 35106), (365, 35142), (371, 35202), (378, 35229), (384, 35241), (392, 35295), (394, 35301), (411, 35367), (421, 35400), (426, 35418), (434, 35460), (453, 35511), (462, 35547), (478, 35616), (481, 35625), (485, 35670),

Gene: Marchesa\_51 Start: 35632, Stop: 33608, Start Num: 49

Candidate Starts for Marchesa\_51:

(Start: 49 @35632 has 219 MA's), (74, 35518), (92, 35431), (Start: 97 @35395 has 1 MA's), (102, 35362), (116, 35314), (118, 35305), (141, 35185), (165, 35056), (169, 35029), (170, 35020), (179, 34951), (185, 34930), (187, 34927), (203, 34885), (208, 34855), (210, 34840), (212, 34822), (213, 34816), (214, 34813), (235, 34708), (239, 34702), (279, 34645), (286, 34606), (311, 34441), (316, 34405), (321, 34381), (329, 34339), (333, 34321), (356, 34201), (357, 34195), (360, 34180), (363, 34153), (389, 34015), (403, 33952), (428, 33859), (432, 33838), (460, 33757), (465, 33724),

Gene: Margo\_50 Start: 35736, Stop: 33718, Start Num: 55

Candidate Starts for Margo\_50:

(Start: 55 @35736 has 95 MA's), (Start: 71 @35643 has 1 MA's), (Start: 73 @35634 has 3 MA's), (77, 35613), (92, 35544), (Start: 97 @35508 has 1 MA's), (102, 35475), (116, 35427), (118, 35418), (127, 35361), (141, 35301), (157, 35205), (169, 35145), (176, 35076), (179, 35067), (182, 35055), (203, 34995), (208, 34965), (209, 34962), (210, 34950), (212, 34932), (213, 34926), (214, 34923), (235, 34818), (239, 34812), (279, 34755), (311, 34551), (321, 34491), (329, 34449), (333, 34431), (346, 34368), (357, 34305), (360, 34290), (363, 34263), (372, 34191), (393, 34104), (403, 34062), (428, 33969), (432, 33948), (465, 33834),

Gene: Marie\_54 Start: 35906, Stop: 33888, Start Num: 55

Candidate Starts for Marie\_54:

(Start: 55 @35906 has 95 MA's), (Start: 71 @35813 has 1 MA's), (Start: 73 @35804 has 3 MA's), (78, 35780), (Start: 88 @35729 has 3 MA's), (Start: 97 @35678 has 1 MA's), (116, 35597), (118, 35588), (141, 35468), (154, 35408), (157, 35372), (169, 35312), (179, 35234), (203, 35162), (208, 35132), (212, 35099), (213, 35093), (214, 35090), (230, 35009), (239, 34979), (279, 34925), (304, 34754), (321, 34658), (329, 34616), (333, 34598), (343, 34550), (346, 34538), (356, 34481), (357, 34475), (360, 34460), (363, 34433), (370, 34370), (371, 34364), (377, 34340), (402, 34235), (421, 34166), (426, 34148), (432, 34118), (459, 34040), (465, 34004), (481, 33941),

Gene: Marius\_55 Start: 35793, Stop: 33778, Start Num: 55

Candidate Starts for Marius\_55:



(Start: 55 @35793 has 95 MA's), (Start: 71 @35700 has 1 MA's), (Start: 73 @35691 has 3 MA's), (Start: 88 @35616 has 3 MA's), (Start: 97 @35565 has 1 MA's), (116, 35484), (118, 35475), (127, 35418), (141, 35358), (154, 35298), (157, 35262), (169, 35202), (170, 35193), (179, 35124), (182, 35112), (203, 35052), (208, 35022), (209, 35019), (210, 35007), (212, 34989), (213, 34983), (214, 34980), (221, 34947), (253, 34845), (279, 34815), (304, 34644), (313, 34593), (316, 34572), (321, 34548), (329, 34506), (333, 34488), (343, 34440), (357, 34365), (363, 34323), (370, 34260), (371, 34254), (377, 34230), (402, 34125), (421, 34056), (426, 34038), (428, 34029), (432, 34008), (459, 33930), (465, 33894), (481, 33831),

Gene: Marsus\_41 Start: 18108, Stop: 20051, Start Num: 64

Candidate Starts for Marsus\_41:

(52, 18063), (Start: 64 @18108 has 64 MA's), (Start: 67 @18114 has 1 MA's), (83, 18216), (86, 18237), (90, 18246), (106, 18336), (111, 18345), (112, 18354), (114, 18357), (133, 18462), (144, 18504), (176, 18714), (198, 18771), (207, 18816), (217, 18882), (235, 18972), (248, 18984), (306, 19197), (332, 19341), (333, 19344), (336, 19362), (366, 19518), (390, 19626), (430, 19797), (468, 19935),

Gene: MarysWell\_42 Start: 34488, Stop: 32437, Start Num: 49

Candidate Starts for MarysWell\_42:

(Start: 49 @34488 has 219 MA's), (74, 34374), (Start: 88 @34302 has 3 MA's), (100, 34233), (116, 34170), (118, 34161), (147, 34023), (153, 33984), (158, 33939), (168, 33894), (169, 33885), (175, 33822), (176, 33816), (179, 33807), (203, 33735), (208, 33705), (209, 33702), (212, 33672), (213, 33666), (214, 33663), (239, 33552), (283, 33450), (286, 33435), (308, 33288), (313, 33255), (322, 33207), (329, 33168), (343, 33099), (354, 33042), (356, 33030), (357, 33024), (363, 32982), (365, 32973), (372, 32910), (399, 32793), (410, 32751), (421, 32715), (426, 32697), (428, 32688), (482, 32478),

Gene: Maverick\_50 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Maverick\_50:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (307, 34257), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Maxo\_51 Start: 35450, Stop: 33417, Start Num: 49

Candidate Starts for Maxo\_51:

(Start: 49 @35450 has 219 MA's), (68, 35387), (Start: 73 @35339 has 3 MA's), (78, 35315), (92, 35249), (Start: 97 @35213 has 1 MA's), (102, 35180), (116, 35132), (118, 35123), (127, 35066), (134, 35039), (141, 35006), (169, 34850), (170, 34841), (179, 34772), (203, 34700), (208, 34670), (209, 34667), (212, 34637), (213, 34631), (214, 34628), (232, 34541), (244, 34511), (255, 34499), (261, 34490), (279, 34442), (311, 34238), (329, 34136), (333, 34118), (360, 33977), (363, 33950), (392, 33806), (393, 33803), (399, 33773), (417, 33710), (426, 33677), (428, 33668), (432, 33647), (447, 33599), (465, 33533),

Gene: Mayonnaise\_50 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Mayonnaise\_50:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392,

33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Mazhar510\_50 Start: 35449, Stop: 33416, Start Num: 49

Candidate Starts for Mazhar510\_50:

(Start: 49 @35449 has 219 MA's), (68, 35386), (Start: 73 @35338 has 3 MA's), (78, 35314), (92, 35248), (Start: 97 @35212 has 1 MA's), (102, 35179), (116, 35131), (118, 35122), (127, 35065), (134, 35038), (141, 35005), (169, 34849), (170, 34840), (179, 34771), (203, 34699), (208, 34669), (209, 34666), (212, 34636), (213, 34630), (214, 34627), (232, 34540), (244, 34510), (255, 34498), (261, 34489), (279, 34441), (311, 34237), (329, 34135), (333, 34117), (360, 33976), (363, 33949), (392, 33805), (393, 33802), (399, 33772), (417, 33709), (426, 33676), (428, 33667), (432, 33646), (447, 33598), (465, 33532),

Gene: McFly\_53 Start: 34814, Stop: 32790, Start Num: 45

Candidate Starts for McFly\_53:

(32, 34847), (Start: 45 @34814 has 304 MA's), (Start: 88 @34628 has 3 MA's), (102, 34544), (116, 34496), (118, 34487), (127, 34427), (141, 34367), (153, 34310), (157, 34271), (165, 34238), (169, 34211), (170, 34202), (175, 34148), (179, 34133), (203, 34061), (208, 34031), (212, 33998), (213, 33992), (214, 33989), (283, 33797), (307, 33638), (311, 33617), (331, 33503), (344, 33443), (346, 33434), (354, 33389), (357, 33371), (361, 33338), (378, 33236), (380, 33230), (393, 33176), (398, 33149), (399, 33146), (402, 33137), (417, 33083), (432, 33020), (440, 32990), (451, 32963),

Gene: Medusa\_50 Start: 35447, Stop: 33414, Start Num: 49

Candidate Starts for Medusa\_50:

(Start: 49 @35447 has 219 MA's), (68, 35384), (Start: 73 @35336 has 3 MA's), (78, 35312), (92, 35246), (Start: 97 @35210 has 1 MA's), (102, 35177), (116, 35129), (118, 35120), (127, 35063), (134, 35036), (141, 35003), (169, 34847), (170, 34838), (179, 34769), (203, 34697), (208, 34667), (209, 34664), (212, 34634), (213, 34628), (214, 34625), (232, 34538), (244, 34508), (255, 34496), (261, 34487), (279, 34439), (311, 34235), (329, 34133), (333, 34115), (360, 33974), (363, 33947), (392, 33803), (393, 33800), (399, 33770), (417, 33707), (426, 33674), (428, 33665), (432, 33644), (447, 33596), (465, 33530),

Gene: MeeZee\_50 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for MeeZee\_50:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: MeganTheeKilla\_22 Start: 8030, Stop: 9973, Start Num: 65

Candidate Starts for MeganTheeKilla\_22:

(62, 8021), (Start: 65 @8030 has 26 MA's), (Start: 73 @8087 has 3 MA's), (90, 8168), (111, 8267), (112, 8276), (114, 8279), (133, 8384), (163, 8534), (169, 8564), (198, 8690), (244, 8897), (304, 9110), (314, 9164), (327, 9236), (332, 9260), (351, 9332), (389, 9542), (390, 9545), (409, 9641), (413, 9650), (473, 9878),

Gene: Melvin\_52 Start: 35443, Stop: 33410, Start Num: 49

Candidate Starts for Melvin\_52:

(Start: 49 @35443 has 219 MA's), (68, 35380), (Start: 73 @35332 has 3 MA's), (78, 35308), (92, 35242), (Start: 97 @35206 has 1 MA's), (102, 35173), (116, 35125), (118, 35116), (127, 35059), (134,

35032), (141, 34999), (169, 34843), (170, 34834), (179, 34765), (203, 34693), (208, 34663), (209, 34660), (212, 34630), (213, 34624), (214, 34621), (232, 34534), (244, 34504), (255, 34492), (261, 34483), (279, 34435), (311, 34231), (329, 34129), (333, 34111), (360, 33970), (363, 33943), (392, 33799), (393, 33796), (399, 33766), (417, 33703), (426, 33670), (428, 33661), (432, 33640), (447, 33592), (465, 33526),

Gene: Methuselah\_50 Start: 35930, Stop: 33912, Start Num: 55

Candidate Starts for Methuselah\_50:

(Start: 55 @35930 has 95 MA's), (Start: 71 @35837 has 1 MA's), (Start: 73 @35828 has 3 MA's), (78, 35804), (Start: 88 @35753 has 3 MA's), (Start: 97 @35702 has 1 MA's), (116, 35621), (118, 35612), (141, 35495), (157, 35399), (169, 35339), (176, 35270), (179, 35261), (180, 35258), (182, 35249), (203, 35189), (208, 35159), (209, 35156), (210, 35144), (212, 35126), (213, 35120), (214, 35117), (235, 35012), (239, 35006), (279, 34949), (311, 34745), (313, 34730), (316, 34709), (321, 34685), (326, 34658), (329, 34643), (356, 34505), (357, 34499), (360, 34484), (363, 34457), (370, 34394), (371, 34388), (377, 34364), (402, 34259), (411, 34223), (432, 34142), (459, 34064), (465, 34028), (481, 33965),

Gene: Micasa\_45 Start: 34841, Stop: 32712, Start Num: 49

Candidate Starts for Micasa\_45:

(Start: 49 @34841 has 219 MA's), (Start: 88 @34655 has 3 MA's), (Start: 97 @34604 has 1 MA's), (116, 34523), (118, 34514), (141, 34394), (146, 34379), (164, 34268), (165, 34265), (169, 34238), (170, 34229), (176, 34169), (179, 34160), (184, 34136), (203, 34049), (208, 34019), (209, 34016), (212, 33986), (213, 33980), (214, 33977), (239, 33866), (283, 33725), (308, 33563), (313, 33530), (322, 33482), (329, 33443), (343, 33374), (354, 33317), (356, 33305), (357, 33299), (363, 33257), (365, 33248), (372, 33185), (394, 33095), (399, 33068), (410, 33026), (421, 32990), (426, 32972), (482, 32753),

Gene: Microwolf\_54 Start: 35922, Stop: 33904, Start Num: 55

Candidate Starts for Microwolf\_54:

(Start: 55 @35922 has 95 MA's), (Start: 73 @35820 has 3 MA's), (78, 35796), (Start: 88 @35745 has 3 MA's), (Start: 97 @35694 has 1 MA's), (116, 35613), (118, 35604), (141, 35484), (154, 35424), (157, 35388), (169, 35328), (179, 35250), (203, 35178), (208, 35148), (212, 35115), (213, 35109), (214, 35106), (230, 35025), (239, 34995), (279, 34941), (304, 34770), (321, 34674), (329, 34632), (333, 34614), (343, 34566), (346, 34554), (356, 34497), (357, 34491), (360, 34476), (363, 34449), (370, 34386), (371, 34380), (377, 34356), (402, 34251), (421, 34182), (426, 34164), (428, 34155), (432, 34134), (459, 34056), (465, 34020), (481, 33957),

Gene: MiculUcigas\_51 Start: 35654, Stop: 33615, Start Num: 45

Candidate Starts for MiculUcigas\_51:

(Start: 45 @35654 has 304 MA's), (Start: 71 @35549 has 1 MA's), (Start: 73 @35540 has 3 MA's), (Start: 88 @35465 has 3 MA's), (Start: 97 @35414 has 1 MA's), (102, 35381), (118, 35324), (127, 35264), (134, 35237), (141, 35204), (169, 35048), (179, 34970), (182, 34958), (198, 34916), (203, 34898), (208, 34868), (209, 34865), (210, 34853), (212, 34835), (213, 34829), (214, 34826), (272, 34667), (283, 34622), (290, 34580), (308, 34460), (311, 34442), (316, 34406), (329, 34340), (331, 34328), (344, 34268), (354, 34214), (357, 34196), (365, 34145), (377, 34064), (380, 34055), (393, 34001), (399, 33971), (402, 33962), (417, 33908), (432, 33845), (447, 33797), (451, 33788),

Gene: Midas2\_43 Start: 34563, Stop: 32434, Start Num: 49

Candidate Starts for Midas2\_43:

(Start: 49 @34563 has 219 MA's), (Start: 88 @34377 has 3 MA's), (Start: 97 @34326 has 1 MA's), (116, 34245), (118, 34236), (141, 34116), (146, 34101), (164, 33990), (165, 33987), (169, 33960), (170, 33951), (179, 33882), (184, 33858), (203, 33771), (208, 33741), (209, 33738), (212, 33708), (213, 33702), (214, 33699), (239, 33588), (283, 33447), (286, 33432), (308, 33285), (313, 33252),

(322, 33204), (329, 33165), (343, 33096), (354, 33039), (356, 33027), (357, 33021), (363, 32979), (365, 32970), (372, 32907), (394, 32817), (399, 32790), (410, 32748), (421, 32712), (426, 32694), (428, 32685), (432, 32664), (482, 32475),

Gene: Miko\_48 Start: 35863, Stop: 33812, Start Num: 45

Candidate Starts for Miko\_48:

(Start: 45 @35863 has 304 MA's), (61, 35824), (Start: 71 @35761 has 1 MA's), (Start: 73 @35752 has 3 MA's), (Start: 88 @35677 has 3 MA's), (Start: 97 @35626 has 1 MA's), (102, 35593), (116, 35545), (118, 35536), (127, 35476), (131, 35464), (141, 35416), (169, 35260), (170, 35251), (179, 35182), (192, 35146), (203, 35116), (208, 35086), (209, 35083), (210, 35071), (212, 35053), (213, 35047), (214, 35044), (259, 34900), (272, 34864), (283, 34819), (290, 34777), (311, 34639), (329, 34537), (331, 34525), (344, 34465), (346, 34456), (357, 34393), (361, 34360), (393, 34198), (403, 34156), (417, 34105), (432, 34042), (447, 33994), (451, 33985),

Gene: Milcery\_44 Start: 34630, Stop: 32540, Start Num: 49

Candidate Starts for Milcery\_44:

(Start: 49 @34630 has 219 MA's), (Start: 88 @34444 has 3 MA's), (Start: 97 @34393 has 1 MA's), (116, 34312), (118, 34303), (141, 34183), (146, 34168), (164, 34057), (165, 34054), (169, 34027), (170, 34018), (176, 33958), (179, 33949), (184, 33925), (203, 33838), (208, 33808), (209, 33805), (212, 33775), (213, 33769), (214, 33766), (239, 33655), (283, 33553), (308, 33391), (313, 33358), (322, 33310), (329, 33271), (343, 33202), (354, 33145), (356, 33133), (357, 33127), (363, 33085), (365, 33076), (372, 33013), (394, 32923), (399, 32896), (410, 32854), (421, 32818), (426, 32800), (428, 32791), (482, 32581),

Gene: Mildred21\_41 Start: 18540, Stop: 20480, Start Num: 64

Candidate Starts for Mildred21\_41:

(Start: 64 @18540 has 64 MA's), (83, 18645), (86, 18666), (90, 18675), (106, 18765), (111, 18774), (112, 18783), (114, 18786), (133, 18891), (176, 19143), (235, 19401), (248, 19413), (306, 19626), (333, 19773), (364, 19929), (366, 19947), (369, 19983), (390, 20055), (430, 20226), (438, 20265), (468, 20364),

Gene: Millski\_49 Start: 35449, Stop: 33416, Start Num: 49

Candidate Starts for Millski\_49:

(Start: 49 @35449 has 219 MA's), (68, 35386), (Start: 73 @35338 has 3 MA's), (78, 35314), (92, 35248), (Start: 97 @35212 has 1 MA's), (102, 35179), (116, 35131), (118, 35122), (127, 35065), (134, 35038), (141, 35005), (169, 34849), (170, 34840), (179, 34771), (203, 34699), (208, 34669), (209, 34666), (212, 34636), (213, 34630), (214, 34627), (232, 34540), (244, 34510), (255, 34498), (261, 34489), (279, 34441), (311, 34237), (329, 34135), (333, 34117), (360, 33976), (363, 33949), (392, 33805), (393, 33802), (399, 33772), (417, 33709), (426, 33676), (428, 33667), (432, 33646), (447, 33598), (465, 33532),

Gene: MindFlayer\_43 Start: 19143, Stop: 21083, Start Num: 64

Candidate Starts for MindFlayer\_43:

(Start: 64 @19143 has 64 MA's), (90, 19275), (96, 19311), (102, 19347), (111, 19374), (114, 19386), (133, 19491), (148, 19548), (185, 19773), (206, 19827), (217, 19911), (228, 19962), (235, 20001), (248, 20013), (285, 20091), (297, 20190), (306, 20226), (333, 20373), (366, 20547), (369, 20583), (389, 20652), (390, 20655), (430, 20826), (468, 20964),

Gene: MinecraftSteve\_57 Start: 34981, Stop: 32918, Start Num: 40

Candidate Starts for MinecraftSteve\_57:

(Start: 40 @34981 has 21 MA's), (77, 34837), (87, 34786), (Start: 88 @34783 has 3 MA's), (116, 34651), (118, 34642), (141, 34522), (170, 34357), (174, 34318), (179, 34288), (194, 34246), (203, 34222), (208, 34192), (212, 34159), (213, 34153), (214, 34150), (270, 33976), (275, 33964), (283,

33928), (310, 33751), (311, 33748), (316, 33712), (329, 33646), (337, 33607), (339, 33595), (356, 33508), (357, 33502), (363, 33460), (411, 33229), (432, 33148), (452, 33088), (459, 33070), (479, 32977), (482, 32959),

Gene: Miramae\_48 Start: 34895, Stop: 32859, Start Num: 49

Candidate Starts for Miramae\_48:

(Start: 49 @34895 has 219 MA's), (92, 34694), (Start: 97 @34658 has 1 MA's), (102, 34625), (116, 34577), (118, 34568), (141, 34451), (169, 34295), (170, 34286), (179, 34217), (182, 34205), (202, 34154), (203, 34145), (208, 34115), (209, 34112), (212, 34082), (213, 34076), (214, 34073), (221, 34040), (239, 33962), (274, 33899), (279, 33884), (311, 33680), (333, 33560), (356, 33440), (360, 33419), (363, 33392), (392, 33248), (393, 33245), (399, 33215), (411, 33170), (426, 33119), (428, 33110), (432, 33089), (447, 33041), (465, 32975),

Gene: Misomonster\_55 Start: 35933, Stop: 33915, Start Num: 55

Candidate Starts for Misomonster\_55:

(Start: 55 @35933 has 95 MA's), (Start: 71 @35840 has 1 MA's), (Start: 73 @35831 has 3 MA's), (78, 35807), (Start: 88 @35756 has 3 MA's), (Start: 97 @35705 has 1 MA's), (116, 35624), (118, 35615), (141, 35498), (157, 35402), (169, 35342), (176, 35273), (179, 35264), (180, 35261), (182, 35252), (203, 35192), (208, 35162), (209, 35159), (210, 35147), (212, 35129), (213, 35123), (214, 35120), (235, 35015), (239, 35009), (279, 34952), (311, 34748), (313, 34733), (316, 34712), (321, 34688), (326, 34661), (329, 34646), (356, 34508), (357, 34502), (360, 34487), (363, 34460), (370, 34397), (371, 34391), (377, 34367), (402, 34262), (411, 34226), (432, 34145), (459, 34067), (465, 34031), (481, 33968),

Gene: MissWhite\_50 Start: 34123, Stop: 32183, Start Num: 71

Candidate Starts for MissWhite\_50:

(Start: 45 @34228 has 304 MA's), (Start: 71 @34123 has 1 MA's), (Start: 73 @34114 has 3 MA's), (Start: 88 @34039 has 3 MA's), (102, 33955), (116, 33907), (118, 33898), (128, 33835), (141, 33778), (168, 33631), (169, 33622), (174, 33574), (179, 33544), (202, 33487), (203, 33478), (208, 33448), (212, 33415), (213, 33409), (214, 33406), (232, 33319), (260, 33265), (283, 33184), (290, 33142), (311, 33004), (329, 32902), (331, 32890), (344, 32830), (354, 32776), (357, 32758), (361, 32725), (363, 32716), (369, 32659), (393, 32563), (417, 32476), (432, 32413),

Gene: Moab\_21 Start: 8180, Stop: 10123, Start Num: 65

Candidate Starts for Moab\_21:

(62, 8171), (Start: 65 @8180 has 26 MA's), (Start: 73 @8237 has 3 MA's), (90, 8318), (111, 8417), (114, 8429), (133, 8534), (198, 8840), (208, 8888), (325, 9374), (327, 9386), (332, 9410), (351, 9482), (366, 9587), (390, 9695), (412, 9797), (467, 9995), (473, 10028),

Gene: MoneyMay\_54 Start: 35906, Stop: 33888, Start Num: 55

Candidate Starts for MoneyMay\_54:

(Start: 55 @35906 has 95 MA's), (Start: 71 @35813 has 1 MA's), (Start: 73 @35804 has 3 MA's), (78, 35780), (Start: 88 @35729 has 3 MA's), (Start: 97 @35678 has 1 MA's), (116, 35597), (118, 35588), (141, 35468), (154, 35408), (157, 35372), (169, 35312), (179, 35234), (203, 35162), (208, 35132), (212, 35099), (213, 35093), (214, 35090), (230, 35009), (239, 34979), (279, 34925), (304, 34754), (321, 34658), (329, 34616), (333, 34598), (343, 34550), (346, 34538), (356, 34481), (357, 34475), (360, 34460), (363, 34433), (370, 34370), (371, 34364), (377, 34340), (402, 34235), (421, 34166), (426, 34148), (432, 34118), (459, 34040), (465, 34004), (481, 33941),

Gene: Morpher26\_49 Start: 35430, Stop: 33412, Start Num: 49

Candidate Starts for Morpher26\_49:

(Start: 49 @35430 has 219 MA's), (Start: 73 @35319 has 3 MA's), (92, 35229), (Start: 97 @35193 has 1 MA's), (102, 35160), (116, 35112), (118, 35103), (127, 35043), (141, 34983), (169, 34827), (170,

34818), (179, 34749), (182, 34737), (201, 34686), (203, 34677), (208, 34647), (209, 34644), (212, 34614), (213, 34608), (214, 34605), (248, 34485), (270, 34461), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (343, 34062), (356, 33993), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (411, 33723), (426, 33672), (428, 33663), (432, 33642), (465, 33528), (479, 33471),

Gene: Morrow\_51 Start: 35454, Stop: 33421, Start Num: 49

Candidate Starts for Morrow\_51:

(Start: 49 @35454 has 219 MA's), (68, 35391), (Start: 73 @35343 has 3 MA's), (78, 35319), (92, 35253), (Start: 97 @35217 has 1 MA's), (102, 35184), (116, 35136), (118, 35127), (127, 35070), (134, 35043), (141, 35010), (169, 34854), (170, 34845), (179, 34776), (203, 34704), (208, 34674), (209, 34671), (212, 34641), (213, 34635), (214, 34632), (232, 34545), (244, 34515), (255, 34503), (261, 34494), (279, 34446), (311, 34242), (329, 34140), (333, 34122), (360, 33981), (363, 33954), (392, 33810), (393, 33807), (399, 33777), (417, 33714), (426, 33681), (428, 33672), (432, 33651), (447, 33603), (465, 33537),

Gene: MuchMore\_57 Start: 35898, Stop: 33880, Start Num: 55

Candidate Starts for MuchMore\_57:

(Start: 55 @35898 has 95 MA's), (Start: 73 @35796 has 3 MA's), (78, 35772), (Start: 88 @35721 has 3 MA's), (Start: 97 @35670 has 1 MA's), (116, 35589), (118, 35580), (141, 35460), (154, 35400), (157, 35364), (169, 35304), (179, 35226), (203, 35154), (208, 35124), (212, 35091), (213, 35085), (214, 35082), (230, 35001), (239, 34971), (279, 34917), (304, 34746), (321, 34650), (329, 34608), (333, 34590), (343, 34542), (346, 34530), (356, 34473), (357, 34467), (360, 34452), (363, 34425), (370, 34362), (371, 34356), (377, 34332), (402, 34227), (421, 34158), (426, 34140), (428, 34131), (432, 34110), (459, 34032), (465, 33996), (481, 33933),

Gene: Mugiwara\_46 Start: 19338, Stop: 21278, Start Num: 64

Candidate Starts for Mugiwara\_46:

(Start: 64 @19338 has 64 MA's), (90, 19470), (102, 19542), (111, 19569), (114, 19581), (133, 19686), (151, 19776), (185, 19968), (217, 20106), (228, 20157), (235, 20196), (248, 20208), (285, 20286), (297, 20385), (306, 20421), (327, 20541), (333, 20568), (366, 20742), (369, 20778), (389, 20847), (390, 20850), (430, 21021), (468, 21159),

Gene: MulchMansion\_40 Start: 18338, Stop: 20281, Start Num: 64

Candidate Starts for MulchMansion\_40:

(52, 18293), (Start: 64 @18338 has 64 MA's), (Start: 67 @18344 has 1 MA's), (83, 18446), (86, 18467), (90, 18476), (106, 18566), (111, 18575), (112, 18584), (114, 18587), (133, 18692), (144, 18734), (176, 18944), (198, 19001), (217, 19112), (235, 19202), (248, 19214), (306, 19427), (307, 19436), (324, 19532), (333, 19574), (366, 19748), (390, 19856), (430, 20027), (438, 20066), (468, 20165),

Gene: Mulciber\_51 Start: 34844, Stop: 32823, Start Num: 50

Candidate Starts for Mulciber\_51:

(28, 34895), (41, 34862), (Start: 50 @34844 has 19 MA's), (Start: 73 @34736 has 3 MA's), (Start: 88 @34661 has 3 MA's), (116, 34529), (118, 34520), (141, 34400), (169, 34244), (174, 34196), (178, 34169), (179, 34166), (182, 34154), (197, 34121), (203, 34100), (210, 34055), (212, 34037), (213, 34031), (214, 34028), (250, 33908), (283, 33833), (286, 33818), (290, 33791), (311, 33653), (321, 33593), (329, 33551), (333, 33533), (347, 33461), (357, 33407), (360, 33392), (361, 33374), (377, 33275), (393, 33212), (402, 33173), (426, 33083), (432, 33053), (447, 33005),

Gene: Munch\_52 Start: 35307, Stop: 33283, Start Num: 50

Candidate Starts for Munch\_52:

(28, 35358), (41, 35325), (Start: 50 @35307 has 19 MA's), (Start: 73 @35199 has 3 MA's), (Start: 88 @35124 has 3 MA's), (116, 34992), (118, 34983), (141, 34863), (169, 34707), (174, 34659), (178,

34632), (179, 34629), (182, 34617), (197, 34584), (203, 34563), (210, 34518), (212, 34500), (213, 34494), (214, 34491), (270, 34341), (283, 34293), (286, 34278), (311, 34113), (329, 34011), (333, 33993), (347, 33921), (357, 33867), (360, 33852), (361, 33834), (393, 33672), (402, 33633), (426, 33543), (432, 33513), (447, 33465),

Gene: Mundrea\_49 Start: 35444, Stop: 33414, Start Num: 49

Candidate Starts for Mundrea\_49:

(Start: 49 @35444 has 219 MA's), (Start: 73 @35333 has 3 MA's), (92, 35243), (Start: 97 @35207 has 1 MA's), (102, 35174), (116, 35126), (118, 35117), (127, 35060), (141, 35000), (169, 34844), (170, 34835), (179, 34766), (182, 34754), (202, 34703), (203, 34694), (208, 34664), (209, 34661), (212, 34631), (213, 34625), (214, 34622), (221, 34589), (237, 34514), (279, 34439), (311, 34235), (329, 34133), (333, 34115), (343, 34064), (352, 34025), (356, 33995), (360, 33974), (363, 33947), (392, 33803), (393, 33800), (399, 33770), (411, 33725), (421, 33692), (426, 33674), (428, 33665), (432, 33644), (465, 33530),

Gene: Muntaha\_16 Start: 6892, Stop: 8838, Start Num: 65

Candidate Starts for Muntaha\_16:

(Start: 65 @6892 has 26 MA's), (90, 7033), (Start: 103 @7108 has 3 MA's), (111, 7132), (114, 7144), (133, 7249), (159, 7390), (206, 7582), (213, 7642), (327, 8101), (332, 8125), (347, 8185), (381, 8374), (390, 8410), (412, 8512), (416, 8527),

Gene: MyraDee\_44 Start: 32002, Stop: 29960, Start Num: 49

Candidate Starts for MyraDee\_44:

(Start: 49 @32002 has 219 MA's), (Start: 71 @31900 has 1 MA's), (Start: 73 @31891 has 3 MA's), (Start: 88 @31816 has 3 MA's), (Start: 97 @31765 has 1 MA's), (100, 31747), (102, 31732), (116, 31684), (118, 31675), (131, 31603), (141, 31555), (165, 31426), (169, 31399), (176, 31330), (179, 31321), (182, 31309), (193, 31279), (203, 31255), (208, 31225), (209, 31222), (212, 31192), (213, 31186), (214, 31183), (270, 31021), (275, 31009), (283, 30973), (299, 30859), (311, 30793), (321, 30733), (326, 30706), (348, 30598), (354, 30565), (356, 30553), (363, 30505), (379, 30406), (392, 30349), (395, 30337), (402, 30307), (403, 30304), (410, 30274), (417, 30253), (419, 30247), (421, 30238), (432, 30190), (447, 30142), (482, 30001),

Gene: Myxus\_51 Start: 35670, Stop: 33631, Start Num: 45

Candidate Starts for Myxus\_51:

(Start: 45 @35670 has 304 MA's), (Start: 73 @35556 has 3 MA's), (75, 35541), (78, 35532), (Start: 97 @35430 has 1 MA's), (118, 35340), (127, 35280), (141, 35220), (168, 35073), (169, 35064), (179, 34986), (182, 34974), (202, 34929), (203, 34920), (208, 34890), (210, 34875), (212, 34857), (213, 34851), (214, 34848), (272, 34683), (280, 34659), (283, 34638), (311, 34458), (331, 34344), (344, 34284), (361, 34179), (363, 34170), (393, 34017), (399, 33987), (417, 33924), (432, 33861),

Gene: NaSiaTalie\_51 Start: 35748, Stop: 33712, Start Num: 45

Candidate Starts for NaSiaTalie\_51:

(Start: 45 @35748 has 304 MA's), (61, 35709), (Start: 73 @35637 has 3 MA's), (Start: 88 @35562 has 3 MA's), (Start: 97 @35511 has 1 MA's), (102, 35478), (118, 35421), (127, 35361), (134, 35334), (141, 35301), (169, 35145), (179, 35067), (182, 35055), (198, 35013), (203, 34995), (208, 34965), (209, 34962), (210, 34950), (212, 34932), (213, 34926), (214, 34923), (272, 34764), (283, 34719), (290, 34677), (311, 34539), (316, 34503), (329, 34437), (331, 34425), (344, 34365), (354, 34311), (357, 34293), (365, 34242), (377, 34161), (380, 34152), (393, 34098), (399, 34068), (402, 34059), (417, 34005), (432, 33942), (447, 33894), (451, 33885),

Gene: Nabi\_48 Start: 32494, Stop: 34584, Start Num: 45

Candidate Starts for Nabi\_48:

(27, 32452), (30, 32458), (Start: 45 @32494 has 304 MA's), (61, 32539), (79, 32650), (Start: 88 @32704 has 3 MA's), (90, 32710), (Start: 97 @32755 has 1 MA's), (116, 32836), (118, 32845), (132, 32923), (134, 32932), (141, 32965), (154, 33025), (156, 33058), (161, 33082), (168, 33115), (169, 33124), (179, 33202), (180, 33205), (195, 33262), (203, 33292), (212, 33355), (214, 33364), (225, 33415), (242, 33484), (275, 33529), (279, 33541), (293, 33640), (297, 33673), (307, 33730), (311, 33751), (316, 33787), (326, 33838), (334, 33874), (346, 33934), (357, 33997), (358, 34003), (365, 34048), (371, 34108), (378, 34135), (384, 34147), (392, 34201), (394, 34207), (404, 34252), (411, 34273), (421, 34306), (426, 34324), (432, 34354), (434, 34366), (443, 34393), (462, 34453), (479, 34525), (485, 34576),

Gene: Naca\_45 Start: 34927, Stop: 32849, Start Num: 24

Candidate Starts for Naca\_45:

(Start: 24 @34927 has 1 MA's), (Start: 49 @34885 has 219 MA's), (Start: 88 @34699 has 3 MA's), (Start: 97 @34648 has 1 MA's), (102, 34615), (116, 34567), (118, 34558), (123, 34516), (147, 34420), (153, 34381), (158, 34336), (168, 34291), (169, 34282), (175, 34219), (176, 34213), (179, 34204), (199, 34150), (203, 34132), (208, 34102), (209, 34099), (210, 34087), (212, 34069), (213, 34063), (214, 34060), (283, 33862), (290, 33820), (308, 33700), (310, 33685), (313, 33667), (322, 33619), (329, 33580), (343, 33511), (354, 33454), (356, 33442), (357, 33436), (363, 33394), (365, 33385), (377, 33304), (392, 33238), (395, 33226), (399, 33205), (410, 33163), (421, 33127), (426, 33109), (428, 33100), (482, 32890),

Gene: Naiad\_40 Start: 32087, Stop: 30042, Start Num: 45

Candidate Starts for Naiad\_40:

(Start: 45 @32087 has 304 MA's), (74, 31967), (87, 31898), (Start: 97 @31844 has 1 MA's), (116, 31763), (118, 31754), (127, 31694), (132, 31676), (154, 31574), (156, 31541), (157, 31538), (159, 31529), (164, 31508), (168, 31487), (169, 31478), (175, 31415), (179, 31400), (181, 31394), (203, 31334), (209, 31301), (212, 31271), (213, 31265), (214, 31262), (252, 31127), (304, 30914), (310, 30881), (326, 30791), (328, 30782), (354, 30650), (363, 30590), (372, 30518), (385, 30479), (387, 30476), (388, 30464), (402, 30392), (421, 30320), (428, 30293), (465, 30158),

Gene: Naji\_53 Start: 35562, Stop: 33481, Start Num: 49

Candidate Starts for Naji\_53:

(Start: 49 @35562 has 219 MA's), (Start: 71 @35457 has 1 MA's), (Start: 73 @35448 has 3 MA's), (Start: 88 @35373 has 3 MA's), (102, 35289), (116, 35241), (118, 35232), (127, 35172), (147, 35094), (153, 35055), (156, 35019), (169, 34956), (175, 34893), (179, 34878), (203, 34782), (208, 34752), (209, 34749), (212, 34719), (213, 34713), (214, 34710), (232, 34623), (270, 34548), (283, 34500), (311, 34320), (329, 34218), (331, 34206), (344, 34146), (346, 34137), (354, 34092), (356, 34080), (360, 34059), (363, 34032), (371, 33963), (393, 33867), (398, 33840), (402, 33828), (411, 33792), (432, 33711), (444, 33669),

Gene: Nancinator\_41 Start: 32007, Stop: 29962, Start Num: 45

Candidate Starts for Nancinator\_41:

(Start: 45 @32007 has 304 MA's), (74, 31887), (87, 31818), (Start: 97 @31764 has 1 MA's), (116, 31683), (118, 31674), (127, 31614), (132, 31596), (154, 31494), (156, 31461), (157, 31458), (159, 31449), (164, 31428), (168, 31407), (169, 31398), (175, 31335), (179, 31320), (181, 31314), (203, 31254), (209, 31221), (212, 31191), (213, 31185), (214, 31182), (252, 31047), (301, 30852), (304, 30834), (310, 30801), (326, 30711), (328, 30702), (354, 30570), (363, 30510), (372, 30438), (385, 30399), (387, 30396), (388, 30384), (393, 30351), (402, 30312), (421, 30240), (428, 30213), (465, 30078),

Gene: Nanodon\_49 Start: 32264, Stop: 34354, Start Num: 45

Candidate Starts for Nanodon\_49:



(Start: 45 @32264 has 304 MA's), (79, 32420), (Start: 88 @32474 has 3 MA's), (90, 32480), (Start: 97 @32525 has 1 MA's), (116, 32606), (118, 32615), (132, 32693), (141, 32735), (156, 32828), (157, 32831), (161, 32852), (169, 32894), (179, 32972), (180, 32975), (195, 33032), (203, 33062), (212, 33125), (214, 33134), (225, 33185), (234, 33236), (275, 33299), (279, 33311), (297, 33443), (311, 33521), (313, 33536), (316, 33557), (326, 33608), (357, 33767), (358, 33773), (360, 33782), (365, 33818), (369, 33866), (371, 33878), (378, 33905), (392, 33971), (394, 33977), (404, 34022), (411, 34043), (421, 34076), (426, 34094), (432, 34124), (443, 34163), (462, 34223), (478, 34292),

Gene: Natosaleda\_40 Start: 32006, Stop: 29961, Start Num: 45

Candidate Starts for Natosaleda\_40:

(Start: 45 @32006 has 304 MA's), (74, 31886), (87, 31817), (Start: 97 @31763 has 1 MA's), (116, 31682), (118, 31673), (127, 31613), (132, 31595), (154, 31493), (156, 31460), (157, 31457), (159, 31448), (164, 31427), (168, 31406), (169, 31397), (175, 31334), (179, 31319), (181, 31313), (203, 31253), (209, 31220), (212, 31190), (213, 31184), (214, 31181), (252, 31046), (301, 30851), (304, 30833), (310, 30800), (326, 30710), (328, 30701), (354, 30569), (363, 30509), (372, 30437), (385, 30398), (387, 30395), (388, 30383), (393, 30350), (402, 30311), (421, 30239), (428, 30212), (465, 30077),

Gene: Navo\_40 Start: 18459, Stop: 20402, Start Num: 64

Candidate Starts for Navo\_40:

(Start: 64 @18459 has 64 MA's), (Start: 67 @18465 has 1 MA's), (83, 18567), (86, 18588), (90, 18597), (106, 18687), (111, 18696), (112, 18705), (114, 18708), (133, 18813), (198, 19122), (217, 19233), (235, 19323), (248, 19335), (306, 19548), (333, 19695), (349, 19758), (366, 19869), (390, 19977), (430, 20148), (438, 20187), (468, 20286),

Gene: NearlyHeadless\_47 Start: 33763, Stop: 31724, Start Num: 49

Candidate Starts for NearlyHeadless\_47:

(Start: 49 @33763 has 219 MA's), (75, 33637), (87, 33580), (Start: 88 @33577 has 3 MA's), (Start: 97 @33526 has 1 MA's), (102, 33493), (116, 33445), (118, 33436), (123, 33394), (147, 33298), (153, 33259), (158, 33214), (168, 33169), (169, 33160), (175, 33097), (176, 33091), (179, 33082), (180, 33079), (203, 33010), (208, 32980), (209, 32977), (212, 32947), (213, 32941), (214, 32938), (283, 32740), (311, 32557), (316, 32521), (329, 32455), (350, 32356), (356, 32317), (363, 32269), (365, 32260), (376, 32179), (399, 32080), (411, 32035), (421, 32002), (428, 31975), (432, 31954), (436, 31936), (482, 31765),

Gene: Nebkiss\_88 Start: 50325, Stop: 52307, Start Num: 48

Candidate Starts for Nebkiss\_88:

(Start: 48 @50325 has 2 MA's), (85, 50511), (102, 50604), (114, 50649), (118, 50667), (120, 50691), (121, 50706), (122, 50709), (125, 50724), (136, 50775), (140, 50790), (149, 50826), (176, 51021), (185, 51051), (203, 51096), (209, 51129), (213, 51165), (215, 51171), (218, 51192), (227, 51240), (233, 51267), (236, 51273), (271, 51306), (278, 51327), (281, 51333), (285, 51360), (293, 51426), (296, 51453), (300, 51465), (315, 51543), (319, 51573), (321, 51576), (330, 51615), (333, 51627), (347, 51684), (354, 51717), (360, 51750), (361, 51768), (362, 51774), (363, 51777), (366, 51798), (392, 51927), (393, 51930), (398, 51954), (423, 52044), (433, 52092), (435, 52101), (441, 52116), (450, 52140), (454, 52152), (466, 52203), (468, 52215), (471, 52230), (474, 52239), (481, 52263),

Gene: Nebs\_51 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Nebs\_51:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392,

33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Nebulosus\_55 Start: 34691, Stop: 32628, Start Num: 40

Candidate Starts for Nebulosus\_55:

(Start: 40 @34691 has 21 MA's), (87, 34496), (Start: 88 @34493 has 3 MA's), (116, 34361), (118, 34352), (141, 34232), (170, 34067), (174, 34028), (179, 33998), (194, 33956), (203, 33932), (208, 33902), (212, 33869), (213, 33863), (214, 33860), (270, 33686), (275, 33674), (283, 33638), (310, 33461), (311, 33458), (316, 33422), (329, 33356), (337, 33317), (339, 33305), (356, 33218), (357, 33212), (363, 33170), (411, 32939), (432, 32858), (452, 32798), (459, 32780), (479, 32687), (482, 32669),

Gene: Nedarya\_51 Start: 34137, Stop: 32068, Start Num: 40

Candidate Starts for Nedarya\_51:

(Start: 40 @34137 has 21 MA's), (Start: 71 @34023 has 1 MA's), (Start: 73 @34014 has 3 MA's), (Start: 97 @33888 has 1 MA's), (100, 33870), (102, 33855), (116, 33807), (118, 33798), (121, 33762), (141, 33678), (169, 33522), (174, 33474), (179, 33444), (203, 33378), (208, 33348), (209, 33345), (212, 33315), (213, 33309), (214, 33306), (254, 33168), (263, 33153), (270, 33126), (283, 33078), (311, 32898), (329, 32796), (338, 32748), (341, 32739), (343, 32727), (353, 32685), (357, 32652), (363, 32610), (365, 32601), (369, 32553), (389, 32478), (393, 32457), (394, 32454), (411, 32379), (421, 32346), (426, 32328), (432, 32298), (451, 32241), (479, 32127), (482, 32109),

Gene: Neeharika16\_52 Start: 34274, Stop: 32250, Start Num: 45

Candidate Starts for Neeharika16\_52:

(32, 34307), (Start: 45 @34274 has 304 MA's), (Start: 88 @34088 has 3 MA's), (102, 34004), (116, 33956), (118, 33947), (127, 33887), (141, 33827), (153, 33770), (157, 33731), (165, 33698), (169, 33671), (170, 33662), (175, 33608), (179, 33593), (203, 33521), (208, 33491), (212, 33458), (213, 33452), (214, 33449), (283, 33257), (307, 33098), (311, 33077), (331, 32963), (344, 32903), (346, 32894), (354, 32849), (357, 32831), (361, 32798), (378, 32696), (380, 32690), (393, 32636), (398, 32609), (399, 32606), (402, 32597), (417, 32543), (432, 32480), (440, 32450), (451, 32423),

Gene: Nemo27\_50 Start: 35447, Stop: 33414, Start Num: 49

Candidate Starts for Nemo27\_50:

(Start: 49 @35447 has 219 MA's), (68, 35384), (Start: 73 @35336 has 3 MA's), (78, 35312), (92, 35246), (Start: 97 @35210 has 1 MA's), (102, 35177), (116, 35129), (118, 35120), (127, 35063), (134, 35036), (141, 35003), (169, 34847), (170, 34838), (179, 34769), (203, 34697), (208, 34667), (209, 34664), (212, 34634), (213, 34628), (214, 34625), (232, 34538), (244, 34508), (255, 34496), (261, 34487), (279, 34439), (311, 34235), (329, 34133), (333, 34115), (360, 33974), (363, 33947), (392, 33803), (393, 33800), (399, 33770), (417, 33707), (426, 33674), (428, 33665), (432, 33644), (447, 33596), (465, 33530),

Gene: Nerdos\_46 Start: 31662, Stop: 33752, Start Num: 45

Candidate Starts for Nerdos\_46:

(Start: 45 @31662 has 304 MA's), (78, 31803), (79, 31818), (Start: 88 @31872 has 3 MA's), (90, 31878), (Start: 97 @31923 has 1 MA's), (116, 32004), (118, 32013), (132, 32091), (134, 32100), (141, 32133), (156, 32226), (161, 32250), (169, 32292), (179, 32370), (180, 32373), (203, 32460), (212, 32523), (214, 32532), (275, 32697), (279, 32709), (297, 32841), (302, 32868), (311, 32919), (313, 32934), (316, 32955), (329, 33021), (357, 33165), (358, 33171), (360, 33180), (365, 33216), (369, 33264), (371, 33276), (378, 33303), (384, 33315), (392, 33369), (404, 33420), (411, 33441), (421, 33474), (426, 33492), (432, 33522), (434, 33534), (443, 33561), (462, 33621), (478, 33690), (479, 33693), (485, 33744),

Gene: Newrala\_53 Start: 34816, Stop: 32792, Start Num: 45

Candidate Starts for Newrala\_53:

(32, 34849), (Start: 45 @34816 has 304 MA's), (Start: 88 @34630 has 3 MA's), (102, 34546), (116, 34498), (118, 34489), (127, 34429), (141, 34369), (153, 34312), (157, 34273), (165, 34240), (169, 34213), (170, 34204), (175, 34150), (179, 34135), (203, 34063), (208, 34033), (212, 34000), (213, 33994), (214, 33991), (283, 33799), (307, 33640), (311, 33619), (331, 33505), (344, 33445), (346, 33436), (354, 33391), (357, 33373), (361, 33340), (378, 33238), (380, 33232), (393, 33178), (398, 33151), (399, 33148), (402, 33139), (417, 33085), (432, 33022), (440, 32992), (451, 32965),

Gene: NicoleTera\_50 Start: 36019, Stop: 33998, Start Num: 45

Candidate Starts for NicoleTera\_50:

(Start: 45 @36019 has 304 MA's), (Start: 73 @35908 has 3 MA's), (74, 35905), (87, 35836), (Start: 88 @35833 has 3 MA's), (Start: 97 @35782 has 1 MA's), (102, 35749), (116, 35701), (118, 35692), (127, 35632), (141, 35572), (169, 35416), (170, 35407), (179, 35338), (203, 35266), (208, 35236), (209, 35233), (210, 35221), (212, 35203), (213, 35197), (214, 35194), (240, 35083), (272, 35050), (283, 35005), (290, 34963), (311, 34825), (316, 34789), (329, 34723), (331, 34711), (344, 34651), (354, 34597), (357, 34579), (377, 34447), (380, 34438), (393, 34384), (402, 34345), (417, 34291), (432, 34228), (447, 34180), (451, 34171),

Gene: Nishikigoi\_49 Start: 32987, Stop: 35110, Start Num: 45

Candidate Starts for Nishikigoi\_49:

(18, 32909), (30, 32951), (38, 32969), (Start: 45 @32987 has 304 MA's), (Start: 88 @33197 has 3 MA's), (90, 33203), (116, 33329), (118, 33338), (132, 33416), (134, 33425), (135, 33437), (141, 33458), (161, 33575), (169, 33617), (170, 33626), (179, 33695), (203, 33803), (208, 33833), (209, 33836), (212, 33866), (260, 34031), (279, 34067), (294, 34187), (311, 34277), (316, 34313), (323, 34340), (346, 34460), (357, 34523), (360, 34538), (365, 34574), (371, 34634), (378, 34661), (384, 34673), (388, 34691), (392, 34727), (394, 34733), (404, 34778), (411, 34799), (421, 34832), (426, 34850), (432, 34880), (434, 34892), (446, 34925), (462, 34979), (478, 35048), (485, 35102),

Gene: Noella\_50 Start: 35711, Stop: 33693, Start Num: 55

Candidate Starts for Noella\_50:

(Start: 55 @35711 has 95 MA's), (Start: 71 @35618 has 1 MA's), (Start: 73 @35609 has 3 MA's), (77, 35588), (92, 35519), (Start: 97 @35483 has 1 MA's), (102, 35450), (116, 35402), (118, 35393), (141, 35276), (157, 35180), (169, 35120), (176, 35051), (179, 35042), (182, 35030), (203, 34970), (208, 34940), (209, 34937), (210, 34925), (212, 34907), (213, 34901), (214, 34898), (235, 34793), (239, 34787), (279, 34730), (311, 34526), (321, 34466), (329, 34424), (333, 34406), (346, 34343), (357, 34280), (360, 34265), (363, 34238), (372, 34166), (393, 34079), (403, 34037), (428, 33944), (432, 33923), (465, 33809),

Gene: Noelle\_50 Start: 35722, Stop: 33704, Start Num: 49

Candidate Starts for Noelle\_50:

(Start: 49 @35722 has 219 MA's), (Start: 73 @35611 has 3 MA's), (92, 35521), (Start: 97 @35485 has 1 MA's), (102, 35452), (116, 35404), (118, 35395), (127, 35335), (141, 35275), (169, 35119), (170, 35110), (179, 35041), (182, 35029), (201, 34978), (203, 34969), (208, 34939), (212, 34906), (213, 34900), (214, 34897), (248, 34777), (270, 34753), (279, 34729), (311, 34525), (329, 34423), (333, 34405), (343, 34354), (356, 34285), (360, 34264), (363, 34237), (392, 34093), (393, 34090), (399, 34060), (411, 34015), (426, 33964), (428, 33955), (432, 33934), (465, 33820), (479, 33763),

Gene: NootNoot\_38 Start: 17345, Stop: 19288, Start Num: 64

Candidate Starts for NootNoot\_38:

(Start: 64 @17345 has 64 MA's), (Start: 67 @17351 has 1 MA's), (83, 17453), (86, 17474), (90, 17483), (106, 17573), (111, 17582), (112, 17591), (114, 17594), (133, 17699), (198, 18008), (217, 18119), (235, 18209), (248, 18221), (306, 18434), (333, 18581), (349, 18644), (364, 18737), (366, 18755), (390, 18863), (430, 19034), (438, 19073), (468, 19172),

Gene: Norbert\_49 Start: 35710, Stop: 33692, Start Num: 55

Candidate Starts for Norbert\_49:

(Start: 55 @35710 has 95 MA's), (Start: 71 @35617 has 1 MA's), (Start: 73 @35608 has 3 MA's), (77, 35587), (92, 35518), (Start: 97 @35482 has 1 MA's), (102, 35449), (116, 35401), (118, 35392), (141, 35275), (157, 35179), (169, 35119), (176, 35050), (179, 35041), (182, 35029), (203, 34969), (208, 34939), (209, 34936), (210, 34924), (212, 34906), (213, 34900), (214, 34897), (235, 34792), (239, 34786), (279, 34729), (311, 34525), (321, 34465), (329, 34423), (333, 34405), (346, 34342), (357, 34279), (360, 34264), (363, 34237), (372, 34165), (393, 34078), (403, 34036), (428, 33943), (432, 33922), (465, 33808),

Gene: NorthStar\_49 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for NorthStar\_49:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: NotAPhaseMom\_50 Start: 35452, Stop: 33419, Start Num: 49

Candidate Starts for NotAPhaseMom\_50:

(Start: 49 @35452 has 219 MA's), (68, 35389), (Start: 73 @35341 has 3 MA's), (78, 35317), (92, 35251), (Start: 97 @35215 has 1 MA's), (102, 35182), (116, 35134), (118, 35125), (127, 35068), (134, 35041), (141, 35008), (169, 34852), (170, 34843), (179, 34774), (203, 34702), (208, 34672), (209, 34669), (212, 34639), (213, 34633), (214, 34630), (232, 34543), (244, 34513), (255, 34501), (261, 34492), (279, 34444), (311, 34240), (329, 34138), (333, 34120), (360, 33979), (363, 33952), (392, 33808), (393, 33805), (399, 33775), (417, 33712), (426, 33679), (428, 33670), (432, 33649), (447, 33601), (465, 33535),

Gene: NothingSpecial\_49 Start: 36276, Stop: 34228, Start Num: 45

Candidate Starts for NothingSpecial\_49:

(Start: 45 @36276 has 304 MA's), (Start: 73 @36165 has 3 MA's), (Start: 88 @36090 has 3 MA's), (Start: 97 @36039 has 1 MA's), (102, 36006), (116, 35958), (118, 35949), (127, 35889), (128, 35886), (141, 35829), (169, 35673), (179, 35595), (203, 35529), (208, 35499), (209, 35496), (210, 35484), (212, 35466), (213, 35460), (214, 35457), (232, 35370), (270, 35283), (283, 35235), (290, 35193), (311, 35055), (316, 35019), (321, 34995), (344, 34881), (357, 34809), (369, 34710), (382, 34665), (393, 34614), (394, 34611), (402, 34575), (417, 34521), (432, 34458), (447, 34410),

Gene: Nova53\_37 Start: 17123, Stop: 19084, Start Num: 63

Candidate Starts for Nova53\_37:

(Start: 63 @17123 has 2 MA's), (Start: 64 @17126 has 64 MA's), (77, 17195), (90, 17255), (95, 17288), (98, 17306), (Start: 104 @17336 has 1 MA's), (106, 17345), (111, 17354), (112, 17363), (114, 17366), (132, 17465), (133, 17471), (144, 17513), (169, 17654), (183, 17747), (206, 17807), (209, 17831), (217, 17891), (228, 17942), (248, 17993), (282, 18050), (293, 18137), (307, 18215), (327, 18326), (329, 18335), (344, 18392), (357, 18464), (381, 18599), (386, 18608), (406, 18713), (433, 18821), (445, 18860), (466, 18929), (468, 18941), (473, 18962), (483, 19013),

Gene: Nyxis\_50 Start: 35338, Stop: 33305, Start Num: 49

Candidate Starts for Nyxis\_50:

(Start: 49 @35338 has 219 MA's), (68, 35275), (Start: 73 @35227 has 3 MA's), (78, 35203), (92, 35137), (Start: 97 @35101 has 1 MA's), (102, 35068), (116, 35020), (118, 35011), (127, 34954), (134,

34927), (141, 34894), (169, 34738), (170, 34729), (179, 34660), (203, 34588), (208, 34558), (209, 34555), (212, 34525), (213, 34519), (214, 34516), (232, 34429), (241, 34405), (244, 34399), (255, 34387), (261, 34378), (279, 34330), (311, 34126), (329, 34024), (333, 34006), (360, 33865), (363, 33838), (392, 33694), (393, 33691), (399, 33661), (417, 33598), (426, 33565), (428, 33556), (432, 33535), (447, 33487), (465, 33421),

Gene: OKCentral2016\_48 Start: 34898, Stop: 32817, Start Num: 34

Candidate Starts for OKCentral2016\_48:

(Start: 34 @34898 has 17 MA's), (Start: 73 @34757 has 3 MA's), (74, 34754), (78, 34733), (Start: 97 @34631 has 1 MA's), (102, 34598), (116, 34550), (118, 34541), (127, 34484), (141, 34424), (146, 34409), (157, 34328), (169, 34268), (179, 34190), (182, 34178), (202, 34127), (203, 34118), (208, 34088), (212, 34055), (213, 34049), (214, 34046), (266, 33881), (272, 33863), (283, 33818), (290, 33776), (311, 33638), (329, 33536), (333, 33518), (343, 33467), (344, 33464), (356, 33398), (357, 33392), (360, 33377), (363, 33350), (365, 33341), (371, 33281), (392, 33206), (393, 33203), (394, 33200), (403, 33161), (417, 33110), (419, 33104), (432, 33047), (465, 32933), (479, 32876),

Gene: OKaNui\_50 Start: 35498, Stop: 33465, Start Num: 49

Candidate Starts for OKaNui\_50:

(Start: 49 @35498 has 219 MA's), (68, 35435), (Start: 73 @35387 has 3 MA's), (78, 35363), (92, 35297), (Start: 97 @35261 has 1 MA's), (102, 35228), (116, 35180), (118, 35171), (127, 35114), (134, 35087), (141, 35054), (169, 34898), (170, 34889), (179, 34820), (203, 34748), (208, 34718), (209, 34715), (212, 34685), (213, 34679), (214, 34676), (232, 34589), (244, 34559), (255, 34547), (261, 34538), (279, 34490), (311, 34286), (329, 34184), (333, 34166), (360, 34025), (363, 33998), (392, 33854), (393, 33851), (399, 33821), (417, 33758), (426, 33725), (428, 33716), (432, 33695), (447, 33647), (465, 33581),

Gene: Obama12\_51 Start: 35868, Stop: 33835, Start Num: 49

Candidate Starts for Obama12\_51:

(Start: 49 @35868 has 219 MA's), (68, 35805), (Start: 73 @35757 has 3 MA's), (78, 35733), (92, 35667), (Start: 97 @35631 has 1 MA's), (102, 35598), (116, 35550), (118, 35541), (127, 35484), (134, 35457), (141, 35424), (169, 35268), (170, 35259), (179, 35190), (203, 35118), (208, 35088), (209, 35085), (212, 35055), (213, 35049), (214, 35046), (232, 34959), (244, 34929), (255, 34917), (261, 34908), (279, 34860), (311, 34656), (329, 34554), (333, 34536), (360, 34395), (363, 34368), (392, 34224), (393, 34221), (399, 34191), (417, 34128), (426, 34095), (428, 34086), (432, 34065), (447, 34017), (465, 33951),

Gene: Odin\_50 Start: 34570, Stop: 32531, Start Num: 36

Candidate Starts for Odin\_50:

(35, 34573), (Start: 36 @34570 has 1 MA's), (46, 34546), (102, 34279), (116, 34231), (118, 34222), (127, 34162), (141, 34102), (169, 33946), (174, 33898), (179, 33868), (182, 33856), (185, 33847), (202, 33811), (203, 33802), (208, 33772), (209, 33769), (212, 33739), (213, 33733), (214, 33730), (230, 33649), (245, 33619), (270, 33586), (272, 33583), (283, 33538), (301, 33412), (311, 33358), (321, 33298), (326, 33271), (329, 33256), (344, 33184), (346, 33175), (357, 33112), (361, 33079), (363, 33070), (373, 32989), (402, 32878), (404, 32869), (417, 32824), (432, 32761), (455, 32695),

Gene: Ohfah\_51 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Ohfah\_51:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447,

33597), (465, 33531),

Gene: OlanP\_53 Start: 35969, Stop: 33954, Start Num: 55

Candidate Starts for OlanP\_53:

(Start: 55 @35969 has 95 MA's), (Start: 71 @35876 has 1 MA's), (Start: 73 @35867 has 3 MA's), (78, 35843), (Start: 88 @35792 has 3 MA's), (Start: 97 @35741 has 1 MA's), (116, 35660), (118, 35651), (127, 35594), (141, 35534), (154, 35474), (157, 35438), (169, 35378), (170, 35369), (179, 35300), (182, 35288), (203, 35228), (208, 35198), (209, 35195), (210, 35183), (212, 35165), (213, 35159), (214, 35156), (221, 35123), (253, 35021), (279, 34991), (304, 34820), (313, 34769), (316, 34748), (321, 34724), (329, 34682), (333, 34664), (343, 34616), (356, 34547), (357, 34541), (363, 34499), (370, 34436), (371, 34430), (377, 34406), (402, 34301), (421, 34232), (426, 34214), (428, 34205), (432, 34184), (459, 34106), (465, 34070), (481, 34007),

Gene: Oliynyk\_48 Start: 31960, Stop: 34050, Start Num: 45

Candidate Starts for Oliynyk\_48:

(14, 31876), (16, 31882), (27, 31918), (30, 31924), (Start: 45 @31960 has 304 MA's), (78, 32101), (79, 32116), (82, 32137), (Start: 88 @32170 has 3 MA's), (90, 32176), (Start: 97 @32221 has 1 MA's), (116, 32302), (118, 32311), (132, 32389), (134, 32398), (141, 32431), (156, 32524), (161, 32548), (169, 32590), (179, 32668), (180, 32671), (203, 32758), (212, 32821), (214, 32830), (275, 32995), (279, 33007), (302, 33166), (311, 33217), (313, 33232), (316, 33253), (329, 33319), (357, 33463), (358, 33469), (360, 33478), (365, 33514), (369, 33562), (371, 33574), (378, 33601), (384, 33613), (392, 33667), (404, 33718), (411, 33739), (421, 33772), (426, 33790), (432, 33820), (434, 33832), (443, 33859), (462, 33919), (478, 33988), (479, 33991), (485, 34042),

Gene: Ollie\_54 Start: 35777, Stop: 33759, Start Num: 55

Candidate Starts for Ollie\_54:

(Start: 55 @35777 has 95 MA's), (Start: 71 @35684 has 1 MA's), (Start: 73 @35675 has 3 MA's), (78, 35651), (Start: 88 @35600 has 3 MA's), (Start: 97 @35549 has 1 MA's), (116, 35468), (118, 35459), (141, 35339), (154, 35279), (157, 35243), (169, 35183), (179, 35105), (182, 35093), (203, 35033), (208, 35003), (212, 34970), (213, 34964), (214, 34961), (230, 34880), (239, 34850), (279, 34796), (304, 34625), (321, 34529), (329, 34487), (333, 34469), (343, 34421), (346, 34409), (356, 34352), (357, 34346), (360, 34331), (363, 34304), (370, 34241), (371, 34235), (377, 34211), (402, 34106), (421, 34037), (426, 34019), (428, 34010), (432, 33989), (459, 33911), (465, 33875), (481, 33812),

Gene: Omar\_50 Start: 33134, Stop: 35209, Start Num: 45

Candidate Starts for Omar\_50:

(38, 33116), (Start: 45 @33134 has 304 MA's), (79, 33290), (Start: 88 @33344 has 3 MA's), (90, 33350), (116, 33476), (118, 33485), (132, 33563), (135, 33584), (141, 33605), (161, 33722), (169, 33764), (170, 33773), (179, 33842), (180, 33845), (203, 33917), (212, 33980), (260, 34142), (279, 34166), (311, 34376), (313, 34391), (316, 34412), (323, 34439), (329, 34478), (360, 34637), (365, 34673), (371, 34733), (378, 34760), (384, 34772), (392, 34826), (411, 34898), (421, 34931), (426, 34949), (432, 34979), (434, 34991), (462, 35078), (478, 35147), (485, 35201),

Gene: Onglai\_49 Start: 34011, Stop: 31972, Start Num: 45

Candidate Starts for Onglai\_49:

(Start: 45 @34011 has 304 MA's), (Start: 73 @33897 has 3 MA's), (75, 33882), (78, 33873), (Start: 97 @33771 has 1 MA's), (118, 33681), (127, 33621), (128, 33618), (141, 33561), (168, 33414), (169, 33405), (179, 33327), (182, 33315), (203, 33261), (208, 33231), (210, 33216), (212, 33198), (213, 33192), (214, 33189), (272, 33024), (283, 32979), (311, 32799), (329, 32697), (344, 32625), (361, 32520), (363, 32511), (393, 32358), (399, 32328), (417, 32265), (432, 32202),

Gene: Oofda\_57 Start: 34690, Stop: 32756, Start Num: 73

Candidate Starts for Oofda\_57:

(Start: 40 @34813 has 21 MA's), (Start: 73 @34690 has 3 MA's), (87, 34618), (Start: 88 @34615 has 3 MA's), (116, 34483), (118, 34474), (141, 34354), (158, 34252), (170, 34189), (174, 34150), (179, 34120), (203, 34054), (208, 34024), (212, 33991), (213, 33985), (214, 33982), (270, 33814), (275, 33802), (283, 33766), (310, 33589), (311, 33586), (316, 33550), (337, 33445), (339, 33433), (356, 33346), (357, 33340), (363, 33298), (411, 33067), (432, 32986), (452, 32926), (459, 32908), (479, 32815), (482, 32797),

Gene: Orange\_51 Start: 34856, Stop: 32832, Start Num: 50

Candidate Starts for Orange\_51:

(28, 34907), (41, 34874), (Start: 50 @34856 has 19 MA's), (Start: 73 @34748 has 3 MA's), (Start: 88 @34673 has 3 MA's), (116, 34541), (118, 34532), (141, 34412), (169, 34256), (174, 34208), (178, 34181), (179, 34178), (182, 34166), (197, 34133), (203, 34112), (210, 34067), (212, 34049), (213, 34043), (214, 34040), (270, 33890), (283, 33842), (286, 33827), (311, 33662), (329, 33560), (333, 33542), (347, 33470), (357, 33416), (360, 33401), (361, 33383), (377, 33284), (393, 33221), (402, 33182), (426, 33092), (432, 33062), (447, 33014),

Gene: Ozzie\_46 Start: 31771, Stop: 33861, Start Num: 45

Candidate Starts for Ozzie\_46:

(Start: 45 @31771 has 304 MA's), (78, 31912), (79, 31927), (82, 31948), (Start: 88 @31981 has 3 MA's), (90, 31987), (Start: 97 @32032 has 1 MA's), (116, 32113), (118, 32122), (132, 32200), (134, 32209), (141, 32242), (156, 32335), (161, 32359), (169, 32401), (179, 32479), (180, 32482), (203, 32569), (212, 32632), (214, 32641), (275, 32806), (279, 32818), (297, 32950), (302, 32977), (311, 33028), (313, 33043), (316, 33064), (329, 33130), (357, 33274), (358, 33280), (360, 33289), (365, 33325), (371, 33385), (378, 33412), (384, 33424), (393, 33481), (394, 33484), (404, 33529), (411, 33550), (421, 33583), (426, 33601), (432, 33631), (434, 33643), (443, 33670), (462, 33730), (478, 33799), (479, 33802), (485, 33853),

Gene: OzzyJ\_48 Start: 31992, Stop: 34082, Start Num: 45

Candidate Starts for OzzyJ\_48:

(15, 31911), (Start: 45 @31992 has 304 MA's), (61, 32037), (79, 32148), (82, 32169), (Start: 88 @32202 has 3 MA's), (90, 32208), (Start: 97 @32253 has 1 MA's), (116, 32334), (118, 32343), (132, 32421), (141, 32463), (154, 32523), (156, 32556), (161, 32580), (169, 32622), (170, 32631), (179, 32700), (180, 32703), (203, 32790), (212, 32853), (214, 32862), (225, 32913), (242, 32982), (275, 33027), (279, 33039), (297, 33171), (307, 33228), (311, 33249), (313, 33264), (316, 33285), (326, 33336), (334, 33372), (335, 33378), (346, 33432), (357, 33495), (358, 33501), (365, 33546), (371, 33606), (378, 33633), (384, 33645), (392, 33699), (394, 33705), (404, 33750), (411, 33771), (421, 33804), (426, 33822), (432, 33852), (434, 33864), (443, 33891), (462, 33951), (479, 34023),

Gene: P28Green\_55 Start: 35909, Stop: 33891, Start Num: 55

Candidate Starts for P28Green\_55:

(Start: 55 @35909 has 95 MA's), (Start: 71 @35816 has 1 MA's), (Start: 73 @35807 has 3 MA's), (78, 35783), (Start: 88 @35732 has 3 MA's), (Start: 97 @35681 has 1 MA's), (116, 35600), (118, 35591), (141, 35471), (154, 35411), (157, 35375), (169, 35315), (179, 35237), (203, 35165), (208, 35135), (212, 35102), (213, 35096), (214, 35093), (230, 35012), (239, 34982), (279, 34928), (304, 34757), (321, 34661), (329, 34619), (333, 34601), (343, 34553), (346, 34541), (356, 34484), (357, 34478), (360, 34463), (363, 34436), (370, 34373), (371, 34367), (377, 34343), (402, 34238), (421, 34169), (426, 34151), (428, 34142), (432, 34121), (459, 34043), (465, 34007), (481, 33944),

Gene: PGHhamlin\_56 Start: 35898, Stop: 33880, Start Num: 55

Candidate Starts for PGHhamlin\_56:

(Start: 55 @35898 has 95 MA's), (Start: 73 @35796 has 3 MA's), (78, 35772), (Start: 88 @35721 has 3 MA's), (Start: 97 @35670 has 1 MA's), (116, 35589), (118, 35580), (141, 35460), (154, 35400), (157, 35364), (169, 35304), (179, 35226), (203, 35154), (208, 35124), (212, 35091), (213, 35085), (214,

35082), (230, 35001), (239, 34971), (279, 34917), (304, 34746), (321, 34650), (329, 34608), (333, 34590), (343, 34542), (346, 34530), (356, 34473), (357, 34467), (360, 34452), (363, 34425), (370, 34362), (371, 34356), (377, 34332), (402, 34227), (421, 34158), (426, 34140), (428, 34131), (432, 34110), (459, 34032), (465, 33996), (481, 33933),

Gene: PP\_52 Start: 39052, Stop: 36992, Start Num: 47

Candidate Starts for PP\_52:

(Start: 47 @39052 has 1 MA's), (Start: 97 @38812 has 1 MA's), (102, 38779), (116, 38731), (118, 38722), (123, 38680), (141, 38602), (146, 38587), (157, 38506), (179, 38368), (200, 38305), (203, 38287), (208, 38257), (210, 38242), (212, 38224), (213, 38218), (214, 38215), (279, 38029), (290, 37963), (291, 37960), (311, 37825), (316, 37789), (333, 37705), (343, 37654), (356, 37585), (357, 37579), (379, 37438), (394, 37375), (426, 37252), (428, 37243), (432, 37222), (447, 37174), (461, 37126),

Gene: Pablito\_48 Start: 32672, Stop: 34777, Start Num: 45

Candidate Starts for Pablito\_48:

(Start: 45 @32672 has 304 MA's), (79, 32828), (80, 32834), (Start: 88 @32882 has 3 MA's), (90, 32888), (Start: 97 @32933 has 1 MA's), (116, 33014), (118, 33023), (133, 33107), (134, 33110), (135, 33122), (141, 33143), (161, 33260), (165, 33275), (169, 33302), (179, 33380), (203, 33470), (208, 33500), (209, 33503), (212, 33533), (260, 33698), (270, 33710), (279, 33734), (311, 33944), (316, 33980), (329, 34046), (357, 34190), (358, 34196), (360, 34205), (365, 34241), (368, 34280), (371, 34301), (378, 34328), (384, 34340), (389, 34370), (392, 34394), (421, 34499), (426, 34517), (434, 34559), (462, 34646), (478, 34715),

Gene: PacManQ\_42 Start: 19022, Stop: 20965, Start Num: 64

Candidate Starts for PacManQ\_42:

(Start: 64 @19022 has 64 MA's), (Start: 67 @19028 has 1 MA's), (83, 19130), (86, 19151), (90, 19160), (93, 19172), (106, 19250), (111, 19259), (112, 19268), (114, 19271), (133, 19376), (154, 19475), (198, 19685), (235, 19886), (248, 19898), (306, 20111), (324, 20216), (333, 20258), (336, 20276), (366, 20432), (390, 20540), (430, 20711), (438, 20750), (468, 20849),

Gene: PackMan\_50 Start: 35670, Stop: 33631, Start Num: 45

Candidate Starts for PackMan\_50:

(Start: 45 @35670 has 304 MA's), (Start: 73 @35556 has 3 MA's), (75, 35541), (78, 35532), (Start: 97 @35430 has 1 MA's), (118, 35340), (127, 35280), (141, 35220), (168, 35073), (169, 35064), (179, 34986), (182, 34974), (202, 34929), (203, 34920), (208, 34890), (210, 34875), (212, 34857), (213, 34851), (214, 34848), (272, 34683), (280, 34659), (283, 34638), (311, 34458), (331, 34344), (344, 34284), (361, 34179), (363, 34170), (393, 34017), (399, 33987), (417, 33924), (432, 33861),

Gene: Paedore\_48 Start: 33250, Stop: 35346, Start Num: 45

Candidate Starts for Paedore\_48:

(Start: 45 @33250 has 304 MA's), (Start: 88 @33451 has 3 MA's), (116, 33583), (118, 33592), (133, 33676), (134, 33679), (135, 33691), (141, 33712), (161, 33829), (165, 33844), (169, 33871), (170, 33880), (179, 33949), (203, 34039), (208, 34069), (209, 34072), (212, 34102), (260, 34267), (269, 34276), (279, 34303), (288, 34360), (290, 34369), (294, 34423), (297, 34435), (302, 34462), (311, 34513), (316, 34549), (323, 34576), (329, 34615), (357, 34759), (358, 34765), (360, 34774), (365, 34810), (369, 34858), (371, 34870), (375, 34888), (379, 34900), (394, 34969), (404, 35014), (411, 35035), (421, 35068), (426, 35086), (462, 35215), (478, 35284),

Gene: PainterBoy\_52 Start: 35473, Stop: 33431, Start Num: 45

Candidate Starts for PainterBoy\_52:

(Start: 45 @35473 has 304 MA's), (87, 35290), (116, 35155), (118, 35146), (119, 35131), (127, 35086), (128, 35083), (141, 35026), (169, 34870), (179, 34792), (203, 34726), (208, 34696), (209, 34693),



(212, 34663), (213, 34657), (214, 34654), (252, 34531), (270, 34489), (283, 34441), (286, 34426), (290, 34399), (311, 34261), (316, 34225), (321, 34201), (331, 34147), (343, 34090), (344, 34087), (346, 34078), (354, 34033), (357, 34015), (361, 33982), (363, 33973), (393, 33820), (399, 33790), (417, 33724), (432, 33661),

Gene: Palestino\_49 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Palestino\_49:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Panamaxus\_48 Start: 35710, Stop: 33692, Start Num: 55

Candidate Starts for Panamaxus\_48:

(Start: 55 @35710 has 95 MA's), (Start: 71 @35617 has 1 MA's), (Start: 73 @35608 has 3 MA's), (77, 35587), (92, 35518), (Start: 97 @35482 has 1 MA's), (102, 35449), (116, 35401), (118, 35392), (141, 35275), (157, 35179), (169, 35119), (176, 35050), (179, 35041), (182, 35029), (203, 34969), (208, 34939), (209, 34936), (210, 34924), (212, 34906), (213, 34900), (214, 34897), (235, 34792), (239, 34786), (279, 34729), (311, 34525), (321, 34465), (329, 34423), (333, 34405), (346, 34342), (357, 34279), (360, 34264), (363, 34237), (372, 34165), (393, 34078), (403, 34036), (428, 33943), (432, 33922), (465, 33808),

Gene: Paolo\_50 Start: 33437, Stop: 35551, Start Num: 45

Candidate Starts for Paolo\_50:

(Start: 45 @33437 has 304 MA's), (82, 33605), (Start: 88 @33638 has 3 MA's), (Start: 97 @33689 has 1 MA's), (116, 33770), (118, 33779), (129, 33848), (134, 33866), (135, 33878), (141, 33899), (161, 34016), (169, 34058), (179, 34136), (203, 34244), (212, 34307), (260, 34472), (269, 34481), (279, 34508), (311, 34718), (316, 34754), (321, 34778), (323, 34781), (329, 34820), (357, 34964), (360, 34979), (365, 35015), (371, 35075), (375, 35093), (378, 35102), (384, 35114), (388, 35132), (389, 35144), (392, 35168), (397, 35189), (421, 35273), (426, 35291), (434, 35333), (453, 35384), (462, 35420), (478, 35489), (485, 35543),

Gene: Paradiddles\_38 Start: 17470, Stop: 19422, Start Num: 64

Candidate Starts for Paradiddles\_38:

(Start: 64 @17470 has 64 MA's), (Start: 67 @17476 has 1 MA's), (83, 17578), (86, 17599), (90, 17608), (106, 17698), (111, 17707), (112, 17716), (114, 17719), (133, 17824), (198, 18133), (217, 18244), (235, 18334), (248, 18346), (306, 18559), (333, 18706), (349, 18769), (364, 18862), (366, 18880), (390, 18988), (430, 19159), (438, 19198), (468, 19297),

Gene: Patelgo\_21 Start: 7794, Stop: 9737, Start Num: 65

Candidate Starts for Patelgo\_21:

(62, 7785), (Start: 65 @7794 has 26 MA's), (Start: 73 @7851 has 3 MA's), (90, 7932), (111, 8031), (114, 8043), (133, 8148), (198, 8454), (327, 9000), (332, 9024), (333, 9027), (351, 9096), (366, 9201), (390, 9309), (412, 9411), (467, 9609), (473, 9642), (486, 9717),

Gene: Pavo\_48 Start: 33482, Stop: 35545, Start Num: 45

Candidate Starts for Pavo\_48:

(12, 33380), (13, 33386), (Start: 26 @33431 has 1 MA's), (Start: 45 @33482 has 304 MA's), (61, 33521), (Start: 71 @33584 has 1 MA's), (Start: 73 @33593 has 3 MA's), (81, 33644), (82, 33650), (Start: 88 @33683 has 3 MA's), (Start: 97 @33734 has 1 MA's), (118, 33824), (119, 33839), (134,

33911), (141, 33944), (161, 34061), (169, 34103), (179, 34181), (180, 34184), (184, 34205), (203, 34271), (212, 34334), (214, 34343), (230, 34424), (270, 34484), (279, 34508), (307, 34697), (316, 34754), (340, 34877), (363, 35003), (365, 35012), (388, 35129), (389, 35141), (392, 35165), (393, 35168), (404, 35216), (421, 35270), (426, 35288), (432, 35318), (451, 35372), (460, 35396), (462, 35414), (481, 35492),

Gene: Pawn\_54 Start: 35800, Stop: 33785, Start Num: 55

Candidate Starts for Pawn\_54:

(Start: 55 @35800 has 95 MA's), (Start: 71 @35707 has 1 MA's), (Start: 73 @35698 has 3 MA's), (78, 35674), (Start: 88 @35623 has 3 MA's), (Start: 97 @35572 has 1 MA's), (116, 35491), (118, 35482), (127, 35425), (141, 35365), (154, 35305), (157, 35269), (169, 35209), (170, 35200), (179, 35131), (182, 35119), (203, 35059), (208, 35029), (209, 35026), (210, 35014), (212, 34996), (213, 34990), (214, 34987), (221, 34954), (253, 34852), (279, 34822), (304, 34651), (313, 34600), (316, 34579), (321, 34555), (329, 34513), (333, 34495), (343, 34447), (357, 34372), (363, 34330), (370, 34267), (371, 34261), (377, 34237), (402, 34132), (421, 34063), (426, 34045), (428, 34036), (432, 34015), (459, 33937), (465, 33901), (481, 33838),

Gene: PeaceMeal1\_47 Start: 34408, Stop: 32369, Start Num: 34

Candidate Starts for PeaceMeal1\_47:

(Start: 34 @34408 has 17 MA's), (78, 34273), (Start: 97 @34171 has 1 MA's), (102, 34138), (116, 34090), (118, 34081), (127, 34024), (141, 33964), (146, 33949), (169, 33808), (179, 33730), (182, 33718), (203, 33658), (208, 33628), (212, 33595), (213, 33589), (214, 33586), (221, 33553), (270, 33418), (279, 33394), (311, 33190), (329, 33088), (333, 33070), (343, 33019), (356, 32950), (357, 32944), (363, 32902), (365, 32893), (371, 32833), (392, 32758), (393, 32755), (394, 32752), (403, 32713), (417, 32662), (419, 32656), (432, 32599), (465, 32485), (479, 32428),

Gene: Peaches\_50 Start: 35447, Stop: 33414, Start Num: 49

Candidate Starts for Peaches\_50:

(Start: 49 @35447 has 219 MA's), (68, 35384), (Start: 73 @35336 has 3 MA's), (78, 35312), (92, 35246), (Start: 97 @35210 has 1 MA's), (102, 35177), (116, 35129), (118, 35120), (127, 35063), (134, 35036), (141, 35003), (169, 34847), (170, 34838), (179, 34769), (203, 34697), (208, 34667), (209, 34664), (212, 34634), (213, 34628), (214, 34625), (232, 34538), (241, 34514), (244, 34508), (255, 34496), (261, 34487), (279, 34439), (311, 34235), (329, 34133), (333, 34115), (360, 33974), (363, 33947), (392, 33803), (393, 33800), (399, 33770), (417, 33707), (426, 33674), (428, 33665), (432, 33644), (447, 33596), (465, 33530),

Gene: Peebs\_42 Start: 19379, Stop: 21322, Start Num: 64

Candidate Starts for Peebs\_42:

(Start: 53 @19334 has 2 MA's), (56, 19343), (Start: 64 @19379 has 64 MA's), (Start: 67 @19385 has 1 MA's), (83, 19487), (86, 19508), (90, 19517), (106, 19607), (111, 19616), (112, 19625), (114, 19628), (133, 19733), (198, 20042), (235, 20243), (248, 20255), (306, 20468), (307, 20477), (324, 20573), (333, 20615), (336, 20633), (366, 20789), (390, 20897), (430, 21068), (438, 21107), (468, 21206), (486, 21305),

Gene: Pembroke\_54 Start: 35907, Stop: 33889, Start Num: 55

Candidate Starts for Pembroke\_54:

(Start: 55 @35907 has 95 MA's), (Start: 73 @35805 has 3 MA's), (78, 35781), (Start: 88 @35730 has 3 MA's), (Start: 97 @35679 has 1 MA's), (116, 35598), (118, 35589), (141, 35469), (154, 35409), (157, 35373), (169, 35313), (179, 35235), (203, 35163), (208, 35133), (212, 35100), (213, 35094), (214, 35091), (230, 35010), (239, 34980), (279, 34926), (304, 34755), (321, 34659), (329, 34617), (333, 34599), (343, 34551), (346, 34539), (356, 34482), (357, 34476), (360, 34461), (363, 34434), (370, 34371), (371, 34365), (377, 34341), (402, 34236), (421, 34167), (426, 34149), (428, 34140), (432, 34119), (459, 34041), (465, 34005), (481, 33942),

Gene: Penny1\_55 Start: 35910, Stop: 33892, Start Num: 55

Candidate Starts for Penny1\_55:

(Start: 55 @35910 has 95 MA's), (Start: 71 @35817 has 1 MA's), (Start: 73 @35808 has 3 MA's), (78, 35784), (Start: 88 @35733 has 3 MA's), (Start: 97 @35682 has 1 MA's), (116, 35601), (118, 35592), (141, 35472), (154, 35412), (157, 35376), (169, 35316), (179, 35238), (203, 35166), (208, 35136), (212, 35103), (213, 35097), (214, 35094), (230, 35013), (239, 34983), (279, 34929), (304, 34758), (321, 34662), (329, 34620), (333, 34602), (343, 34554), (346, 34542), (356, 34485), (357, 34479), (360, 34464), (363, 34437), (370, 34374), (371, 34368), (377, 34344), (402, 34239), (421, 34170), (426, 34152), (428, 34143), (432, 34122), (459, 34044), (465, 34008), (481, 33945),

Gene: Pepperwood\_43 Start: 19516, Stop: 21459, Start Num: 64

Candidate Starts for Pepperwood\_43:

(Start: 53 @19471 has 2 MA's), (56, 19480), (Start: 64 @19516 has 64 MA's), (Start: 67 @19522 has 1 MA's), (83, 19624), (86, 19645), (90, 19654), (106, 19744), (111, 19753), (112, 19762), (114, 19765), (133, 19870), (151, 19960), (198, 20179), (235, 20380), (248, 20392), (306, 20605), (307, 20614), (324, 20710), (333, 20752), (336, 20770), (366, 20926), (390, 21034), (430, 21205), (431, 21211), (438, 21244), (468, 21343),

Gene: Perplexer\_49 Start: 35406, Stop: 33388, Start Num: 49

Candidate Starts for Perplexer\_49:

(Start: 49 @35406 has 219 MA's), (Start: 73 @35295 has 3 MA's), (92, 35205), (Start: 97 @35169 has 1 MA's), (102, 35136), (116, 35088), (118, 35079), (127, 35019), (141, 34959), (169, 34803), (170, 34794), (179, 34725), (182, 34713), (201, 34662), (203, 34653), (208, 34623), (209, 34620), (212, 34590), (213, 34584), (214, 34581), (248, 34461), (270, 34437), (279, 34413), (311, 34209), (329, 34107), (333, 34089), (343, 34038), (356, 33969), (360, 33948), (363, 33921), (392, 33777), (393, 33774), (399, 33744), (411, 33699), (426, 33648), (428, 33639), (432, 33618), (465, 33504), (479, 33447),

Gene: Persimmon\_38 Start: 17393, Stop: 19336, Start Num: 64

Candidate Starts for Persimmon\_38:

(Start: 64 @17393 has 64 MA's), (Start: 67 @17399 has 1 MA's), (83, 17501), (86, 17522), (90, 17531), (106, 17621), (111, 17630), (112, 17639), (114, 17642), (133, 17747), (198, 18056), (217, 18167), (235, 18257), (248, 18269), (306, 18482), (333, 18629), (349, 18692), (366, 18803), (390, 18911), (430, 19082), (438, 19121), (468, 19220),

Gene: PeterPeter\_50 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for PeterPeter\_50:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: Petersenfast\_50 Start: 34672, Stop: 32834, Start Num: 88

Candidate Starts for Petersenfast\_50:

(28, 34906), (41, 34873), (Start: 50 @34855 has 19 MA's), (Start: 73 @34747 has 3 MA's), (Start: 88 @34672 has 3 MA's), (116, 34540), (118, 34531), (141, 34411), (169, 34255), (174, 34207), (178, 34180), (179, 34177), (182, 34165), (197, 34132), (203, 34111), (210, 34066), (212, 34048), (213, 34042), (214, 34039), (250, 33919), (283, 33844), (286, 33829), (311, 33664), (321, 33604), (329, 33562), (333, 33544), (347, 33472), (357, 33418), (360, 33403), (361, 33385), (377, 33286), (393,

33223), (402, 33184), (414, 33136), (426, 33094), (432, 33064), (447, 33016),

Gene: PetiteSangsue\_49 Start: 35409, Stop: 33391, Start Num: 49

Candidate Starts for PetiteSangsue\_49:

(Start: 49 @35409 has 219 MA's), (Start: 73 @35298 has 3 MA's), (92, 35208), (Start: 97 @35172 has 1 MA's), (102, 35139), (116, 35091), (118, 35082), (127, 35022), (141, 34962), (169, 34806), (170, 34797), (179, 34728), (182, 34716), (201, 34665), (203, 34656), (208, 34626), (209, 34623), (212, 34593), (213, 34587), (214, 34584), (248, 34464), (270, 34440), (279, 34416), (311, 34212), (329, 34110), (333, 34092), (343, 34041), (356, 33972), (360, 33951), (363, 33924), (392, 33780), (393, 33777), (399, 33747), (411, 33702), (426, 33651), (428, 33642), (432, 33621), (465, 33507), (479, 33450),

Gene: PetterN\_47 Start: 34359, Stop: 32269, Start Num: 49

Candidate Starts for PetterN\_47:

(Start: 49 @34359 has 219 MA's), (Start: 88 @34173 has 3 MA's), (Start: 97 @34122 has 1 MA's), (102, 34089), (116, 34041), (118, 34032), (123, 33990), (147, 33894), (153, 33855), (158, 33810), (168, 33765), (169, 33756), (175, 33693), (176, 33687), (179, 33678), (199, 33624), (203, 33606), (208, 33576), (209, 33573), (210, 33561), (212, 33543), (213, 33537), (214, 33534), (239, 33423), (283, 33282), (290, 33240), (308, 33120), (310, 33105), (313, 33087), (322, 33039), (329, 33000), (343, 32931), (354, 32874), (356, 32862), (357, 32856), (363, 32814), (365, 32805), (377, 32724), (399, 32625), (410, 32583), (421, 32547), (426, 32529), (428, 32520), (482, 32310),

Gene: Ph8s\_53 Start: 35117, Stop: 33099, Start Num: 45

Candidate Starts for Ph8s\_53:

(Start: 45 @35117 has 304 MA's), (Start: 71 @35015 has 1 MA's), (Start: 73 @35006 has 3 MA's), (Start: 88 @34931 has 3 MA's), (116, 34799), (118, 34790), (127, 34730), (141, 34670), (156, 34577), (158, 34568), (169, 34514), (174, 34466), (179, 34436), (185, 34415), (197, 34391), (203, 34370), (208, 34340), (209, 34337), (212, 34307), (213, 34301), (214, 34298), (232, 34211), (270, 34154), (272, 34151), (283, 34106), (301, 33980), (311, 33926), (321, 33866), (326, 33839), (329, 33824), (344, 33752), (346, 33743), (357, 33680), (361, 33647), (363, 33638), (373, 33557), (380, 33539), (393, 33485), (402, 33446), (417, 33392), (432, 33329), (444, 33287), (477, 33164),

Gene: Phacado\_50 Start: 35447, Stop: 33414, Start Num: 49

Candidate Starts for Phacado\_50:

(Start: 49 @35447 has 219 MA's), (68, 35384), (Start: 73 @35336 has 3 MA's), (78, 35312), (92, 35246), (Start: 97 @35210 has 1 MA's), (102, 35177), (116, 35129), (118, 35120), (127, 35063), (134, 35036), (141, 35003), (169, 34847), (170, 34838), (179, 34769), (203, 34697), (208, 34667), (209, 34664), (212, 34634), (213, 34628), (214, 34625), (232, 34538), (244, 34508), (255, 34496), (261, 34487), (279, 34439), (311, 34235), (329, 34133), (333, 34115), (360, 33974), (363, 33947), (392, 33803), (393, 33800), (399, 33770), (417, 33707), (426, 33674), (428, 33665), (432, 33644), (447, 33596), (465, 33530),

Gene: Phaded\_52 Start: 36913, Stop: 34883, Start Num: 45

Candidate Starts for Phaded\_52:

(Start: 45 @36913 has 304 MA's), (74, 36799), (118, 36586), (119, 36571), (141, 36466), (169, 36310), (170, 36301), (179, 36232), (194, 36184), (203, 36160), (208, 36130), (209, 36127), (210, 36115), (212, 36097), (213, 36091), (214, 36088), (232, 36001), (270, 35932), (283, 35884), (290, 35842), (311, 35704), (316, 35668), (329, 35602), (331, 35590), (344, 35530), (354, 35476), (357, 35458), (377, 35326), (378, 35323), (380, 35317), (388, 35296), (393, 35263), (398, 35236), (417, 35176), (432, 35113), (447, 35065), (451, 35056),

Gene: Phaeder\_51 Start: 35670, Stop: 33631, Start Num: 45

Candidate Starts for Phaeder\_51:

(Start: 45 @35670 has 304 MA's), (Start: 73 @35556 has 3 MA's), (75, 35541), (78, 35532), (Start: 97 @35430 has 1 MA's), (118, 35340), (127, 35280), (141, 35220), (168, 35073), (169, 35064), (179, 34986), (182, 34974), (202, 34929), (203, 34920), (208, 34890), (210, 34875), (212, 34857), (213, 34851), (214, 34848), (272, 34683), (280, 34659), (283, 34638), (311, 34458), (331, 34344), (344, 34284), (361, 34179), (363, 34170), (393, 34017), (399, 33987), (417, 33924), (432, 33861),

Gene: PhailMary\_40 Start: 32396, Stop: 30351, Start Num: 45

Candidate Starts for PhailMary\_40:

(Start: 45 @32396 has 304 MA's), (74, 32276), (87, 32207), (Start: 97 @32153 has 1 MA's), (116, 32072), (118, 32063), (127, 32003), (154, 31883), (156, 31850), (157, 31847), (159, 31838), (164, 31817), (168, 31796), (169, 31787), (175, 31724), (179, 31709), (181, 31703), (203, 31643), (209, 31610), (212, 31580), (213, 31574), (214, 31571), (252, 31436), (301, 31241), (304, 31223), (326, 31100), (328, 31091), (354, 30959), (363, 30899), (372, 30827), (385, 30788), (387, 30785), (388, 30773), (393, 30740), (402, 30701), (419, 30638), (421, 30629), (428, 30602), (432, 30581), (459, 30503), (465, 30467),

Gene: Phantastic\_52 Start: 35398, Stop: 33377, Start Num: 49

Candidate Starts for Phantastic\_52:

(2, 35629), (Start: 49 @35398 has 219 MA's), (74, 35284), (92, 35197), (94, 35176), (Start: 97 @35161 has 1 MA's), (102, 35128), (116, 35080), (118, 35071), (141, 34951), (146, 34936), (165, 34822), (169, 34795), (170, 34786), (179, 34717), (185, 34696), (202, 34660), (203, 34651), (208, 34621), (210, 34606), (212, 34588), (213, 34582), (214, 34579), (279, 34414), (311, 34210), (313, 34195), (316, 34174), (321, 34150), (329, 34108), (333, 34090), (356, 33970), (357, 33964), (360, 33949), (372, 33850), (392, 33766), (403, 33721), (428, 33628), (432, 33607), (465, 33493),

Gene: Pharaoh\_46 Start: 35491, Stop: 33452, Start Num: 45

Candidate Starts for Pharaoh\_46:

(3, 35632), (Start: 45 @35491 has 304 MA's), (Start: 71 @35386 has 1 MA's), (Start: 73 @35377 has 3 MA's), (Start: 97 @35251 has 1 MA's), (102, 35218), (118, 35161), (127, 35101), (141, 35041), (147, 35023), (169, 34885), (179, 34807), (185, 34786), (203, 34741), (210, 34696), (212, 34678), (213, 34672), (214, 34669), (264, 34531), (272, 34504), (283, 34459), (311, 34279), (321, 34219), (326, 34192), (329, 34177), (331, 34165), (333, 34159), (344, 34105), (346, 34096), (357, 34033), (361, 34000), (393, 33838), (394, 33835), (397, 33820), (403, 33796), (417, 33745), (432, 33682),

Gene: Phelipe\_51 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Phelipe\_51:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Phettuccine\_47 Start: 31663, Stop: 33753, Start Num: 45

Candidate Starts for Phettuccine\_47:

(Start: 45 @31663 has 304 MA's), (78, 31804), (79, 31819), (Start: 88 @31873 has 3 MA's), (90, 31879), (Start: 97 @31924 has 1 MA's), (116, 32005), (118, 32014), (132, 32092), (134, 32101), (141, 32134), (156, 32227), (161, 32251), (169, 32293), (179, 32371), (180, 32374), (203, 32461), (212, 32524), (214, 32533), (275, 32698), (279, 32710), (297, 32842), (302, 32869), (311, 32920), (313, 32935), (316, 32956), (329, 33022), (357, 33166), (358, 33172), (360, 33181), (365, 33217), (369, 33265), (371, 33277), (378, 33304), (384, 33316), (392, 33370), (404, 33421), (411, 33442), (421, 33475), (426, 33493), (432, 33523), (434, 33535), (443, 33562), (462, 33622), (478, 33691), (479,

33694), (485, 33745),

Gene: Phighter1804\_50 Start: 35509, Stop: 33479, Start Num: 49

Candidate Starts for Phighter1804\_50:

(Start: 49 @35509 has 219 MA's), (92, 35308), (Start: 97 @35272 has 1 MA's), (102, 35239), (116, 35191), (118, 35182), (127, 35125), (141, 35065), (158, 34963), (169, 34909), (170, 34900), (179, 34831), (182, 34819), (202, 34768), (203, 34759), (208, 34729), (209, 34726), (212, 34696), (213, 34690), (214, 34687), (221, 34654), (279, 34504), (311, 34300), (329, 34198), (333, 34180), (356, 34060), (360, 34039), (363, 34012), (392, 33868), (393, 33865), (399, 33835), (411, 33790), (421, 33757), (426, 33739), (428, 33730), (432, 33709), (465, 33595),

Gene: Phillis\_49 Start: 34315, Stop: 32270, Start Num: 49

Candidate Starts for Phillis\_49:

(Start: 49 @34315 has 219 MA's), (74, 34201), (87, 34132), (Start: 88 @34129 has 3 MA's), (Start: 97 @34078 has 1 MA's), (102, 34045), (116, 33997), (118, 33988), (123, 33946), (147, 33850), (153, 33811), (158, 33766), (168, 33721), (169, 33712), (175, 33649), (176, 33643), (179, 33634), (180, 33631), (203, 33562), (208, 33532), (209, 33529), (212, 33499), (213, 33493), (214, 33490), (283, 33292), (311, 33109), (329, 33007), (356, 32869), (363, 32821), (365, 32812), (377, 32728), (399, 32626), (411, 32581), (428, 32521), (432, 32500), (436, 32482), (482, 32311),

Gene: PhishRPhriends\_52 Start: 34977, Stop: 32962, Start Num: 55

Candidate Starts for PhishRPhriends\_52:

(Start: 55 @34977 has 95 MA's), (Start: 71 @34884 has 1 MA's), (Start: 73 @34875 has 3 MA's), (78, 34851), (Start: 88 @34800 has 3 MA's), (Start: 97 @34749 has 1 MA's), (116, 34668), (118, 34659), (127, 34602), (141, 34542), (154, 34482), (157, 34446), (169, 34386), (170, 34377), (179, 34308), (182, 34296), (203, 34236), (208, 34206), (209, 34203), (210, 34191), (212, 34173), (213, 34167), (214, 34164), (221, 34131), (253, 34029), (279, 33999), (304, 33828), (313, 33777), (316, 33756), (321, 33732), (329, 33690), (333, 33672), (343, 33624), (356, 33555), (357, 33549), (363, 33507), (370, 33444), (371, 33438), (377, 33414), (402, 33309), (421, 33240), (426, 33222), (428, 33213), (432, 33192), (459, 33114), (465, 33078), (481, 33015),

Gene: Phlei\_40 Start: 35204, Stop: 33165, Start Num: 45

Candidate Starts for Phlei\_40:

(Start: 45 @35204 has 304 MA's), (Start: 97 @34970 has 1 MA's), (100, 34952), (118, 34880), (127, 34820), (141, 34757), (153, 34706), (168, 34616), (169, 34607), (179, 34529), (202, 34472), (203, 34463), (208, 34433), (209, 34430), (210, 34418), (212, 34400), (213, 34394), (214, 34391), (279, 34199), (290, 34133), (291, 34130), (311, 33995), (329, 33893), (348, 33800), (356, 33755), (361, 33716), (369, 33650), (380, 33608), (382, 33605), (394, 33551), (402, 33515), (451, 33338), (459, 33317),

Gene: Phlorence\_42 Start: 34240, Stop: 32111, Start Num: 49

Candidate Starts for Phlorence\_42:

(Start: 49 @34240 has 219 MA's), (Start: 88 @34054 has 3 MA's), (Start: 97 @34003 has 1 MA's), (116, 33922), (118, 33913), (141, 33793), (146, 33778), (164, 33667), (165, 33664), (169, 33637), (170, 33628), (176, 33568), (179, 33559), (184, 33535), (203, 33448), (208, 33418), (209, 33415), (212, 33385), (213, 33379), (214, 33376), (239, 33265), (283, 33124), (308, 32962), (313, 32929), (322, 32881), (329, 32842), (343, 32773), (354, 32716), (356, 32704), (357, 32698), (363, 32656), (365, 32647), (372, 32584), (394, 32494), (399, 32467), (410, 32425), (421, 32389), (426, 32371), (428, 32362), (482, 32152),

Gene: Phoebe\_55 Start: 35899, Stop: 33881, Start Num: 55

Candidate Starts for Phoebe\_55:

(Start: 55 @35899 has 95 MA's), (Start: 71 @35806 has 1 MA's), (Start: 73 @35797 has 3 MA's), (78, 35773), (Start: 88 @35722 has 3 MA's), (Start: 97 @35671 has 1 MA's), (116, 35590), (118, 35581), (141, 35461), (154, 35401), (157, 35365), (169, 35305), (179, 35227), (203, 35155), (208, 35125), (212, 35092), (213, 35086), (214, 35083), (230, 35002), (239, 34972), (279, 34918), (304, 34747), (321, 34651), (329, 34609), (333, 34591), (343, 34543), (346, 34531), (356, 34474), (357, 34468), (360, 34453), (363, 34426), (370, 34363), (371, 34357), (377, 34333), (402, 34228), (421, 34159), (426, 34141), (428, 34132), (432, 34111), (459, 34033), (465, 33997), (481, 33934),

Gene: Phonnegut\_51 Start: 35767, Stop: 33728, Start Num: 45

Candidate Starts for Phonnegut\_51:

(Start: 45 @35767 has 304 MA's), (Start: 73 @35653 has 3 MA's), (75, 35638), (78, 35629), (Start: 97 @35527 has 1 MA's), (118, 35437), (127, 35377), (128, 35374), (141, 35317), (168, 35170), (169, 35161), (179, 35083), (182, 35071), (203, 35017), (208, 34987), (210, 34972), (212, 34954), (213, 34948), (214, 34945), (272, 34780), (283, 34735), (311, 34555), (329, 34453), (344, 34381), (361, 34276), (363, 34267), (393, 34114), (399, 34084), (417, 34021), (432, 33958),

Gene: Phontbonne\_50 Start: 35339, Stop: 33306, Start Num: 49

Candidate Starts for Phontbonne\_50:

(Start: 49 @35339 has 219 MA's), (68, 35276), (Start: 73 @35228 has 3 MA's), (78, 35204), (92, 35138), (Start: 97 @35102 has 1 MA's), (102, 35069), (116, 35021), (118, 35012), (127, 34955), (134, 34928), (141, 34895), (169, 34739), (170, 34730), (179, 34661), (203, 34589), (208, 34559), (209, 34556), (212, 34526), (213, 34520), (214, 34517), (232, 34430), (244, 34400), (255, 34388), (261, 34379), (279, 34331), (311, 34127), (329, 34025), (333, 34007), (360, 33866), (363, 33839), (392, 33695), (393, 33692), (399, 33662), (417, 33599), (426, 33566), (428, 33557), (432, 33536), (447, 33488), (465, 33422),

Gene: Phoxy\_54 Start: 35931, Stop: 33913, Start Num: 55

Candidate Starts for Phoxy\_54:

(Start: 55 @35931 has 95 MA's), (Start: 71 @35838 has 1 MA's), (Start: 73 @35829 has 3 MA's), (78, 35805), (Start: 88 @35754 has 3 MA's), (Start: 97 @35703 has 1 MA's), (116, 35622), (118, 35613), (141, 35496), (157, 35400), (169, 35340), (176, 35271), (179, 35262), (180, 35259), (182, 35250), (203, 35190), (208, 35160), (209, 35157), (210, 35145), (212, 35127), (213, 35121), (214, 35118), (235, 35013), (239, 35007), (279, 34950), (311, 34746), (313, 34731), (316, 34710), (321, 34686), (326, 34659), (329, 34644), (356, 34506), (357, 34500), (360, 34485), (363, 34458), (370, 34395), (371, 34389), (377, 34365), (402, 34260), (411, 34224), (432, 34143), (459, 34065), (465, 34029), (481, 33966),

Gene: Phrankenstein\_41 Start: 32020, Stop: 29975, Start Num: 45

Candidate Starts for Phrankenstein\_41:

(Start: 45 @32020 has 304 MA's), (74, 31900), (87, 31831), (Start: 97 @31777 has 1 MA's), (116, 31696), (118, 31687), (127, 31627), (132, 31609), (154, 31507), (156, 31474), (157, 31471), (159, 31462), (164, 31441), (168, 31420), (169, 31411), (175, 31348), (179, 31333), (181, 31327), (203, 31267), (209, 31234), (212, 31204), (213, 31198), (214, 31195), (252, 31060), (301, 30865), (304, 30847), (310, 30814), (326, 30724), (328, 30715), (354, 30583), (363, 30523), (372, 30451), (385, 30412), (387, 30409), (388, 30397), (393, 30364), (402, 30325), (421, 30253), (428, 30226), (465, 30091),

Gene: Phranny\_55 Start: 35782, Stop: 33767, Start Num: 55

Candidate Starts for Phranny\_55:

(Start: 55 @35782 has 95 MA's), (Start: 71 @35689 has 1 MA's), (Start: 73 @35680 has 3 MA's), (Start: 88 @35605 has 3 MA's), (Start: 97 @35554 has 1 MA's), (116, 35473), (118, 35464), (127, 35407), (141, 35347), (154, 35287), (157, 35251), (169, 35191), (170, 35182), (179, 35113), (182, 35101), (203, 35041), (208, 35011), (209, 35008), (210, 34996), (212, 34978), (213, 34972), (214,

34969), (221, 34936), (253, 34834), (279, 34804), (304, 34633), (310, 34600), (313, 34582), (316, 34561), (321, 34537), (329, 34495), (333, 34477), (343, 34429), (357, 34354), (363, 34312), (370, 34249), (371, 34243), (377, 34219), (402, 34114), (421, 34045), (426, 34027), (428, 34018), (432, 33997), (459, 33919), (465, 33883), (481, 33820),

Gene: Phredrick\_22 Start: 7929, Stop: 9872, Start Num: 65

Candidate Starts for Phredrick\_22:

(62, 7920), (Start: 65 @7929 has 26 MA's), (Start: 73 @7986 has 3 MA's), (90, 8067), (98, 8118), (111, 8166), (112, 8175), (114, 8178), (133, 8283), (148, 8340), (231, 8769), (244, 8796), (304, 9009), (314, 9063), (327, 9135), (332, 9159), (351, 9231), (390, 9444), (413, 9549), (423, 9585), (448, 9678), (473, 9777),

Gene: PickleBack\_43 Start: 34307, Stop: 32238, Start Num: 49

Candidate Starts for PickleBack\_43:

(Start: 49 @34307 has 219 MA's), (Start: 88 @34121 has 3 MA's), (Start: 97 @34070 has 1 MA's), (102, 34037), (116, 33989), (118, 33980), (141, 33860), (146, 33845), (164, 33734), (165, 33731), (169, 33704), (170, 33695), (176, 33635), (179, 33626), (184, 33602), (203, 33515), (208, 33485), (209, 33482), (212, 33452), (213, 33446), (214, 33443), (283, 33251), (308, 33089), (313, 33056), (322, 33008), (329, 32969), (343, 32900), (354, 32843), (356, 32831), (357, 32825), (363, 32783), (365, 32774), (392, 32627), (399, 32594), (410, 32552), (421, 32516), (426, 32498), (428, 32489), (482, 32279),

Gene: PinkiePie\_40 Start: 18297, Stop: 20249, Start Num: 64

Candidate Starts for PinkiePie\_40:

(Start: 64 @18297 has 64 MA's), (Start: 67 @18303 has 1 MA's), (83, 18405), (86, 18426), (90, 18435), (106, 18525), (111, 18534), (112, 18543), (114, 18546), (133, 18651), (198, 18960), (217, 19071), (235, 19161), (248, 19173), (306, 19386), (333, 19533), (349, 19596), (364, 19689), (366, 19707), (381, 19779), (390, 19815), (430, 19986), (438, 20025), (468, 20124),

Gene: Pioneer\_51 Start: 35767, Stop: 33728, Start Num: 45

Candidate Starts for Pioneer\_51:

(Start: 45 @35767 has 304 MA's), (Start: 73 @35653 has 3 MA's), (75, 35638), (78, 35629), (Start: 97 @35527 has 1 MA's), (118, 35437), (127, 35377), (128, 35374), (141, 35317), (168, 35170), (169, 35161), (179, 35083), (182, 35071), (203, 35017), (208, 34987), (210, 34972), (212, 34954), (213, 34948), (214, 34945), (272, 34780), (283, 34735), (311, 34555), (329, 34453), (344, 34381), (361, 34276), (363, 34267), (393, 34114), (399, 34084), (417, 34021), (432, 33958),

Gene: Pipcraft\_48 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Pipcraft\_48:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Piro94\_51 Start: 36095, Stop: 34059, Start Num: 45

Candidate Starts for Piro94\_51:

(Start: 45 @36095 has 304 MA's), (61, 36056), (Start: 73 @35984 has 3 MA's), (Start: 88 @35909 has 3 MA's), (Start: 97 @35858 has 1 MA's), (102, 35825), (118, 35768), (127, 35708), (134, 35681), (141, 35648), (169, 35492), (179, 35414), (182, 35402), (198, 35360), (203, 35342), (208, 35312), (209, 35309), (210, 35297), (212, 35279), (213, 35273), (214, 35270), (272, 35111), (283, 35066), (290,



35024), (311, 34886), (316, 34850), (329, 34784), (331, 34772), (344, 34712), (354, 34658), (357, 34640), (365, 34589), (377, 34508), (380, 34499), (393, 34445), (398, 34418), (399, 34415), (402, 34406), (417, 34352), (432, 34289), (447, 34241), (451, 34232),

Gene: Pistachio\_53 Start: 35316, Stop: 33295, Start Num: 49

Candidate Starts for Pistachio\_53:

(Start: 49 @35316 has 219 MA's), (74, 35202), (92, 35115), (Start: 97 @35079 has 1 MA's), (116, 34998), (118, 34989), (126, 34932), (141, 34869), (169, 34713), (179, 34635), (185, 34614), (187, 34611), (203, 34569), (208, 34539), (210, 34524), (212, 34506), (213, 34500), (214, 34497), (221, 34464), (279, 34332), (311, 34128), (316, 34092), (321, 34068), (329, 34026), (333, 34008), (356, 33888), (357, 33882), (360, 33867), (363, 33840), (389, 33702), (403, 33639), (428, 33546), (432, 33525), (460, 33444), (465, 33411),

Gene: Pmask\_53 Start: 34817, Stop: 32793, Start Num: 45

Candidate Starts for Pmask\_53:

(32, 34850), (Start: 45 @34817 has 304 MA's), (Start: 88 @34631 has 3 MA's), (102, 34547), (116, 34499), (118, 34490), (127, 34430), (141, 34370), (153, 34313), (157, 34274), (165, 34241), (169, 34214), (170, 34205), (175, 34151), (179, 34136), (203, 34064), (208, 34034), (212, 34001), (213, 33995), (214, 33992), (283, 33800), (307, 33641), (311, 33620), (331, 33506), (344, 33446), (346, 33437), (354, 33392), (357, 33374), (361, 33341), (378, 33239), (380, 33233), (393, 33179), (398, 33152), (399, 33149), (402, 33140), (417, 33086), (432, 33023), (440, 32993), (451, 32966),

Gene: Pocahontas\_50 Start: 35707, Stop: 33689, Start Num: 55

Candidate Starts for Pocahontas\_50:

(Start: 55 @35707 has 95 MA's), (Start: 71 @35614 has 1 MA's), (Start: 73 @35605 has 3 MA's), (77, 35584), (92, 35515), (Start: 97 @35479 has 1 MA's), (102, 35446), (116, 35398), (118, 35389), (141, 35272), (157, 35176), (169, 35116), (176, 35047), (179, 35038), (182, 35026), (203, 34966), (208, 34936), (209, 34933), (210, 34921), (212, 34903), (213, 34897), (214, 34894), (235, 34789), (239, 34783), (279, 34726), (311, 34522), (321, 34462), (329, 34420), (333, 34402), (346, 34339), (357, 34276), (360, 34261), (363, 34234), (372, 34162), (393, 34075), (403, 34033), (428, 33940), (432, 33919), (465, 33805),

Gene: Polymorphads\_51 Start: 35441, Stop: 33408, Start Num: 49

Candidate Starts for Polymorphads\_51:

(Start: 49 @35441 has 219 MA's), (68, 35378), (Start: 73 @35330 has 3 MA's), (78, 35306), (92, 35240), (Start: 97 @35204 has 1 MA's), (102, 35171), (116, 35123), (118, 35114), (127, 35057), (134, 35030), (141, 34997), (169, 34841), (170, 34832), (179, 34763), (203, 34691), (208, 34661), (209, 34658), (212, 34628), (213, 34622), (214, 34619), (232, 34532), (244, 34502), (255, 34490), (261, 34481), (279, 34433), (311, 34229), (329, 34127), (333, 34109), (360, 33968), (363, 33941), (392, 33797), (393, 33794), (399, 33764), (417, 33701), (426, 33668), (428, 33659), (432, 33638), (447, 33590), (465, 33524),

Gene: Polyphemus\_55 Start: 35199, Stop: 33175, Start Num: 45

Candidate Starts for Polyphemus\_55:

(32, 35232), (Start: 45 @35199 has 304 MA's), (Start: 88 @35013 has 3 MA's), (102, 34929), (116, 34881), (118, 34872), (127, 34812), (141, 34752), (153, 34695), (157, 34656), (165, 34623), (169, 34596), (170, 34587), (175, 34533), (179, 34518), (203, 34446), (208, 34416), (212, 34383), (213, 34377), (214, 34374), (283, 34182), (307, 34023), (311, 34002), (331, 33888), (344, 33828), (346, 33819), (354, 33774), (357, 33756), (361, 33723), (378, 33621), (380, 33615), (393, 33561), (398, 33534), (399, 33531), (402, 33522), (417, 33468), (432, 33405), (440, 33375), (451, 33348),

Gene: Pomar16\_53 Start: 35602, Stop: 33521, Start Num: 49

Candidate Starts for Pomar16\_53:

(Start: 49 @35602 has 219 MA's), (Start: 71 @35497 has 1 MA's), (Start: 73 @35488 has 3 MA's), (Start: 88 @35413 has 3 MA's), (102, 35329), (116, 35281), (118, 35272), (127, 35212), (147, 35134), (153, 35095), (169, 34996), (175, 34933), (179, 34918), (200, 34840), (203, 34822), (208, 34792), (209, 34789), (212, 34759), (213, 34753), (214, 34750), (232, 34663), (270, 34588), (283, 34540), (311, 34360), (329, 34258), (331, 34246), (344, 34186), (346, 34177), (354, 34132), (356, 34120), (360, 34099), (363, 34072), (371, 34003), (393, 33907), (398, 33880), (402, 33868), (411, 33832), (432, 33751), (444, 33709),

Gene: Ponzi\_21 Start: 13819, Stop: 11810, Start Num: 54

Candidate Starts for Ponzi\_21:

(Start: 54 @13819 has 3 MA's), (75, 13699), (92, 13624), (93, 13621), (115, 13513), (132, 13420), (141, 13378), (165, 13249), (168, 13231), (169, 13222), (179, 13144), (202, 13087), (203, 13078), (212, 13015), (214, 13006), (216, 12991), (219, 12979), (221, 12973), (239, 12895), (249, 12880), (287, 12793), (297, 12709), (301, 12691), (304, 12673), (311, 12637), (344, 12463), (348, 12442), (356, 12397), (363, 12349), (372, 12274), (378, 12250), (394, 12184), (398, 12160), (399, 12157), (403, 12145), (410, 12133), (415, 12115), (421, 12097), (424, 12088), (432, 12049), (443, 12010), (447, 12001), (457, 11977), (464, 11941),

Gene: Poompha\_48 Start: 34406, Stop: 32367, Start Num: 34

Candidate Starts for Poompha\_48:

(Start: 34 @34406 has 17 MA's), (78, 34271), (Start: 97 @34169 has 1 MA's), (102, 34136), (116, 34088), (118, 34079), (127, 34022), (141, 33962), (146, 33947), (169, 33806), (179, 33728), (182, 33716), (203, 33656), (208, 33626), (212, 33593), (213, 33587), (214, 33584), (221, 33551), (270, 33416), (279, 33392), (311, 33188), (329, 33086), (333, 33068), (343, 33017), (356, 32948), (357, 32942), (363, 32900), (365, 32891), (371, 32831), (392, 32756), (393, 32753), (394, 32750), (403, 32711), (417, 32660), (419, 32654), (432, 32597), (465, 32483), (479, 32426),

Gene: Popcicle\_50 Start: 35707, Stop: 33689, Start Num: 55

Candidate Starts for Popcicle\_50:

(Start: 55 @35707 has 95 MA's), (Start: 71 @35614 has 1 MA's), (Start: 73 @35605 has 3 MA's), (77, 35584), (92, 35515), (Start: 97 @35479 has 1 MA's), (102, 35446), (116, 35398), (118, 35389), (141, 35272), (157, 35176), (169, 35116), (176, 35047), (179, 35038), (182, 35026), (203, 34966), (208, 34936), (209, 34933), (210, 34921), (212, 34903), (213, 34897), (214, 34894), (235, 34789), (239, 34783), (279, 34726), (311, 34522), (321, 34462), (329, 34420), (333, 34402), (346, 34339), (357, 34276), (360, 34261), (363, 34234), (372, 34162), (393, 34075), (403, 34033), (428, 33940), (432, 33919), (465, 33805),

Gene: PotatoSplit\_56 Start: 35910, Stop: 33892, Start Num: 55

Candidate Starts for PotatoSplit\_56:

(Start: 55 @35910 has 95 MA's), (Start: 71 @35817 has 1 MA's), (Start: 73 @35808 has 3 MA's), (78, 35784), (Start: 88 @35733 has 3 MA's), (Start: 97 @35682 has 1 MA's), (116, 35601), (118, 35592), (141, 35472), (154, 35412), (157, 35376), (169, 35316), (179, 35238), (203, 35166), (208, 35136), (212, 35103), (213, 35097), (214, 35094), (230, 35013), (239, 34983), (279, 34929), (304, 34758), (321, 34662), (329, 34620), (333, 34602), (343, 34554), (346, 34542), (356, 34485), (357, 34479), (360, 34464), (363, 34437), (370, 34374), (371, 34368), (377, 34344), (402, 34239), (421, 34170), (426, 34152), (428, 34143), (432, 34122), (459, 34044), (465, 34008), (481, 33945),

Gene: Power\_50 Start: 35732, Stop: 33696, Start Num: 45

Candidate Starts for Power\_50:

(Start: 45 @35732 has 304 MA's), (Start: 73 @35621 has 3 MA's), (74, 35618), (Start: 88 @35546 has 3 MA's), (Start: 97 @35495 has 1 MA's), (100, 35477), (110, 35441), (118, 35405), (141, 35285), (169, 35129), (179, 35051), (203, 34979), (208, 34949), (209, 34946), (210, 34934), (212, 34916), (213, 34910), (214, 34907), (272, 34748), (283, 34703), (290, 34661), (311, 34523), (316, 34487), (329,

34421), (331, 34409), (344, 34349), (354, 34295), (357, 34277), (393, 34082), (402, 34043), (403, 34040), (417, 33989), (432, 33926), (447, 33878), (451, 33869), (484, 33728),

Gene: Priamo\_55 Start: 34576, Stop: 32534, Start Num: 45

Candidate Starts for Priamo\_55:

(32, 34609), (Start: 45 @34576 has 304 MA's), (Start: 73 @34465 has 3 MA's), (74, 34462), (102, 34306), (116, 34258), (118, 34249), (119, 34234), (127, 34189), (141, 34129), (153, 34072), (157, 34033), (165, 34000), (169, 33973), (170, 33964), (174, 33925), (178, 33898), (179, 33895), (202, 33838), (203, 33829), (209, 33796), (210, 33784), (212, 33766), (213, 33760), (214, 33757), (232, 33670), (239, 33646), (283, 33544), (290, 33502), (307, 33385), (311, 33364), (321, 33304), (326, 33277), (344, 33190), (346, 33181), (354, 33136), (357, 33118), (361, 33085), (378, 32983), (380, 32977), (393, 32923), (417, 32827), (432, 32764), (440, 32734), (451, 32707),

Gene: Prinash11\_44 Start: 34532, Stop: 32403, Start Num: 49

Candidate Starts for Prinash11\_44:

(Start: 49 @34532 has 219 MA's), (Start: 88 @34346 has 3 MA's), (Start: 97 @34295 has 1 MA's), (116, 34214), (118, 34205), (141, 34085), (146, 34070), (164, 33959), (165, 33956), (169, 33929), (170, 33920), (176, 33860), (179, 33851), (184, 33827), (203, 33740), (208, 33710), (209, 33707), (212, 33677), (213, 33671), (214, 33668), (239, 33557), (283, 33416), (308, 33254), (313, 33221), (322, 33173), (329, 33134), (343, 33065), (354, 33008), (356, 32996), (357, 32990), (363, 32948), (365, 32939), (372, 32876), (394, 32786), (399, 32759), (410, 32717), (421, 32681), (426, 32663), (428, 32654), (482, 32444),

Gene: Priya\_51 Start: 35737, Stop: 33698, Start Num: 45

Candidate Starts for Priya\_51:

(Start: 45 @35737 has 304 MA's), (Start: 73 @35623 has 3 MA's), (75, 35608), (78, 35599), (Start: 97 @35497 has 1 MA's), (118, 35407), (127, 35347), (141, 35287), (168, 35140), (169, 35131), (179, 35053), (182, 35041), (202, 34996), (203, 34987), (208, 34957), (210, 34942), (212, 34924), (213, 34918), (214, 34915), (272, 34750), (280, 34726), (283, 34705), (311, 34525), (331, 34411), (344, 34351), (361, 34246), (363, 34237), (393, 34084), (399, 34054), (417, 33991), (432, 33928),

Gene: Provolone\_48 Start: 32864, Stop: 34927, Start Num: 45

Candidate Starts for Provolone\_48:

(12, 32762), (13, 32768), (Start: 26 @32813 has 1 MA's), (Start: 45 @32864 has 304 MA's), (61, 32903), (Start: 71 @32966 has 1 MA's), (Start: 73 @32975 has 3 MA's), (81, 33026), (82, 33032), (Start: 88 @33065 has 3 MA's), (Start: 97 @33116 has 1 MA's), (118, 33206), (119, 33221), (134, 33293), (141, 33326), (161, 33443), (169, 33485), (170, 33494), (179, 33563), (180, 33566), (184, 33587), (203, 33653), (212, 33716), (214, 33725), (230, 33806), (270, 33866), (279, 33890), (307, 34079), (316, 34136), (340, 34259), (363, 34385), (365, 34394), (388, 34511), (389, 34523), (392, 34547), (393, 34550), (404, 34598), (421, 34652), (426, 34670), (432, 34700), (440, 34730), (451, 34754), (462, 34796), (481, 34874),

Gene: Puginator\_50 Start: 33455, Stop: 35590, Start Num: 45

Candidate Starts for Puginator\_50:

(Start: 45 @33455 has 304 MA's), (82, 33623), (Start: 88 @33656 has 3 MA's), (Start: 97 @33707 has 1 MA's), (116, 33788), (118, 33797), (135, 33896), (141, 33917), (161, 34034), (169, 34076), (170, 34085), (179, 34154), (184, 34178), (189, 34208), (203, 34283), (212, 34346), (260, 34511), (269, 34520), (279, 34547), (294, 34667), (307, 34736), (311, 34757), (316, 34793), (321, 34817), (323, 34820), (329, 34859), (357, 35003), (358, 35009), (360, 35018), (365, 35054), (371, 35114), (375, 35132), (378, 35141), (384, 35153), (388, 35171), (389, 35183), (392, 35207), (397, 35228), (411, 35279), (421, 35312), (426, 35330), (434, 35372), (453, 35423), (462, 35459), (478, 35528), (485, 35582),

Gene: Pukovnik\_50 Start: 36555, Stop: 34498, Start Num: 45

Candidate Starts for Pukovnik\_50:

(Start: 45 @36555 has 304 MA's), (74, 36441), (118, 36228), (119, 36213), (141, 36108), (169, 35952), (170, 35943), (179, 35874), (203, 35802), (208, 35772), (209, 35769), (210, 35757), (212, 35739), (213, 35733), (214, 35730), (232, 35643), (263, 35574), (266, 35562), (283, 35499), (290, 35457), (311, 35319), (316, 35283), (329, 35217), (331, 35205), (344, 35145), (357, 35073), (377, 34941), (378, 34938), (380, 34932), (388, 34911), (393, 34878), (398, 34851), (417, 34791), (422, 34773), (432, 34728), (447, 34680),

Gene: Pumbaa\_50 Start: 35393, Stop: 33360, Start Num: 49

Candidate Starts for Pumbaa\_50:

(Start: 49 @35393 has 219 MA's), (68, 35330), (Start: 73 @35282 has 3 MA's), (78, 35258), (92, 35192), (Start: 97 @35156 has 1 MA's), (102, 35123), (116, 35075), (118, 35066), (127, 35009), (134, 34982), (141, 34949), (169, 34793), (170, 34784), (179, 34715), (203, 34643), (208, 34613), (209, 34610), (212, 34580), (213, 34574), (214, 34571), (232, 34484), (244, 34454), (255, 34442), (261, 34433), (279, 34385), (311, 34181), (329, 34079), (333, 34061), (360, 33920), (363, 33893), (392, 33749), (393, 33746), (399, 33716), (417, 33653), (426, 33620), (428, 33611), (432, 33590), (447, 33542), (465, 33476),

Gene: PumpkinSpice\_44 Start: 19533, Stop: 21473, Start Num: 64

Candidate Starts for PumpkinSpice\_44:

(Start: 64 @19533 has 64 MA's), (90, 19665), (96, 19701), (102, 19737), (111, 19764), (114, 19776), (133, 19881), (148, 19938), (185, 20163), (206, 20217), (217, 20301), (228, 20352), (235, 20391), (248, 20403), (285, 20481), (297, 20580), (306, 20616), (333, 20763), (366, 20937), (369, 20973), (389, 21042), (390, 21045), (430, 21216), (468, 21354),

Gene: Puppy\_53 Start: 35388, Stop: 33367, Start Num: 49

Candidate Starts for Puppy\_53:

(Start: 49 @35388 has 219 MA's), (74, 35274), (92, 35187), (Start: 97 @35151 has 1 MA's), (116, 35070), (118, 35061), (126, 35004), (141, 34941), (169, 34785), (179, 34707), (185, 34686), (187, 34683), (203, 34641), (208, 34611), (210, 34596), (212, 34578), (213, 34572), (214, 34569), (221, 34536), (279, 34404), (311, 34200), (316, 34164), (321, 34140), (329, 34098), (333, 34080), (356, 33960), (357, 33954), (360, 33939), (363, 33912), (389, 33774), (403, 33711), (428, 33618), (432, 33597), (460, 33516), (465, 33483),

Gene: PurpleHaze\_54 Start: 35795, Stop: 33780, Start Num: 55

Candidate Starts for PurpleHaze\_54:

(Start: 55 @35795 has 95 MA's), (Start: 71 @35702 has 1 MA's), (Start: 73 @35693 has 3 MA's), (Start: 88 @35618 has 3 MA's), (Start: 97 @35567 has 1 MA's), (116, 35486), (118, 35477), (127, 35420), (141, 35360), (154, 35300), (157, 35264), (169, 35204), (170, 35195), (179, 35126), (182, 35114), (203, 35054), (208, 35024), (209, 35021), (210, 35009), (212, 34991), (213, 34985), (214, 34982), (221, 34949), (253, 34847), (279, 34817), (304, 34646), (310, 34613), (313, 34595), (316, 34574), (321, 34550), (329, 34508), (333, 34490), (343, 34442), (357, 34367), (363, 34325), (370, 34262), (371, 34256), (377, 34232), (402, 34127), (421, 34058), (426, 34040), (428, 34031), (432, 34010), (459, 33932), (465, 33896), (481, 33833),

Gene: Qobbit\_51 Start: 35699, Stop: 33660, Start Num: 45

Candidate Starts for Qobbit\_51:

(Start: 45 @35699 has 304 MA's), (Start: 73 @35585 has 3 MA's), (75, 35570), (78, 35561), (Start: 97 @35459 has 1 MA's), (118, 35369), (127, 35309), (141, 35249), (168, 35102), (169, 35093), (179, 35015), (182, 35003), (202, 34958), (203, 34949), (208, 34919), (210, 34904), (212, 34886), (213, 34880), (214, 34877), (272, 34712), (280, 34688), (283, 34667), (311, 34487), (331, 34373), (344, 34313), (361, 34208), (363, 34199), (393, 34046), (399, 34016), (417, 33953), (432, 33890),

Gene: Quaran19\_45 Start: 19524, Stop: 21464, Start Num: 64

Candidate Starts for Quaran19\_45:

(Start: 64 @19524 has 64 MA's), (90, 19656), (96, 19692), (102, 19728), (111, 19755), (114, 19767), (133, 19872), (148, 19929), (185, 20154), (206, 20208), (217, 20292), (228, 20343), (235, 20382), (248, 20394), (285, 20472), (297, 20571), (306, 20607), (333, 20754), (366, 20928), (369, 20964), (389, 21033), (390, 21036), (430, 21207), (468, 21345),

Gene: QueenB2\_50 Start: 35710, Stop: 33650, Start Num: 45

Candidate Starts for QueenB2\_50:

(Start: 45 @35710 has 304 MA's), (Start: 73 @35599 has 3 MA's), (Start: 88 @35524 has 3 MA's), (Start: 97 @35473 has 1 MA's), (102, 35440), (116, 35392), (118, 35383), (127, 35323), (141, 35263), (169, 35107), (179, 35029), (203, 34957), (208, 34927), (209, 34924), (212, 34894), (213, 34888), (214, 34885), (240, 34774), (272, 34702), (283, 34657), (290, 34615), (311, 34477), (316, 34441), (329, 34375), (331, 34363), (344, 34303), (354, 34249), (357, 34231), (393, 34036), (402, 33997), (403, 33994), (417, 33943), (419, 33937), (432, 33880), (440, 33850), (484, 33682),

Gene: QueenBeesly\_51 Start: 35679, Stop: 33643, Start Num: 45

Candidate Starts for QueenBeesly\_51:

(Start: 45 @35679 has 304 MA's), (Start: 73 @35568 has 3 MA's), (74, 35565), (Start: 88 @35493 has 3 MA's), (Start: 97 @35442 has 1 MA's), (100, 35424), (110, 35388), (118, 35352), (141, 35232), (168, 35085), (169, 35076), (179, 34998), (203, 34926), (208, 34896), (209, 34893), (210, 34881), (212, 34863), (213, 34857), (214, 34854), (272, 34695), (283, 34650), (290, 34608), (311, 34470), (316, 34434), (329, 34368), (331, 34356), (344, 34296), (354, 34242), (357, 34224), (393, 34029), (402, 33990), (403, 33987), (417, 33936), (432, 33873), (447, 33825), (451, 33816), (484, 33675),

Gene: QuinnKiro\_49 Start: 35710, Stop: 33692, Start Num: 55

Candidate Starts for QuinnKiro\_49:

(Start: 55 @35710 has 95 MA's), (Start: 71 @35617 has 1 MA's), (Start: 73 @35608 has 3 MA's), (77, 35587), (92, 35518), (Start: 97 @35482 has 1 MA's), (102, 35449), (116, 35401), (118, 35392), (141, 35275), (157, 35179), (169, 35119), (176, 35050), (179, 35041), (182, 35029), (203, 34969), (208, 34939), (209, 34936), (210, 34924), (212, 34906), (213, 34900), (214, 34897), (235, 34792), (239, 34786), (279, 34729), (311, 34525), (321, 34465), (329, 34423), (333, 34405), (346, 34342), (357, 34279), (360, 34264), (363, 34237), (372, 34165), (393, 34078), (403, 34036), (428, 33943), (432, 33922), (465, 33808),

Gene: Quokka\_49 Start: 34526, Stop: 32664, Start Num: 88

Candidate Starts for Quokka\_49:

(Start: 45 @34712 has 304 MA's), (Start: 71 @34610 has 1 MA's), (Start: 73 @34601 has 3 MA's), (Start: 88 @34526 has 3 MA's), (116, 34394), (118, 34385), (128, 34322), (141, 34265), (168, 34118), (169, 34109), (174, 34061), (175, 34046), (179, 34031), (203, 33965), (208, 33935), (209, 33932), (210, 33920), (212, 33902), (213, 33896), (214, 33893), (263, 33740), (270, 33713), (283, 33665), (290, 33623), (311, 33485), (316, 33449), (326, 33398), (331, 33371), (344, 33311), (346, 33302), (357, 33239), (361, 33206), (363, 33197), (373, 33116), (393, 33044), (398, 33017), (417, 32957), (432, 32894),

Gene: R4\_49 Start: 33396, Stop: 35510, Start Num: 45

Candidate Starts for R4\_49:

(Start: 45 @33396 has 304 MA's), (82, 33564), (Start: 88 @33597 has 3 MA's), (Start: 97 @33648 has 1 MA's), (116, 33729), (118, 33738), (133, 33822), (134, 33825), (135, 33837), (141, 33858), (161, 33975), (165, 33990), (169, 34017), (179, 34095), (203, 34203), (208, 34233), (209, 34236), (212, 34266), (269, 34440), (279, 34467), (288, 34524), (290, 34533), (294, 34587), (297, 34599), (302, 34626), (311, 34677), (316, 34713), (323, 34740), (329, 34779), (357, 34923), (358, 34929), (360,

34938), (365, 34974), (371, 35034), (375, 35052), (379, 35064), (394, 35133), (404, 35178), (411, 35199), (421, 35232), (426, 35250), (434, 35292), (462, 35379), (478, 35448), (485, 35502),

Gene: RER2\_34 Start: 28946, Stop: 26901, Start Num: 45

Candidate Starts for RER2\_34:

(Start: 45 @28946 has 304 MA's), (74, 28826), (87, 28757), (Start: 97 @28703 has 1 MA's), (116, 28622), (118, 28613), (127, 28553), (132, 28535), (154, 28433), (156, 28400), (157, 28397), (159, 28388), (164, 28367), (168, 28346), (169, 28337), (175, 28274), (179, 28259), (181, 28253), (203, 28193), (209, 28160), (212, 28130), (213, 28124), (214, 28121), (252, 27986), (304, 27773), (310, 27740), (326, 27650), (328, 27641), (363, 27449), (372, 27377), (385, 27338), (387, 27335), (388, 27323), (393, 27290), (402, 27251), (421, 27179), (428, 27152), (432, 27131), (436, 27113), (459, 27053), (465, 27017),

Gene: RGL3\_35 Start: 29611, Stop: 27569, Start Num: 45

Candidate Starts for RGL3\_35:

(Start: 45 @29611 has 304 MA's), (59, 29572), (74, 29494), (82, 29455), (87, 29425), (Start: 97 @29371 has 1 MA's), (102, 29338), (116, 29290), (118, 29281), (154, 29101), (157, 29065), (165, 29032), (168, 29014), (169, 29005), (175, 28942), (179, 28927), (185, 28906), (187, 28903), (203, 28861), (209, 28828), (212, 28798), (213, 28792), (214, 28789), (232, 28702), (270, 28633), (288, 28552), (290, 28543), (293, 28510), (297, 28477), (311, 28405), (316, 28369), (326, 28318), (350, 28204), (354, 28177), (363, 28117), (365, 28108), (371, 28048), (372, 28045), (387, 28003), (388, 27991), (393, 27958), (394, 27955), (421, 27847), (428, 27820), (465, 27685),

Gene: Rachaly\_50 Start: 36008, Stop: 33960, Start Num: 45

Candidate Starts for Rachaly\_50:

(Start: 45 @36008 has 304 MA's), (Start: 73 @35897 has 3 MA's), (74, 35894), (Start: 88 @35822 has 3 MA's), (Start: 97 @35771 has 1 MA's), (102, 35738), (116, 35690), (118, 35681), (127, 35621), (141, 35561), (169, 35405), (170, 35396), (179, 35327), (203, 35261), (208, 35231), (209, 35228), (210, 35216), (212, 35198), (213, 35192), (214, 35189), (232, 35102), (263, 35042), (266, 35030), (272, 35012), (277, 34997), (283, 34967), (290, 34925), (311, 34787), (329, 34685), (331, 34673), (344, 34613), (346, 34604), (357, 34541), (361, 34508), (374, 34415), (393, 34346), (398, 34319), (402, 34307), (403, 34304), (417, 34253), (432, 34190), (447, 34142), (451, 34133),

Gene: Rahalelujah\_51 Start: 35248, Stop: 33209, Start Num: 45

Candidate Starts for Rahalelujah\_51:

(Start: 43 @35251 has 3 MA's), (Start: 45 @35248 has 304 MA's), (Start: 73 @35134 has 3 MA's), (74, 35131), (Start: 97 @35008 has 1 MA's), (102, 34975), (118, 34918), (127, 34858), (128, 34855), (141, 34798), (169, 34642), (179, 34564), (182, 34552), (202, 34507), (203, 34498), (208, 34468), (210, 34453), (212, 34435), (213, 34429), (214, 34426), (223, 34387), (272, 34261), (283, 34216), (290, 34174), (301, 34090), (311, 34036), (326, 33949), (331, 33922), (344, 33862), (361, 33757), (363, 33748), (393, 33595), (402, 33556), (432, 33439), (447, 33391),

Gene: Rana\_48 Start: 32494, Stop: 34584, Start Num: 45

Candidate Starts for Rana\_48:

(27, 32452), (30, 32458), (Start: 45 @32494 has 304 MA's), (61, 32539), (79, 32650), (Start: 88 @32704 has 3 MA's), (90, 32710), (Start: 97 @32755 has 1 MA's), (116, 32836), (118, 32845), (132, 32923), (134, 32932), (141, 32965), (154, 33025), (156, 33058), (161, 33082), (168, 33115), (169, 33124), (179, 33202), (180, 33205), (195, 33262), (203, 33292), (212, 33355), (214, 33364), (225, 33415), (242, 33484), (275, 33529), (279, 33541), (293, 33640), (297, 33673), (307, 33730), (311, 33751), (316, 33787), (326, 33838), (334, 33874), (346, 33934), (357, 33997), (358, 34003), (365, 34048), (371, 34108), (378, 34135), (384, 34147), (392, 34201), (394, 34207), (404, 34252), (411, 34273), (421, 34306), (426, 34324), (432, 34354), (434, 34366), (443, 34393), (462, 34453), (479, 34525), (485, 34576),

Gene: Rasputin\_41 Start: 32044, Stop: 29999, Start Num: 45

Candidate Starts for Rasputin\_41:

(Start: 45 @32044 has 304 MA's), (74, 31924), (85, 31861), (87, 31855), (Start: 97 @31801 has 1 MA's), (116, 31720), (118, 31711), (127, 31651), (132, 31633), (154, 31531), (156, 31498), (157, 31495), (159, 31486), (164, 31465), (169, 31435), (175, 31372), (179, 31357), (181, 31351), (203, 31291), (209, 31258), (212, 31228), (213, 31222), (214, 31219), (252, 31084), (301, 30889), (304, 30871), (310, 30838), (326, 30748), (328, 30739), (354, 30607), (363, 30547), (372, 30475), (387, 30433), (388, 30421), (393, 30388), (402, 30349), (419, 30286), (421, 30277), (428, 30250), (432, 30229), (465, 30115),

Gene: ReMo\_55 Start: 34692, Stop: 32629, Start Num: 40

Candidate Starts for ReMo\_55:

(Start: 40 @34692 has 21 MA's), (87, 34497), (Start: 88 @34494 has 3 MA's), (116, 34362), (118, 34353), (141, 34233), (170, 34068), (174, 34029), (179, 33999), (194, 33957), (203, 33933), (208, 33903), (212, 33870), (213, 33864), (214, 33861), (270, 33687), (275, 33675), (283, 33639), (310, 33462), (311, 33459), (316, 33423), (329, 33357), (337, 33318), (339, 33306), (356, 33219), (357, 33213), (363, 33171), (411, 32940), (432, 32859), (452, 32799), (459, 32781), (479, 32688), (482, 32670),

Gene: Reba\_54 Start: 35455, Stop: 33440, Start Num: 55

Candidate Starts for Reba\_54:

(Start: 55 @35455 has 95 MA's), (Start: 71 @35362 has 1 MA's), (Start: 73 @35353 has 3 MA's), (Start: 88 @35278 has 3 MA's), (Start: 97 @35227 has 1 MA's), (116, 35146), (118, 35137), (127, 35080), (141, 35020), (154, 34960), (157, 34924), (169, 34864), (170, 34855), (179, 34786), (182, 34774), (203, 34714), (208, 34684), (209, 34681), (210, 34669), (212, 34651), (213, 34645), (214, 34642), (221, 34609), (253, 34507), (279, 34477), (304, 34306), (310, 34273), (313, 34255), (316, 34234), (321, 34210), (329, 34168), (333, 34150), (343, 34102), (357, 34027), (363, 33985), (370, 33922), (371, 33916), (377, 33892), (402, 33787), (421, 33718), (426, 33700), (428, 33691), (432, 33670), (459, 33592), (465, 33556), (481, 33493),

Gene: Rebeuca\_49 Start: 35550, Stop: 33469, Start Num: 34

Candidate Starts for Rebeuca\_49:

(Start: 34 @35550 has 17 MA's), (44, 35529), (Start: 73 @35409 has 3 MA's), (74, 35406), (78, 35385), (Start: 97 @35283 has 1 MA's), (102, 35250), (116, 35202), (118, 35193), (127, 35136), (141, 35076), (146, 35061), (157, 34980), (169, 34920), (179, 34842), (182, 34830), (202, 34779), (203, 34770), (208, 34740), (212, 34707), (213, 34701), (214, 34698), (266, 34533), (272, 34515), (283, 34470), (290, 34428), (311, 34290), (329, 34188), (333, 34170), (343, 34119), (356, 34050), (357, 34044), (360, 34029), (363, 34002), (365, 33993), (371, 33933), (392, 33858), (393, 33855), (394, 33852), (403, 33813), (417, 33762), (419, 33756), (432, 33699), (465, 33585), (479, 33528),

Gene: RedBear\_48 Start: 32197, Stop: 34287, Start Num: 45

Candidate Starts for RedBear\_48:

(30, 32158), (Start: 45 @32197 has 304 MA's), (79, 32353), (Start: 88 @32407 has 3 MA's), (90, 32413), (Start: 97 @32458 has 1 MA's), (116, 32539), (118, 32548), (132, 32626), (134, 32635), (141, 32668), (147, 32686), (161, 32785), (169, 32827), (179, 32905), (180, 32908), (203, 32995), (212, 33058), (214, 33067), (275, 33232), (279, 33244), (297, 33376), (311, 33454), (313, 33469), (316, 33490), (326, 33541), (357, 33700), (358, 33706), (365, 33751), (371, 33811), (378, 33838), (392, 33904), (394, 33910), (404, 33955), (410, 33973), (421, 34009), (426, 34027), (432, 34057), (443, 34096), (462, 34156), (479, 34228),

Gene: RedRock\_53 Start: 36924, Stop: 34861, Start Num: 42

Candidate Starts for RedRock\_53:

(Start: 42 @36924 has 1 MA's), (61, 36882), (Start: 73 @36810 has 3 MA's), (74, 36807), (Start: 88 @36735 has 3 MA's), (Start: 97 @36684 has 1 MA's), (102, 36651), (116, 36603), (118, 36594), (127, 36534), (141, 36474), (169, 36318), (170, 36309), (171, 36300), (179, 36240), (191, 36204), (203, 36174), (208, 36144), (209, 36141), (210, 36129), (212, 36111), (213, 36105), (214, 36102), (232, 36015), (272, 35916), (277, 35901), (283, 35871), (290, 35829), (311, 35691), (316, 35655), (329, 35589), (331, 35577), (357, 35445), (365, 35394), (377, 35313), (378, 35310), (380, 35304), (393, 35250), (402, 35211), (411, 35172), (421, 35139), (432, 35091), (451, 35034),

Gene: Refuge\_50 Start: 36910, Stop: 34871, Start Num: 45

Candidate Starts for Refuge\_50:

(Start: 45 @36910 has 304 MA's), (Start: 73 @36796 has 3 MA's), (74, 36793), (Start: 97 @36670 has 1 MA's), (102, 36637), (118, 36580), (127, 36520), (141, 36460), (169, 36304), (178, 36229), (179, 36226), (185, 36205), (203, 36160), (209, 36127), (212, 36097), (213, 36091), (214, 36088), (230, 36007), (272, 35923), (280, 35899), (283, 35878), (290, 35836), (311, 35698), (321, 35638), (329, 35596), (331, 35584), (333, 35578), (344, 35524), (346, 35515), (357, 35452), (361, 35419), (369, 35353), (393, 35257), (394, 35254), (410, 35185), (417, 35164), (432, 35101), (459, 35023),

Gene: Relief\_49 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for Relief\_49:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: Remus\_56 Start: 34602, Stop: 32539, Start Num: 40

Candidate Starts for Remus\_56:

(Start: 40 @34602 has 21 MA's), (Start: 73 @34479 has 3 MA's), (87, 34407), (Start: 88 @34404 has 3 MA's), (116, 34272), (118, 34263), (141, 34143), (170, 33978), (174, 33939), (179, 33909), (194, 33867), (203, 33843), (208, 33813), (212, 33780), (213, 33774), (214, 33771), (270, 33597), (275, 33585), (283, 33549), (310, 33372), (311, 33369), (316, 33333), (329, 33267), (337, 33228), (339, 33216), (356, 33129), (357, 33123), (363, 33081), (411, 32850), (432, 32769), (452, 32709), (459, 32691), (479, 32598), (482, 32580),

Gene: ResDef\_50 Start: 35710, Stop: 33692, Start Num: 55

Candidate Starts for ResDef\_50:

(Start: 55 @35710 has 95 MA's), (Start: 71 @35617 has 1 MA's), (Start: 73 @35608 has 3 MA's), (77, 35587), (92, 35518), (Start: 97 @35482 has 1 MA's), (102, 35449), (116, 35401), (118, 35392), (141, 35275), (157, 35179), (169, 35119), (176, 35050), (179, 35041), (182, 35029), (203, 34969), (208, 34939), (209, 34936), (210, 34924), (212, 34906), (213, 34900), (214, 34897), (235, 34792), (239, 34786), (279, 34729), (311, 34525), (321, 34465), (329, 34423), (333, 34405), (346, 34342), (357, 34279), (360, 34264), (363, 34237), (372, 34165), (393, 34078), (403, 34036), (428, 33943), (432, 33922), (465, 33808),

Gene: Retro23\_52 Start: 36110, Stop: 34050, Start Num: 45

Candidate Starts for Retro23\_52:

(Start: 45 @36110 has 304 MA's), (59, 36074), (Start: 73 @35999 has 3 MA's), (74, 35996), (Start: 88 @35924 has 3 MA's), (Start: 97 @35873 has 1 MA's), (100, 35855), (110, 35819), (118, 35783), (141, 35663), (168, 35516), (169, 35507), (179, 35429), (203, 35357), (208, 35327), (209, 35324), (210, 35312), (212, 35294), (213, 35288), (214, 35285), (240, 35174), (272, 35102), (283, 35057), (290, 35015), (311, 34877), (316, 34841), (329, 34775), (331, 34763), (344, 34703), (354, 34649), (357,



34631), (393, 34436), (402, 34397), (403, 34394), (417, 34343), (432, 34280), (447, 34232), (451, 34223), (484, 34082),

Gene: RexFury\_40 Start: 32105, Stop: 30060, Start Num: 45

Candidate Starts for RexFury\_40:

(Start: 45 @32105 has 304 MA's), (74, 31985), (87, 31916), (Start: 97 @31862 has 1 MA's), (116, 31781), (118, 31772), (127, 31712), (132, 31694), (154, 31592), (156, 31559), (157, 31556), (159, 31547), (164, 31526), (169, 31496), (175, 31433), (179, 31418), (181, 31412), (203, 31352), (209, 31319), (212, 31289), (213, 31283), (214, 31280), (252, 31145), (301, 30950), (304, 30932), (310, 30899), (326, 30809), (328, 30800), (354, 30668), (363, 30608), (372, 30536), (387, 30494), (388, 30482), (393, 30449), (402, 30410), (419, 30347), (421, 30338), (428, 30311), (432, 30290), (465, 30176),

Gene: Rhodalysa\_41 Start: 32074, Stop: 30029, Start Num: 45

Candidate Starts for Rhodalysa\_41:

(Start: 45 @32074 has 304 MA's), (74, 31954), (85, 31891), (87, 31885), (Start: 97 @31831 has 1 MA's), (116, 31750), (118, 31741), (127, 31681), (132, 31663), (154, 31561), (156, 31528), (157, 31525), (159, 31516), (164, 31495), (168, 31474), (169, 31465), (175, 31402), (179, 31387), (181, 31381), (203, 31321), (209, 31288), (212, 31258), (213, 31252), (214, 31249), (252, 31114), (304, 30901), (310, 30868), (326, 30778), (328, 30769), (354, 30637), (363, 30577), (372, 30505), (385, 30466), (387, 30463), (388, 30451), (402, 30379), (421, 30307), (428, 30280), (465, 30145),

Gene: RhynO\_50 Start: 35352, Stop: 33271, Start Num: 34

Candidate Starts for RhynO\_50:

(Start: 34 @35352 has 17 MA's), (44, 35331), (Start: 73 @35211 has 3 MA's), (74, 35208), (78, 35187), (Start: 97 @35085 has 1 MA's), (102, 35052), (116, 35004), (118, 34995), (141, 34878), (146, 34863), (157, 34782), (169, 34722), (179, 34644), (182, 34632), (202, 34581), (203, 34572), (208, 34542), (212, 34509), (213, 34503), (214, 34500), (266, 34335), (272, 34317), (283, 34272), (290, 34230), (311, 34092), (329, 33990), (333, 33972), (343, 33921), (356, 33852), (357, 33846), (360, 33831), (363, 33804), (365, 33795), (371, 33735), (392, 33660), (393, 33657), (394, 33654), (403, 33615), (417, 33564), (419, 33558), (432, 33501), (465, 33387), (479, 33330),

Gene: Rifter\_54 Start: 34380, Stop: 32326, Start Num: 45

Candidate Starts for Rifter\_54:

(Start: 45 @34380 has 304 MA's), (Start: 88 @34194 has 3 MA's), (Start: 97 @34143 has 1 MA's), (102, 34110), (116, 34062), (118, 34053), (127, 33993), (141, 33933), (153, 33876), (157, 33837), (165, 33804), (169, 33777), (170, 33768), (175, 33714), (179, 33699), (203, 33627), (208, 33597), (212, 33564), (213, 33558), (214, 33555), (232, 33468), (250, 33414), (270, 33381), (283, 33333), (290, 33291), (311, 33153), (331, 33039), (344, 32979), (346, 32970), (354, 32925), (357, 32907), (361, 32874), (378, 32772), (380, 32766), (393, 32712), (398, 32685), (402, 32673), (417, 32619), (432, 32556), (440, 32526), (451, 32499), (459, 32478),

Gene: Rikishi\_48 Start: 19439, Stop: 21379, Start Num: 64

Candidate Starts for Rikishi\_48:

(Start: 64 @19439 has 64 MA's), (90, 19571), (96, 19607), (102, 19643), (111, 19670), (114, 19682), (133, 19787), (148, 19844), (185, 20069), (206, 20123), (217, 20207), (228, 20258), (235, 20297), (248, 20309), (285, 20387), (297, 20486), (306, 20522), (333, 20669), (366, 20843), (369, 20879), (389, 20948), (390, 20951), (430, 21122), (468, 21260),

Gene: Riptide\_41 Start: 18134, Stop: 20077, Start Num: 64

Candidate Starts for Riptide\_41:

(Start: 64 @18134 has 64 MA's), (Start: 67 @18140 has 1 MA's), (83, 18242), (86, 18263), (90, 18272), (106, 18362), (111, 18371), (112, 18380), (114, 18383), (133, 18488), (185, 18770), (198, 18797),

(217, 18908), (235, 18998), (248, 19010), (306, 19223), (333, 19370), (336, 19388), (366, 19544), (390, 19652), (430, 19823), (438, 19862), (468, 19961), (483, 20033), (487, 20063),

Gene: Roary\_48 Start: 33982, Stop: 31937, Start Num: 49

Candidate Starts for Roary\_48:

(Start: 49 @33982 has 219 MA's), (75, 33856), (87, 33799), (Start: 88 @33796 has 3 MA's), (Start: 97 @33745 has 1 MA's), (102, 33712), (116, 33664), (118, 33655), (123, 33613), (147, 33517), (153, 33478), (158, 33433), (168, 33388), (169, 33379), (175, 33316), (176, 33310), (179, 33301), (180, 33298), (187, 33277), (203, 33229), (208, 33199), (209, 33196), (212, 33166), (213, 33160), (214, 33157), (283, 32959), (311, 32776), (316, 32740), (329, 32674), (350, 32575), (356, 32536), (363, 32488), (365, 32479), (377, 32395), (399, 32293), (411, 32248), (426, 32197), (428, 32188), (432, 32167), (436, 32149), (482, 31978),

Gene: Rockstar\_51 Start: 35206, Stop: 33185, Start Num: 49

Candidate Starts for Rockstar\_51:

(Start: 49 @35206 has 219 MA's), (Start: 73 @35095 has 3 MA's), (74, 35092), (92, 35005), (Start: 97 @34969 has 1 MA's), (102, 34936), (116, 34888), (118, 34879), (141, 34759), (146, 34744), (165, 34630), (169, 34603), (170, 34594), (179, 34525), (185, 34504), (187, 34501), (203, 34459), (210, 34414), (212, 34396), (213, 34390), (214, 34387), (279, 34222), (311, 34018), (321, 33958), (329, 33916), (333, 33898), (356, 33778), (357, 33772), (360, 33757), (372, 33658), (392, 33574), (399, 33541), (403, 33529), (428, 33436), (432, 33415), (465, 33301),

Gene: Roksolana\_55 Start: 35244, Stop: 33190, Start Num: 45

Candidate Starts for Roksolana\_55:

(Start: 45 @35244 has 304 MA's), (Start: 88 @35058 has 3 MA's), (Start: 97 @35007 has 1 MA's), (102, 34974), (116, 34926), (118, 34917), (127, 34857), (141, 34797), (153, 34740), (157, 34701), (165, 34668), (169, 34641), (170, 34632), (175, 34578), (179, 34563), (203, 34491), (208, 34461), (212, 34428), (213, 34422), (214, 34419), (232, 34332), (250, 34278), (270, 34245), (283, 34197), (290, 34155), (311, 34017), (331, 33903), (344, 33843), (346, 33834), (354, 33789), (357, 33771), (361, 33738), (378, 33636), (380, 33630), (393, 33576), (402, 33537), (417, 33483), (432, 33420), (440, 33390), (451, 33363), (461, 33324),

Gene: Romney\_50 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for Romney\_50:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: Roosevelt\_49 Start: 35450, Stop: 33417, Start Num: 49

Candidate Starts for Roosevelt\_49:

(Start: 49 @35450 has 219 MA's), (68, 35387), (Start: 73 @35339 has 3 MA's), (78, 35315), (92, 35249), (Start: 97 @35213 has 1 MA's), (102, 35180), (116, 35132), (118, 35123), (127, 35066), (134, 35039), (141, 35006), (169, 34850), (170, 34841), (179, 34772), (203, 34700), (208, 34670), (209, 34667), (212, 34637), (213, 34631), (214, 34628), (232, 34541), (244, 34511), (255, 34499), (261, 34490), (279, 34442), (311, 34238), (329, 34136), (333, 34118), (360, 33977), (363, 33950), (392, 33806), (393, 33803), (399, 33773), (417, 33710), (426, 33677), (428, 33668), (432, 33647), (447, 33599), (465, 33533),

Gene: Rosa24\_49 Start: 35476, Stop: 33443, Start Num: 49

Candidate Starts for Rosa24\_49:

(Start: 49 @35476 has 219 MA's), (68, 35413), (Start: 73 @35365 has 3 MA's), (78, 35341), (92, 35275), (Start: 97 @35239 has 1 MA's), (102, 35206), (116, 35158), (118, 35149), (127, 35092), (134, 35065), (141, 35032), (169, 34876), (170, 34867), (179, 34798), (203, 34726), (208, 34696), (209, 34693), (212, 34663), (213, 34657), (214, 34654), (232, 34567), (244, 34537), (255, 34525), (261, 34516), (279, 34468), (311, 34264), (329, 34162), (333, 34144), (360, 34003), (363, 33976), (392, 33832), (393, 33829), (399, 33799), (417, 33736), (426, 33703), (428, 33694), (432, 33673), (447, 33625), (465, 33559),

Gene: Rosalind\_55 Start: 34900, Stop: 32837, Start Num: 40

Candidate Starts for Rosalind\_55:

(Start: 40 @34900 has 21 MA's), (77, 34756), (87, 34705), (Start: 88 @34702 has 3 MA's), (116, 34570), (118, 34561), (141, 34441), (170, 34276), (174, 34237), (179, 34207), (194, 34165), (203, 34141), (208, 34111), (212, 34078), (213, 34072), (214, 34069), (270, 33895), (275, 33883), (283, 33847), (310, 33670), (311, 33667), (316, 33631), (337, 33526), (339, 33514), (356, 33427), (357, 33421), (363, 33379), (411, 33148), (432, 33067), (452, 33007), (459, 32989), (479, 32896), (482, 32878),

Gene: Rowdy\_53 Start: 35260, Stop: 33179, Start Num: 34

Candidate Starts for Rowdy\_53:

(Start: 34 @35260 has 17 MA's), (44, 35239), (Start: 73 @35119 has 3 MA's), (74, 35116), (78, 35095), (Start: 97 @34993 has 1 MA's), (102, 34960), (116, 34912), (118, 34903), (127, 34846), (141, 34786), (146, 34771), (157, 34690), (169, 34630), (179, 34552), (182, 34540), (202, 34489), (203, 34480), (208, 34450), (212, 34417), (213, 34411), (214, 34408), (266, 34243), (272, 34225), (283, 34180), (290, 34138), (311, 34000), (329, 33898), (333, 33880), (343, 33829), (356, 33760), (357, 33754), (360, 33739), (363, 33712), (365, 33703), (371, 33643), (392, 33568), (393, 33565), (394, 33562), (403, 33523), (417, 33472), (419, 33466), (432, 33409), (465, 33295), (479, 33238),

Gene: Ruin\_50 Start: 35441, Stop: 33408, Start Num: 49

Candidate Starts for Ruin\_50:

(Start: 49 @35441 has 219 MA's), (68, 35378), (Start: 73 @35330 has 3 MA's), (78, 35306), (92, 35240), (Start: 97 @35204 has 1 MA's), (102, 35171), (116, 35123), (118, 35114), (127, 35057), (134, 35030), (141, 34997), (169, 34841), (170, 34832), (179, 34763), (203, 34691), (208, 34661), (209, 34658), (212, 34628), (213, 34622), (214, 34619), (232, 34532), (244, 34502), (255, 34490), (261, 34481), (279, 34433), (311, 34229), (329, 34127), (333, 34109), (360, 33968), (363, 33941), (392, 33797), (393, 33794), (399, 33764), (417, 33701), (426, 33668), (428, 33659), (432, 33638), (447, 33590), (465, 33524),

Gene: Rummer\_53 Start: 35934, Stop: 33916, Start Num: 55

Candidate Starts for Rummer\_53:

(Start: 55 @35934 has 95 MA's), (Start: 71 @35841 has 1 MA's), (Start: 73 @35832 has 3 MA's), (78, 35808), (Start: 88 @35757 has 3 MA's), (Start: 97 @35706 has 1 MA's), (116, 35625), (118, 35616), (141, 35499), (157, 35403), (169, 35343), (176, 35274), (179, 35265), (180, 35262), (182, 35253), (203, 35193), (208, 35163), (209, 35160), (210, 35148), (212, 35130), (213, 35124), (214, 35121), (235, 35016), (239, 35010), (279, 34953), (311, 34749), (313, 34734), (316, 34713), (321, 34689), (326, 34662), (329, 34647), (356, 34509), (357, 34503), (360, 34488), (363, 34461), (370, 34398), (371, 34392), (377, 34368), (402, 34263), (411, 34227), (432, 34146), (459, 34068), (465, 34032), (481, 33969),

Gene: Rusticus\_48 Start: 31960, Stop: 34050, Start Num: 45

Candidate Starts for Rusticus\_48:

(14, 31876), (16, 31882), (27, 31918), (30, 31924), (Start: 45 @31960 has 304 MA's), (78, 32101), (79, 32116), (82, 32137), (Start: 88 @32170 has 3 MA's), (90, 32176), (Start: 97 @32221 has 1 MA's),

(116, 32302), (118, 32311), (132, 32389), (134, 32398), (141, 32431), (156, 32524), (161, 32548), (169, 32590), (179, 32668), (180, 32671), (203, 32758), (212, 32821), (214, 32830), (275, 32995), (279, 33007), (302, 33166), (311, 33217), (313, 33232), (316, 33253), (329, 33319), (357, 33463), (358, 33469), (360, 33478), (365, 33514), (369, 33562), (371, 33574), (378, 33601), (384, 33613), (392, 33667), (404, 33718), (411, 33739), (421, 33772), (426, 33790), (432, 33820), (434, 33832), (443, 33859), (462, 33919), (478, 33988), (479, 33991), (485, 34042),

Gene: RyeScarlet\_52 Start: 35742, Stop: 33703, Start Num: 45

Candidate Starts for RyeScarlet\_52:

(Start: 45 @35742 has 304 MA's), (Start: 73 @35628 has 3 MA's), (75, 35613), (78, 35604), (Start: 97 @35502 has 1 MA's), (118, 35412), (127, 35352), (128, 35349), (141, 35292), (168, 35145), (169, 35136), (179, 35058), (182, 35046), (203, 34992), (208, 34962), (210, 34947), (212, 34929), (213, 34923), (214, 34920), (272, 34755), (283, 34710), (311, 34530), (329, 34428), (344, 34356), (361, 34251), (363, 34242), (393, 34089), (399, 34059), (417, 33996), (432, 33933),

Gene: Sabertooth\_50 Start: 35450, Stop: 33417, Start Num: 49

Candidate Starts for Sabertooth\_50:

(Start: 49 @35450 has 219 MA's), (68, 35387), (Start: 73 @35339 has 3 MA's), (78, 35315), (92, 35249), (Start: 97 @35213 has 1 MA's), (102, 35180), (116, 35132), (118, 35123), (127, 35066), (134, 35039), (141, 35006), (169, 34850), (170, 34841), (179, 34772), (203, 34700), (208, 34670), (209, 34667), (212, 34637), (213, 34631), (214, 34628), (232, 34541), (241, 34517), (244, 34511), (255, 34499), (261, 34490), (279, 34442), (311, 34238), (329, 34136), (333, 34118), (360, 33977), (363, 33950), (392, 33806), (393, 33803), (399, 33773), (417, 33710), (426, 33677), (428, 33668), (432, 33647), (447, 33599), (465, 33533),

Gene: Sabia\_54 Start: 35915, Stop: 33897, Start Num: 55

Candidate Starts for Sabia\_54:

(Start: 55 @35915 has 95 MA's), (Start: 73 @35813 has 3 MA's), (78, 35789), (Start: 88 @35738 has 3 MA's), (Start: 97 @35687 has 1 MA's), (116, 35606), (118, 35597), (141, 35477), (154, 35417), (157, 35381), (169, 35321), (179, 35243), (203, 35171), (208, 35141), (212, 35108), (213, 35102), (214, 35099), (230, 35018), (239, 34988), (279, 34934), (304, 34763), (321, 34667), (329, 34625), (333, 34607), (343, 34559), (346, 34547), (356, 34490), (357, 34484), (360, 34469), (363, 34442), (370, 34379), (371, 34373), (377, 34349), (402, 34244), (421, 34175), (426, 34157), (428, 34148), (432, 34127), (459, 34049), (465, 34013), (481, 33950),

Gene: Sabinator\_53 Start: 35905, Stop: 33887, Start Num: 55

Candidate Starts for Sabinator\_53:

(Start: 55 @35905 has 95 MA's), (Start: 71 @35812 has 1 MA's), (Start: 73 @35803 has 3 MA's), (78, 35779), (Start: 88 @35728 has 3 MA's), (Start: 97 @35677 has 1 MA's), (116, 35596), (118, 35587), (141, 35467), (154, 35407), (157, 35371), (169, 35311), (179, 35233), (203, 35161), (208, 35131), (212, 35098), (213, 35092), (214, 35089), (230, 35008), (239, 34978), (279, 34924), (304, 34753), (321, 34657), (329, 34615), (333, 34597), (343, 34549), (346, 34537), (356, 34480), (357, 34474), (360, 34459), (363, 34432), (370, 34369), (371, 34363), (377, 34339), (402, 34234), (421, 34165), (426, 34147), (428, 34138), (432, 34117), (459, 34039), (465, 34003), (481, 33940),

Gene: Sachima\_48 Start: 35652, Stop: 33613, Start Num: 45

Candidate Starts for Sachima\_48:

(Start: 45 @35652 has 304 MA's), (Start: 73 @35538 has 3 MA's), (75, 35523), (78, 35514), (Start: 97 @35412 has 1 MA's), (118, 35322), (127, 35262), (141, 35202), (168, 35055), (169, 35046), (179, 34968), (182, 34956), (203, 34902), (208, 34872), (210, 34857), (212, 34839), (213, 34833), (214, 34830), (272, 34665), (283, 34620), (311, 34440), (329, 34338), (344, 34266), (361, 34161), (363, 34152), (393, 33999), (399, 33969), (417, 33906), (432, 33843),

Gene: Saftant\_47 Start: 33416, Stop: 35464, Start Num: 45

Candidate Starts for Saftant\_47:

(Start: 45 @33416 has 304 MA's), (Start: 71 @33518 has 1 MA's), (Start: 73 @33527 has 3 MA's), (81, 33578), (82, 33584), (Start: 88 @33617 has 3 MA's), (Start: 97 @33668 has 1 MA's), (102, 33701), (118, 33758), (119, 33773), (134, 33845), (141, 33878), (161, 33995), (169, 34037), (170, 34046), (179, 34115), (180, 34118), (184, 34139), (203, 34190), (208, 34220), (212, 34253), (275, 34415), (279, 34427), (286, 34466), (307, 34616), (316, 34673), (340, 34796), (360, 34895), (363, 34922), (365, 34931), (388, 35048), (392, 35084), (393, 35087), (404, 35135), (421, 35189), (426, 35207), (432, 35237), (436, 35255), (462, 35333), (485, 35456),

Gene: Saintus\_42 Start: 30698, Stop: 28659, Start Num: 49

Candidate Starts for Saintus\_42:

(Start: 49 @30698 has 219 MA's), (75, 30572), (87, 30515), (Start: 88 @30512 has 3 MA's), (Start: 97 @30461 has 1 MA's), (102, 30428), (116, 30380), (118, 30371), (123, 30329), (147, 30233), (153, 30194), (158, 30149), (168, 30104), (169, 30095), (175, 30032), (176, 30026), (179, 30017), (180, 30014), (203, 29945), (208, 29915), (209, 29912), (212, 29882), (213, 29876), (214, 29873), (272, 29720), (283, 29675), (311, 29492), (316, 29456), (329, 29390), (350, 29291), (356, 29252), (357, 29246), (363, 29204), (365, 29195), (376, 29114), (392, 29048), (399, 29015), (411, 28970), (421, 28937), (428, 28910), (432, 28889), (436, 28871), (482, 28700),

Gene: SaltySpitoon\_45 Start: 19533, Stop: 21473, Start Num: 64

Candidate Starts for SaltySpitoon\_45:

(Start: 64 @19533 has 64 MA's), (90, 19665), (96, 19701), (102, 19737), (111, 19764), (114, 19776), (133, 19881), (148, 19938), (185, 20163), (206, 20217), (217, 20301), (228, 20352), (235, 20391), (248, 20403), (285, 20481), (297, 20580), (306, 20616), (333, 20763), (366, 20937), (369, 20973), (389, 21042), (390, 21045), (430, 21216), (468, 21354),

Gene: Salz\_50 Start: 34643, Stop: 32805, Start Num: 88

Candidate Starts for Salz\_50:

(28, 34877), (41, 34844), (Start: 50 @34826 has 19 MA's), (Start: 73 @34718 has 3 MA's), (Start: 88 @34643 has 3 MA's), (116, 34511), (118, 34502), (141, 34382), (169, 34226), (174, 34178), (178, 34151), (179, 34148), (182, 34136), (197, 34103), (203, 34082), (210, 34037), (212, 34019), (213, 34013), (214, 34010), (250, 33890), (283, 33815), (286, 33800), (311, 33635), (321, 33575), (329, 33533), (333, 33515), (347, 33443), (357, 33389), (360, 33374), (361, 33356), (377, 33257), (393, 33194), (402, 33155), (426, 33065), (432, 33035), (447, 32987),

Gene: Samisti12\_42 Start: 20108, Stop: 22060, Start Num: 64

Candidate Starts for Samisti12\_42:

(Start: 53 @20063 has 2 MA's), (56, 20072), (Start: 64 @20108 has 64 MA's), (Start: 67 @20114 has 1 MA's), (83, 20216), (86, 20237), (90, 20246), (106, 20336), (111, 20345), (112, 20354), (114, 20357), (133, 20462), (151, 20552), (198, 20771), (235, 20972), (248, 20984), (306, 21197), (307, 21206), (324, 21302), (333, 21344), (336, 21362), (366, 21518), (390, 21626), (430, 21797), (431, 21803), (438, 21836), (468, 21935),

Gene: SarahRose\_47 Start: 32000, Stop: 34090, Start Num: 45

Candidate Starts for SarahRose\_47:

(15, 31919), (Start: 45 @32000 has 304 MA's), (61, 32045), (79, 32156), (82, 32177), (Start: 88 @32210 has 3 MA's), (90, 32216), (Start: 97 @32261 has 1 MA's), (116, 32342), (118, 32351), (132, 32429), (141, 32471), (154, 32531), (156, 32564), (161, 32588), (169, 32630), (170, 32639), (179, 32708), (180, 32711), (203, 32798), (212, 32861), (214, 32870), (225, 32921), (242, 32990), (275, 33035), (279, 33047), (297, 33179), (307, 33236), (311, 33257), (313, 33272), (316, 33293), (326, 33344), (334, 33380), (335, 33386), (346, 33440), (357, 33503), (358, 33509), (365, 33554), (371, 33614), (378, 33641), (384, 33653), (392, 33707), (394, 33713), (404, 33758), (411, 33779), (421,

33812), (426, 33830), (432, 33860), (434, 33872), (443, 33899), (462, 33959), (479, 34031),

Gene: SaturnRing\_52 Start: 35769, Stop: 33748, Start Num: 49

Candidate Starts for SaturnRing\_52:

(Start: 49 @35769 has 219 MA's), (74, 35655), (92, 35568), (Start: 97 @35532 has 1 MA's), (116, 35451), (118, 35442), (126, 35385), (141, 35322), (169, 35166), (179, 35088), (185, 35067), (187, 35064), (203, 35022), (208, 34992), (210, 34977), (212, 34959), (213, 34953), (214, 34950), (221, 34917), (279, 34785), (311, 34581), (316, 34545), (321, 34521), (329, 34479), (333, 34461), (356, 34341), (357, 34335), (360, 34320), (363, 34293), (389, 34155), (403, 34092), (428, 33999), (432, 33978), (460, 33897), (465, 33864),

Gene: Scamp\_50 Start: 35450, Stop: 33417, Start Num: 49

Candidate Starts for Scamp\_50:

(Start: 49 @35450 has 219 MA's), (68, 35387), (Start: 73 @35339 has 3 MA's), (78, 35315), (92, 35249), (Start: 97 @35213 has 1 MA's), (102, 35180), (116, 35132), (118, 35123), (127, 35066), (134, 35039), (141, 35006), (169, 34850), (170, 34841), (179, 34772), (203, 34700), (208, 34670), (209, 34667), (212, 34637), (213, 34631), (214, 34628), (232, 34541), (244, 34511), (255, 34499), (261, 34490), (279, 34442), (311, 34238), (329, 34136), (333, 34118), (360, 33977), (363, 33950), (392, 33806), (393, 33803), (399, 33773), (417, 33710), (426, 33677), (428, 33668), (432, 33647), (447, 33599), (465, 33533),

Gene: Scheme\_43 Start: 19482, Stop: 21479, Start Num: 53

Candidate Starts for Scheme\_43:

(Start: 53 @19482 has 2 MA's), (56, 19491), (Start: 64 @19527 has 64 MA's), (Start: 67 @19533 has 1 MA's), (83, 19635), (86, 19656), (90, 19665), (106, 19755), (111, 19764), (112, 19773), (114, 19776), (133, 19881), (198, 20190), (235, 20391), (248, 20403), (306, 20616), (307, 20625), (324, 20721), (333, 20763), (336, 20781), (366, 20937), (390, 21045), (430, 21216), (438, 21255), (468, 21354),

Gene: Scherzo\_51 Start: 35956, Stop: 33917, Start Num: 45

Candidate Starts for Scherzo\_51:

(Start: 45 @35956 has 304 MA's), (Start: 73 @35842 has 3 MA's), (75, 35827), (78, 35818), (Start: 97 @35716 has 1 MA's), (118, 35626), (127, 35566), (128, 35563), (141, 35506), (168, 35359), (169, 35350), (179, 35272), (182, 35260), (203, 35206), (208, 35176), (210, 35161), (212, 35143), (213, 35137), (214, 35134), (272, 34969), (283, 34924), (311, 34744), (331, 34630), (344, 34570), (361, 34465), (363, 34456), (393, 34303), (399, 34273), (417, 34210), (432, 34147),

Gene: Scorpia\_47 Start: 34445, Stop: 32355, Start Num: 49

Candidate Starts for Scorpia\_47:

(Start: 49 @34445 has 219 MA's), (Start: 88 @34259 has 3 MA's), (102, 34175), (116, 34127), (118, 34118), (123, 34076), (147, 33980), (153, 33941), (158, 33896), (168, 33851), (169, 33842), (175, 33779), (176, 33773), (179, 33764), (199, 33710), (203, 33692), (208, 33662), (209, 33659), (210, 33647), (212, 33629), (213, 33623), (214, 33620), (239, 33509), (283, 33368), (290, 33326), (308, 33206), (310, 33191), (313, 33173), (322, 33125), (329, 33086), (343, 33017), (354, 32960), (356, 32948), (357, 32942), (363, 32900), (365, 32891), (377, 32810), (392, 32744), (399, 32711), (410, 32669), (421, 32633), (426, 32615), (428, 32606), (482, 32396),

Gene: Scout\_51 Start: 34893, Stop: 32869, Start Num: 49

Candidate Starts for Scout\_51:

(Start: 49 @34893 has 219 MA's), (74, 34779), (92, 34692), (Start: 97 @34656 has 1 MA's), (102, 34623), (116, 34575), (118, 34566), (141, 34446), (165, 34317), (169, 34290), (170, 34281), (179, 34212), (185, 34191), (187, 34188), (203, 34146), (208, 34116), (210, 34101), (212, 34083), (213, 34077), (214, 34074), (235, 33969), (239, 33963), (279, 33906), (286, 33867), (311, 33702), (316, 33666), (321, 33642), (329, 33600), (333, 33582), (356, 33462), (357, 33456), (360, 33441), (363,

33414), (365, 33405), (389, 33276), (403, 33213), (428, 33120), (432, 33099), (460, 33018), (465, 32985),

Gene: SemperFi\_52 Start: 35947, Stop: 33911, Start Num: 45

Candidate Starts for SemperFi\_52:

(Start: 45 @35947 has 304 MA's), (Start: 73 @35836 has 3 MA's), (74, 35833), (Start: 88 @35761 has 3 MA's), (Start: 97 @35710 has 1 MA's), (100, 35692), (110, 35656), (118, 35620), (141, 35500), (168, 35353), (169, 35344), (179, 35266), (203, 35194), (208, 35164), (209, 35161), (210, 35149), (212, 35131), (213, 35125), (214, 35122), (272, 34963), (283, 34918), (290, 34876), (311, 34738), (316, 34702), (329, 34636), (331, 34624), (344, 34564), (354, 34510), (357, 34492), (393, 34297), (402, 34258), (403, 34255), (417, 34204), (432, 34141), (447, 34093), (451, 34084), (484, 33943),

Gene: SenorClean\_48 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for SenorClean\_48:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Serenity\_51 Start: 34902, Stop: 32854, Start Num: 45

Candidate Starts for Serenity\_51:

(Start: 45 @34902 has 304 MA's), (Start: 71 @34800 has 1 MA's), (Start: 73 @34791 has 3 MA's), (Start: 88 @34716 has 3 MA's), (116, 34584), (118, 34575), (128, 34512), (141, 34455), (168, 34308), (169, 34299), (174, 34251), (175, 34236), (179, 34221), (203, 34155), (208, 34125), (209, 34122), (210, 34110), (212, 34092), (213, 34086), (214, 34083), (263, 33930), (270, 33903), (283, 33855), (290, 33813), (301, 33729), (307, 33696), (311, 33675), (316, 33639), (321, 33615), (322, 33612), (326, 33588), (331, 33561), (344, 33501), (346, 33492), (357, 33429), (361, 33396), (363, 33387), (373, 33306), (393, 33234), (394, 33231), (398, 33207), (417, 33147), (432, 33084),

Gene: SeresaTree\_20 Start: 7427, Stop: 9370, Start Num: 65

Candidate Starts for SeresaTree\_20:

(62, 7418), (Start: 65 @7427 has 26 MA's), (Start: 73 @7484 has 3 MA's), (111, 7664), (114, 7676), (133, 7781), (206, 8114), (208, 8135), (231, 8267), (314, 8561), (327, 8633), (332, 8657), (370, 8876), (371, 8882), (381, 8906), (383, 8909), (389, 8939), (390, 8942), (393, 8963), (400, 8999), (412, 9044), (423, 9083), (433, 9131), (468, 9251), (473, 9275),

Gene: Severus\_47 Start: 34406, Stop: 32367, Start Num: 34

Candidate Starts for Severus\_47:

(Start: 34 @34406 has 17 MA's), (78, 34271), (Start: 97 @34169 has 1 MA's), (102, 34136), (116, 34088), (118, 34079), (127, 34022), (141, 33962), (146, 33947), (169, 33806), (179, 33728), (182, 33716), (203, 33656), (208, 33626), (212, 33593), (213, 33587), (214, 33584), (221, 33551), (270, 33416), (279, 33392), (311, 33188), (329, 33086), (333, 33068), (343, 33017), (356, 32948), (357, 32942), (363, 32900), (365, 32891), (371, 32831), (392, 32756), (393, 32753), (394, 32750), (403, 32711), (417, 32660), (419, 32654), (432, 32597), (465, 32483), (479, 32426),

Gene: Shaka\_50 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for Shaka\_50:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209,

34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: Sham\_18 Start: 7229, Stop: 9172, Start Num: 65

Candidate Starts for Sham\_18:

(62, 7220), (Start: 65 @7229 has 26 MA's), (111, 7466), (114, 7478), (133, 7583), (206, 7916), (314, 8363), (326, 8429), (327, 8435), (370, 8678), (371, 8684), (381, 8708), (383, 8711), (390, 8744), (400, 8801), (412, 8846), (468, 9053), (473, 9077),

Gene: Sham4\_51 Start: 34854, Stop: 32833, Start Num: 50

Candidate Starts for Sham4\_51:

(28, 34905), (41, 34872), (Start: 50 @34854 has 19 MA's), (Start: 73 @34746 has 3 MA's), (Start: 88 @34671 has 3 MA's), (116, 34539), (118, 34530), (141, 34410), (169, 34254), (174, 34206), (178, 34179), (179, 34176), (182, 34164), (197, 34131), (203, 34110), (210, 34065), (212, 34047), (213, 34041), (214, 34038), (250, 33918), (283, 33843), (286, 33828), (311, 33663), (321, 33603), (329, 33561), (333, 33543), (347, 33471), (357, 33417), (360, 33402), (361, 33384), (377, 33285), (393, 33222), (402, 33183), (414, 33135), (426, 33093), (432, 33063), (447, 33015),

Gene: Shapes\_53 Start: 35260, Stop: 33179, Start Num: 34

Candidate Starts for Shapes\_53:

(Start: 34 @35260 has 17 MA's), (44, 35239), (Start: 73 @35119 has 3 MA's), (74, 35116), (78, 35095), (Start: 97 @34993 has 1 MA's), (102, 34960), (116, 34912), (118, 34903), (127, 34846), (141, 34786), (146, 34771), (157, 34690), (169, 34630), (179, 34552), (182, 34540), (202, 34489), (203, 34480), (208, 34450), (212, 34417), (213, 34411), (214, 34408), (266, 34243), (272, 34225), (283, 34180), (290, 34138), (311, 34000), (329, 33898), (333, 33880), (343, 33829), (356, 33760), (357, 33754), (360, 33739), (363, 33712), (365, 33703), (371, 33643), (392, 33568), (393, 33565), (394, 33562), (403, 33523), (417, 33472), (419, 33466), (432, 33409), (465, 33295), (479, 33238),

Gene: ShayRa\_57 Start: 34944, Stop: 32881, Start Num: 40

Candidate Starts for ShayRa\_57:

(Start: 40 @34944 has 21 MA's), (87, 34749), (Start: 88 @34746 has 3 MA's), (116, 34614), (118, 34605), (141, 34485), (170, 34320), (174, 34281), (179, 34251), (194, 34209), (203, 34185), (208, 34155), (212, 34122), (213, 34116), (214, 34113), (270, 33939), (275, 33927), (283, 33891), (310, 33714), (311, 33711), (316, 33675), (329, 33609), (337, 33570), (339, 33558), (356, 33471), (357, 33465), (363, 33423), (411, 33192), (432, 33111), (452, 33051), (459, 33033), (479, 32940), (482, 32922),

Gene: SheaKeira\_50 Start: 35356, Stop: 33317, Start Num: 45

Candidate Starts for SheaKeira\_50:

(25, 35413), (Start: 45 @35356 has 304 MA's), (Start: 71 @35251 has 1 MA's), (Start: 73 @35242 has 3 MA's), (118, 35026), (127, 34966), (141, 34906), (169, 34750), (179, 34672), (182, 34660), (203, 34606), (208, 34576), (209, 34573), (212, 34543), (213, 34537), (214, 34534), (264, 34396), (270, 34372), (272, 34369), (283, 34324), (290, 34282), (293, 34249), (301, 34198), (311, 34144), (329, 34042), (344, 33970), (346, 33961), (354, 33916), (357, 33898), (363, 33856), (393, 33703), (411, 33628), (421, 33595), (432, 33547), (447, 33499),

Gene: Sheen\_51 Start: 37720, Stop: 35663, Start Num: 51

Candidate Starts for Sheen\_51:

(Start: 51 @37720 has 3 MA's), (75, 37597), (Start: 88 @37537 has 3 MA's), (Start: 97 @37486 has 1 MA's), (102, 37453), (116, 37405), (118, 37396), (127, 37336), (141, 37276), (150, 37231), (168, 37129), (176, 37051), (179, 37042), (203, 36961), (208, 36931), (209, 36928), (212, 36898), (213,



36892), (214, 36889), (254, 36763), (279, 36697), (311, 36493), (316, 36457), (322, 36430), (329, 36391), (333, 36373), (356, 36253), (357, 36247), (360, 36232), (365, 36196), (372, 36133), (393, 36046), (399, 36016), (403, 36004), (417, 35953), (428, 35911), (455, 35827),

Gene: SheldonCooper\_52 Start: 35885, Stop: 33834, Start Num: 49

Candidate Starts for SheldonCooper\_52:

(Start: 49 @35885 has 219 MA's), (68, 35822), (Start: 73 @35774 has 3 MA's), (74, 35771), (78, 35750), (92, 35684), (Start: 97 @35648 has 1 MA's), (102, 35615), (116, 35567), (118, 35558), (127, 35501), (141, 35441), (146, 35426), (169, 35285), (170, 35276), (179, 35207), (203, 35135), (208, 35105), (209, 35102), (212, 35072), (213, 35066), (214, 35063), (260, 34910), (279, 34859), (311, 34655), (329, 34553), (333, 34535), (360, 34394), (363, 34367), (392, 34223), (393, 34220), (399, 34190), (417, 34127), (426, 34094), (428, 34085), (432, 34064), (447, 34016), (465, 33950),

Gene: Shuckle\_41 Start: 19787, Stop: 21775, Start Num: 53

Candidate Starts for Shuckle\_41:

(Start: 53 @19787 has 2 MA's), (56, 19796), (Start: 64 @19832 has 64 MA's), (Start: 67 @19838 has 1 MA's), (83, 19940), (86, 19961), (90, 19970), (106, 20060), (111, 20069), (112, 20078), (114, 20081), (133, 20186), (198, 20495), (235, 20696), (248, 20708), (306, 20921), (307, 20930), (324, 21026), (333, 21068), (336, 21086), (366, 21242), (390, 21350), (430, 21521), (438, 21560), (468, 21659), (486, 21758),

Gene: Shuman\_41 Start: 32019, Stop: 29974, Start Num: 45

Candidate Starts for Shuman\_41:

(Start: 45 @32019 has 304 MA's), (74, 31899), (87, 31830), (Start: 97 @31776 has 1 MA's), (116, 31695), (118, 31686), (127, 31626), (132, 31608), (154, 31506), (156, 31473), (157, 31470), (159, 31461), (164, 31440), (168, 31419), (169, 31410), (175, 31347), (179, 31332), (181, 31326), (203, 31266), (209, 31233), (212, 31203), (213, 31197), (214, 31194), (252, 31059), (301, 30864), (304, 30846), (310, 30813), (326, 30723), (328, 30714), (354, 30582), (363, 30522), (372, 30450), (385, 30411), (387, 30408), (388, 30396), (393, 30363), (402, 30324), (421, 30252), (428, 30225), (465, 30090),

Gene: Shygu2\_49 Start: 35421, Stop: 33391, Start Num: 49

Candidate Starts for Shygu2\_49:

(Start: 49 @35421 has 219 MA's), (Start: 73 @35310 has 3 MA's), (92, 35220), (Start: 97 @35184 has 1 MA's), (102, 35151), (116, 35103), (118, 35094), (127, 35037), (134, 35010), (141, 34977), (169, 34821), (170, 34812), (179, 34743), (182, 34731), (202, 34680), (203, 34671), (208, 34641), (209, 34638), (212, 34608), (213, 34602), (214, 34599), (221, 34566), (279, 34416), (301, 34266), (311, 34212), (329, 34110), (333, 34092), (356, 33972), (360, 33951), (363, 33924), (392, 33780), (393, 33777), (399, 33747), (411, 33702), (426, 33651), (428, 33642), (432, 33621), (465, 33507), (479, 33450),

Gene: Skipitt\_49 Start: 35442, Stop: 33409, Start Num: 49

Candidate Starts for Skipitt\_49:

(Start: 49 @35442 has 219 MA's), (68, 35379), (Start: 73 @35331 has 3 MA's), (78, 35307), (92, 35241), (Start: 97 @35205 has 1 MA's), (102, 35172), (116, 35124), (118, 35115), (127, 35058), (134, 35031), (141, 34998), (169, 34842), (170, 34833), (179, 34764), (203, 34692), (208, 34662), (209, 34659), (212, 34629), (213, 34623), (214, 34620), (232, 34533), (244, 34503), (255, 34491), (261, 34482), (279, 34434), (311, 34230), (329, 34128), (333, 34110), (360, 33969), (363, 33942), (392, 33798), (393, 33795), (399, 33765), (417, 33702), (426, 33669), (428, 33660), (432, 33639), (447, 33591), (465, 33525),

Gene: Sknot\_53 Start: 35712, Stop: 33715, Start Num: 61

Candidate Starts for Sknot\_53:

(Start: 45 @35751 has 304 MA's), (61, 35712), (Start: 73 @35640 has 3 MA's), (87, 35568), (Start: 88 @35565 has 3 MA's), (Start: 97 @35514 has 1 MA's), (102, 35481), (118, 35424), (127, 35364), (134, 35337), (141, 35304), (169, 35148), (179, 35070), (182, 35058), (198, 35016), (203, 34998), (208, 34968), (209, 34965), (210, 34953), (212, 34935), (213, 34929), (214, 34926), (230, 34845), (272, 34767), (283, 34722), (290, 34680), (311, 34542), (316, 34506), (329, 34440), (331, 34428), (344, 34368), (354, 34314), (357, 34296), (365, 34245), (377, 34164), (380, 34155), (393, 34101), (399, 34071), (402, 34062), (417, 34008), (432, 33945), (447, 33897), (451, 33888),

Gene: Smeadley\_48 Start: 34148, Stop: 32103, Start Num: 49

Candidate Starts for Smeadley\_48:

(Start: 49 @34148 has 219 MA's), (75, 34022), (87, 33965), (Start: 88 @33962 has 3 MA's), (Start: 97 @33911 has 1 MA's), (102, 33878), (116, 33830), (118, 33821), (123, 33779), (147, 33683), (153, 33644), (158, 33599), (168, 33554), (169, 33545), (175, 33482), (176, 33476), (179, 33467), (180, 33464), (203, 33395), (208, 33365), (209, 33362), (212, 33332), (213, 33326), (214, 33323), (283, 33125), (311, 32942), (316, 32906), (329, 32840), (350, 32741), (363, 32654), (365, 32645), (377, 32561), (399, 32459), (411, 32414), (428, 32354), (432, 32333), (436, 32315), (482, 32144),

Gene: Smeagan\_54 Start: 36405, Stop: 34366, Start Num: 45

Candidate Starts for Smeagan\_54:

(Start: 45 @36405 has 304 MA's), (74, 36288), (Start: 88 @36216 has 3 MA's), (Start: 97 @36165 has 1 MA's), (118, 36075), (141, 35955), (169, 35799), (179, 35721), (203, 35649), (208, 35619), (209, 35616), (210, 35604), (212, 35586), (213, 35580), (214, 35577), (272, 35418), (283, 35373), (290, 35331), (311, 35193), (316, 35157), (329, 35091), (331, 35079), (344, 35019), (354, 34965), (357, 34947), (393, 34752), (402, 34713), (417, 34659), (432, 34596), (447, 34548), (451, 34539), (484, 34398),

Gene: SmellyB\_53 Start: 34814, Stop: 32790, Start Num: 45

Candidate Starts for SmellyB\_53:

(32, 34847), (Start: 45 @34814 has 304 MA's), (Start: 88 @34628 has 3 MA's), (102, 34544), (116, 34496), (118, 34487), (127, 34427), (141, 34367), (153, 34310), (157, 34271), (165, 34238), (169, 34211), (170, 34202), (175, 34148), (179, 34133), (203, 34061), (208, 34031), (212, 33998), (213, 33992), (214, 33989), (283, 33797), (307, 33638), (311, 33617), (331, 33503), (344, 33443), (346, 33434), (354, 33389), (357, 33371), (361, 33338), (378, 33236), (380, 33230), (393, 33176), (398, 33149), (399, 33146), (402, 33137), (417, 33083), (432, 33020), (440, 32990), (451, 32963),

Gene: SnapTap\_51 Start: 35758, Stop: 33722, Start Num: 45

Candidate Starts for SnapTap\_51:

(Start: 45 @35758 has 304 MA's), (Start: 73 @35647 has 3 MA's), (74, 35644), (Start: 88 @35572 has 3 MA's), (Start: 97 @35521 has 1 MA's), (100, 35503), (110, 35467), (118, 35431), (141, 35311), (168, 35164), (169, 35155), (179, 35077), (203, 35005), (208, 34975), (209, 34972), (210, 34960), (212, 34942), (213, 34936), (214, 34933), (272, 34774), (283, 34729), (290, 34687), (311, 34549), (316, 34513), (329, 34447), (331, 34435), (344, 34375), (354, 34321), (357, 34303), (393, 34108), (402, 34069), (403, 34066), (417, 34015), (432, 33952), (447, 33904), (451, 33895), (484, 33754),

Gene: Snape\_51 Start: 34846, Stop: 32825, Start Num: 50

Candidate Starts for Snape\_51:

(28, 34897), (41, 34864), (Start: 50 @34846 has 19 MA's), (Start: 73 @34738 has 3 MA's), (Start: 88 @34663 has 3 MA's), (116, 34531), (118, 34522), (141, 34402), (169, 34246), (174, 34198), (178, 34171), (179, 34168), (182, 34156), (197, 34123), (203, 34102), (210, 34057), (212, 34039), (213, 34033), (214, 34030), (250, 33910), (283, 33835), (286, 33820), (290, 33793), (311, 33655), (321, 33595), (329, 33553), (333, 33535), (347, 33463), (357, 33409), (360, 33394), (361, 33376), (377, 33277), (393, 33214), (402, 33175), (426, 33085), (432, 33055), (447, 33007),

Gene: Snickers\_54 Start: 35880, Stop: 33862, Start Num: 55

Candidate Starts for Snickers\_54:

(Start: 55 @35880 has 95 MA's), (Start: 71 @35787 has 1 MA's), (Start: 73 @35778 has 3 MA's), (78, 35754), (Start: 88 @35703 has 3 MA's), (Start: 97 @35652 has 1 MA's), (116, 35571), (118, 35562), (141, 35442), (154, 35382), (157, 35346), (169, 35286), (179, 35208), (203, 35136), (208, 35106), (212, 35073), (213, 35067), (214, 35064), (230, 34983), (239, 34953), (279, 34899), (304, 34728), (321, 34632), (329, 34590), (333, 34572), (343, 34524), (346, 34512), (356, 34455), (357, 34449), (360, 34434), (363, 34407), (370, 34344), (371, 34338), (377, 34314), (402, 34209), (421, 34140), (426, 34122), (428, 34113), (432, 34092), (459, 34014), (465, 33978), (481, 33915),

Gene: Snorlax\_47 Start: 32004, Stop: 34094, Start Num: 45

Candidate Starts for Snorlax\_47:

(15, 31923), (Start: 45 @32004 has 304 MA's), (61, 32049), (79, 32160), (82, 32181), (Start: 88 @32214 has 3 MA's), (90, 32220), (Start: 97 @32265 has 1 MA's), (116, 32346), (118, 32355), (132, 32433), (141, 32475), (154, 32535), (156, 32568), (161, 32592), (169, 32634), (170, 32643), (179, 32712), (180, 32715), (203, 32802), (212, 32865), (214, 32874), (225, 32925), (242, 32994), (275, 33039), (279, 33051), (297, 33183), (307, 33240), (311, 33261), (313, 33276), (316, 33297), (326, 33348), (334, 33384), (335, 33390), (346, 33444), (357, 33507), (358, 33513), (365, 33558), (371, 33618), (378, 33645), (384, 33657), (392, 33711), (394, 33717), (404, 33762), (411, 33783), (421, 33816), (426, 33834), (432, 33864), (434, 33876), (443, 33903), (462, 33963), (479, 34035),

Gene: SoYo\_54 Start: 35818, Stop: 33800, Start Num: 55

Candidate Starts for SoYo\_54:

(Start: 55 @35818 has 95 MA's), (Start: 71 @35725 has 1 MA's), (Start: 73 @35716 has 3 MA's), (78, 35692), (Start: 88 @35641 has 3 MA's), (Start: 97 @35590 has 1 MA's), (116, 35509), (118, 35500), (141, 35380), (154, 35320), (157, 35284), (169, 35224), (179, 35146), (203, 35074), (208, 35044), (212, 35011), (213, 35005), (214, 35002), (230, 34921), (239, 34891), (279, 34837), (304, 34666), (321, 34570), (329, 34528), (333, 34510), (343, 34462), (346, 34450), (356, 34393), (357, 34387), (360, 34372), (363, 34345), (370, 34282), (371, 34276), (377, 34252), (402, 34147), (421, 34078), (426, 34060), (428, 34051), (432, 34030), (459, 33952), (465, 33916), (481, 33853),

Gene: SoilDragon\_54 Start: 35354, Stop: 33336, Start Num: 55

Candidate Starts for SoilDragon\_54:

(Start: 55 @35354 has 95 MA's), (Start: 71 @35261 has 1 MA's), (Start: 73 @35252 has 3 MA's), (78, 35228), (Start: 88 @35177 has 3 MA's), (Start: 97 @35126 has 1 MA's), (107, 35078), (116, 35045), (118, 35036), (141, 34916), (154, 34856), (157, 34820), (169, 34760), (179, 34682), (182, 34670), (203, 34610), (208, 34580), (212, 34547), (213, 34541), (214, 34538), (230, 34457), (239, 34427), (279, 34373), (304, 34202), (321, 34106), (329, 34064), (333, 34046), (343, 33998), (346, 33986), (356, 33929), (357, 33923), (360, 33908), (363, 33881), (370, 33818), (371, 33812), (377, 33788), (402, 33683), (421, 33614), (426, 33596), (428, 33587), (432, 33566), (459, 33488), (465, 33452), (481, 33389),

Gene: Sollertia\_45 Start: 19480, Stop: 21420, Start Num: 64

Candidate Starts for Sollertia\_45:

(Start: 64 @19480 has 64 MA's), (90, 19612), (96, 19648), (101, 19672), (102, 19684), (111, 19711), (114, 19723), (133, 19828), (137, 19843), (144, 19870), (207, 20182), (211, 20215), (217, 20248), (228, 20299), (230, 20314), (235, 20338), (248, 20350), (285, 20428), (297, 20527), (305, 20560), (306, 20563), (327, 20683), (333, 20710), (336, 20728), (366, 20884), (389, 20989), (390, 20992), (430, 21163), (438, 21202), (468, 21301),

Gene: SororFago\_53 Start: 36658, Stop: 34622, Start Num: 45

Candidate Starts for SororFago\_53:

(Start: 45 @36658 has 304 MA's), (Start: 73 @36547 has 3 MA's), (102, 36388), (116, 36340), (118, 36331), (128, 36268), (141, 36211), (169, 36055), (178, 35980), (179, 35977), (203, 35911), (208, 35881), (209, 35878), (212, 35848), (213, 35842), (214, 35839), (217, 35818), (263, 35704), (272, 35674), (283, 35629), (287, 35605), (290, 35587), (311, 35449), (321, 35389), (331, 35335), (344, 35275), (346, 35266), (357, 35203), (361, 35170), (393, 35008), (398, 34981), (402, 34969), (410, 34936), (417, 34915), (432, 34852), (447, 34804), (484, 34654),

Gene: Soshari\_56 Start: 35930, Stop: 33912, Start Num: 55

Candidate Starts for Soshari\_56:

(Start: 55 @35930 has 95 MA's), (Start: 71 @35837 has 1 MA's), (Start: 73 @35828 has 3 MA's), (78, 35804), (Start: 88 @35753 has 3 MA's), (Start: 97 @35702 has 1 MA's), (116, 35621), (118, 35612), (141, 35495), (157, 35399), (169, 35339), (176, 35270), (179, 35261), (180, 35258), (182, 35249), (203, 35189), (208, 35159), (209, 35156), (210, 35144), (212, 35126), (213, 35120), (214, 35117), (235, 35012), (239, 35006), (279, 34949), (311, 34745), (313, 34730), (316, 34709), (321, 34685), (326, 34658), (329, 34643), (356, 34505), (357, 34499), (360, 34484), (363, 34457), (370, 34394), (371, 34388), (377, 34364), (402, 34259), (411, 34223), (432, 34142), (459, 34064), (465, 34028), (481, 33965),

Gene: Soups\_57 Start: 35183, Stop: 33120, Start Num: 40

Candidate Starts for Soups\_57:

(Start: 40 @35183 has 21 MA's), (77, 35039), (87, 34988), (Start: 88 @34985 has 3 MA's), (116, 34853), (118, 34844), (141, 34724), (170, 34559), (174, 34520), (179, 34490), (194, 34448), (203, 34424), (208, 34394), (212, 34361), (213, 34355), (214, 34352), (270, 34178), (275, 34166), (283, 34130), (311, 33950), (316, 33914), (329, 33848), (337, 33809), (339, 33797), (356, 33710), (357, 33704), (363, 33662), (411, 33431), (432, 33350), (452, 33290), (459, 33272), (479, 33179), (482, 33161),

Gene: South40\_47 Start: 32197, Stop: 34287, Start Num: 45

Candidate Starts for South40\_47:

(30, 32158), (Start: 45 @32197 has 304 MA's), (79, 32353), (Start: 88 @32407 has 3 MA's), (90, 32413), (Start: 97 @32458 has 1 MA's), (116, 32539), (118, 32548), (132, 32626), (141, 32668), (147, 32686), (161, 32785), (169, 32827), (179, 32905), (180, 32908), (203, 32995), (212, 33058), (214, 33067), (275, 33232), (279, 33244), (297, 33376), (311, 33454), (313, 33469), (316, 33490), (326, 33541), (357, 33700), (358, 33706), (365, 33751), (371, 33811), (378, 33838), (392, 33904), (394, 33910), (404, 33955), (410, 33973), (421, 34009), (426, 34027), (432, 34057), (443, 34096), (462, 34156), (479, 34228),

Gene: SparkleGoddess\_21 Start: 8140, Stop: 10083, Start Num: 65

Candidate Starts for SparkleGoddess\_21:

(62, 8131), (Start: 65 @8140 has 26 MA's), (90, 8278), (111, 8377), (114, 8389), (133, 8494), (244, 9007), (289, 9121), (305, 9223), (327, 9346), (332, 9370), (351, 9442), (370, 9589), (381, 9619), (390, 9655), (393, 9676), (405, 9727), (412, 9757), (427, 9808), (468, 9964), (476, 10006), (486, 10063),

Gene: Sparxx\_51 Start: 35443, Stop: 33410, Start Num: 49

Candidate Starts for Sparxx\_51:

(Start: 49 @35443 has 219 MA's), (68, 35380), (Start: 73 @35332 has 3 MA's), (78, 35308), (92, 35242), (Start: 97 @35206 has 1 MA's), (102, 35173), (116, 35125), (118, 35116), (127, 35059), (134, 35032), (141, 34999), (169, 34843), (170, 34834), (179, 34765), (203, 34693), (208, 34663), (209, 34660), (212, 34630), (213, 34624), (214, 34621), (232, 34534), (241, 34510), (244, 34504), (255, 34492), (261, 34483), (279, 34435), (311, 34231), (329, 34129), (333, 34111), (360, 33970), (363, 33943), (392, 33799), (393, 33796), (399, 33766), (417, 33703), (426, 33670), (428, 33661), (432, 33640), (447, 33592), (465, 33526),

Gene: Speedwell\_52 Start: 34740, Stop: 36803, Start Num: 45

Candidate Starts for Speedwell\_52:

(Start: 45 @34740 has 304 MA's), (61, 34779), (Start: 71 @34842 has 1 MA's), (Start: 73 @34851 has 3 MA's), (81, 34902), (82, 34908), (Start: 88 @34941 has 3 MA's), (Start: 97 @34992 has 1 MA's), (118, 35082), (119, 35097), (134, 35169), (141, 35202), (161, 35319), (169, 35361), (170, 35370), (179, 35439), (180, 35442), (184, 35463), (196, 35499), (203, 35529), (212, 35592), (279, 35766), (307, 35955), (316, 36012), (337, 36117), (340, 36135), (363, 36261), (365, 36270), (378, 36357), (388, 36387), (389, 36399), (392, 36423), (393, 36426), (404, 36474), (421, 36528), (426, 36546), (432, 36576), (436, 36594), (443, 36612), (451, 36630), (462, 36672), (485, 36795),

Gene: Spelly\_45 Start: 19488, Stop: 21428, Start Num: 64

Candidate Starts for Spelly\_45:

(Start: 64 @19488 has 64 MA's), (90, 19620), (96, 19656), (102, 19692), (111, 19719), (114, 19731), (133, 19836), (148, 19893), (185, 20118), (206, 20172), (217, 20256), (228, 20307), (235, 20346), (248, 20358), (285, 20436), (297, 20535), (306, 20571), (333, 20718), (366, 20892), (369, 20928), (389, 20997), (390, 21000), (430, 21171), (468, 21309),

Gene: Spike509\_54 Start: 35931, Stop: 33913, Start Num: 55

Candidate Starts for Spike509\_54:

(Start: 55 @35931 has 95 MA's), (Start: 71 @35838 has 1 MA's), (Start: 73 @35829 has 3 MA's), (78, 35805), (Start: 88 @35754 has 3 MA's), (Start: 97 @35703 has 1 MA's), (116, 35622), (118, 35613), (141, 35496), (157, 35400), (169, 35340), (176, 35271), (179, 35262), (180, 35259), (182, 35250), (203, 35190), (208, 35160), (209, 35157), (210, 35145), (212, 35127), (213, 35121), (214, 35118), (235, 35013), (239, 35007), (279, 34950), (311, 34746), (313, 34731), (316, 34710), (321, 34686), (326, 34659), (329, 34644), (356, 34506), (357, 34500), (360, 34485), (363, 34458), (370, 34395), (371, 34389), (377, 34365), (402, 34260), (411, 34224), (432, 34143), (459, 34065), (465, 34029), (481, 33966),

Gene: Spilled\_45 Start: 19242, Stop: 21182, Start Num: 64

Candidate Starts for Spilled\_45:

(Start: 64 @19242 has 64 MA's), (90, 19374), (96, 19410), (102, 19446), (111, 19473), (114, 19485), (133, 19590), (148, 19647), (185, 19872), (217, 20010), (228, 20061), (235, 20100), (248, 20112), (285, 20190), (297, 20289), (306, 20325), (333, 20472), (366, 20646), (389, 20751), (390, 20754), (430, 20925), (468, 21063),

Gene: Spino\_49 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for Spino\_49:

(Start: 49 @35448 has 219 MA's), (68, 35385), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Spooks\_22 Start: 16642, Stop: 14645, Start Num: 54

Candidate Starts for Spooks\_22:

(Start: 54 @16642 has 3 MA's), (68, 16585), (92, 16447), (93, 16444), (117, 16324), (168, 16054), (169, 16045), (179, 15967), (182, 15955), (185, 15946), (203, 15901), (210, 15856), (212, 15838), (214, 15829), (251, 15712), (265, 15697), (279, 15667), (293, 15568), (301, 15517), (326, 15376), (332, 15346), (335, 15334), (342, 15304), (346, 15283), (354, 15238), (356, 15226), (359, 15208), (378, 15079), (388, 15049), (421, 14932), (434, 14872), (453, 14821),

Gene: Spouty\_51 Start: 35736, Stop: 33697, Start Num: 45

Candidate Starts for Spouty\_51:

(Start: 45 @35736 has 304 MA's), (Start: 73 @35622 has 3 MA's), (75, 35607), (78, 35598), (Start: 97 @35496 has 1 MA's), (118, 35406), (127, 35346), (141, 35286), (168, 35139), (169, 35130), (179, 35052), (182, 35040), (202, 34995), (203, 34986), (208, 34956), (210, 34941), (212, 34923), (213, 34917), (214, 34914), (272, 34749), (280, 34725), (283, 34704), (311, 34524), (331, 34410), (344, 34350), (361, 34245), (363, 34236), (393, 34083), (399, 34053), (417, 33990), (432, 33927),

Gene: SqueakyClean\_47 Start: 32968, Stop: 35091, Start Num: 45

Candidate Starts for SqueakyClean\_47:

(Start: 45 @32968 has 304 MA's), (79, 33124), (Start: 88 @33178 has 3 MA's), (90, 33184), (Start: 97 @33229 has 1 MA's), (116, 33310), (118, 33319), (134, 33406), (135, 33418), (141, 33439), (161, 33556), (169, 33598), (179, 33676), (190, 33733), (203, 33784), (212, 33847), (273, 34030), (279, 34048), (311, 34258), (316, 34294), (329, 34360), (357, 34504), (358, 34510), (360, 34519), (365, 34555), (369, 34603), (371, 34615), (378, 34642), (384, 34654), (389, 34684), (392, 34708), (421, 34813), (426, 34831), (462, 34960), (478, 35029), (485, 35083),

Gene: Squillum\_41 Start: 18298, Stop: 20250, Start Num: 64

Candidate Starts for Squillum\_41:

(Start: 64 @18298 has 64 MA's), (Start: 67 @18304 has 1 MA's), (83, 18406), (86, 18427), (90, 18436), (106, 18526), (111, 18535), (112, 18544), (114, 18547), (133, 18652), (198, 18961), (217, 19072), (235, 19162), (248, 19174), (306, 19387), (333, 19534), (366, 19708), (390, 19816), (430, 19987), (431, 19993), (438, 20026), (468, 20125),

Gene: StCroix\_40 Start: 32087, Stop: 30042, Start Num: 45

Candidate Starts for StCroix\_40:

(Start: 45 @32087 has 304 MA's), (74, 31967), (87, 31898), (Start: 97 @31844 has 1 MA's), (116, 31763), (118, 31754), (127, 31694), (132, 31676), (154, 31574), (156, 31541), (157, 31538), (159, 31529), (164, 31508), (168, 31487), (169, 31478), (175, 31415), (179, 31400), (181, 31394), (203, 31334), (209, 31301), (212, 31271), (213, 31265), (214, 31262), (252, 31127), (304, 30914), (310, 30881), (326, 30791), (328, 30782), (354, 30650), (363, 30590), (372, 30518), (385, 30479), (387, 30476), (388, 30464), (402, 30392), (421, 30320), (428, 30293), (465, 30158),

Gene: Stagni\_54 Start: 35909, Stop: 33891, Start Num: 55

Candidate Starts for Stagni\_54:

(Start: 55 @35909 has 95 MA's), (Start: 71 @35816 has 1 MA's), (Start: 73 @35807 has 3 MA's), (78, 35783), (Start: 88 @35732 has 3 MA's), (Start: 97 @35681 has 1 MA's), (116, 35600), (118, 35591), (141, 35471), (154, 35411), (157, 35375), (169, 35315), (179, 35237), (203, 35165), (208, 35135), (212, 35102), (213, 35096), (214, 35093), (230, 35012), (239, 34982), (279, 34928), (304, 34757), (321, 34661), (329, 34619), (333, 34601), (343, 34553), (346, 34541), (356, 34484), (357, 34478), (360, 34463), (363, 34436), (370, 34373), (371, 34367), (377, 34343), (402, 34238), (421, 34169), (426, 34151), (428, 34142), (432, 34121), (459, 34043), (465, 34007), (481, 33944),

Gene: Stanimal\_45 Start: 19369, Stop: 21309, Start Num: 64

Candidate Starts for Stanimal\_45:

(Start: 64 @19369 has 64 MA's), (90, 19501), (96, 19537), (101, 19561), (102, 19573), (111, 19600), (114, 19612), (133, 19717), (137, 19732), (144, 19759), (207, 20071), (211, 20104), (217, 20137), (228, 20188), (230, 20203), (235, 20227), (248, 20239), (285, 20317), (297, 20416), (305, 20449), (306, 20452), (327, 20572), (333, 20599), (336, 20617), (366, 20773), (389, 20878), (390, 20881), (430, 21052), (438, 21091), (468, 21190),

Gene: StarPlatinum\_44 Start: 19484, Stop: 21424, Start Num: 64

Candidate Starts for StarPlatinum\_44:

(Start: 64 @19484 has 64 MA's), (90, 19616), (91, 19619), (102, 19688), (111, 19715), (114, 19727), (119, 19760), (133, 19832), (148, 19889), (151, 19922), (185, 20114), (217, 20252), (228, 20303), (230, 20318), (235, 20342), (248, 20354), (297, 20531), (306, 20567), (333, 20714), (366, 20888), (369, 20924), (389, 20993), (390, 20996), (430, 21167), (468, 21305),

Gene: StarStuff\_53 Start: 35564, Stop: 33483, Start Num: 49

Candidate Starts for StarStuff\_53:

(Start: 49 @35564 has 219 MA's), (Start: 71 @35459 has 1 MA's), (Start: 73 @35450 has 3 MA's), (Start: 88 @35375 has 3 MA's), (102, 35291), (116, 35243), (118, 35234), (127, 35174), (147, 35096), (153, 35057), (156, 35021), (169, 34958), (175, 34895), (179, 34880), (203, 34784), (208, 34754), (209, 34751), (212, 34721), (213, 34715), (214, 34712), (232, 34625), (270, 34550), (283, 34502), (311, 34322), (329, 34220), (331, 34208), (344, 34148), (346, 34139), (354, 34094), (356, 34082), (360, 34061), (363, 34034), (371, 33965), (372, 33962), (393, 33869), (398, 33842), (402, 33830), (411, 33794), (432, 33713), (444, 33671),

Gene: Starbow\_43 Start: 19509, Stop: 21449, Start Num: 64

Candidate Starts for Starbow\_43:

(Start: 64 @19509 has 64 MA's), (90, 19641), (96, 19677), (102, 19713), (111, 19740), (114, 19752), (133, 19857), (148, 19914), (185, 20139), (206, 20193), (217, 20277), (228, 20328), (235, 20367), (248, 20379), (285, 20457), (297, 20556), (306, 20592), (333, 20739), (366, 20913), (369, 20949), (389, 21018), (390, 21021), (430, 21192), (468, 21330),

Gene: Stasia\_49 Start: 35324, Stop: 33291, Start Num: 49

Candidate Starts for Stasia\_49:

(Start: 49 @35324 has 219 MA's), (Start: 73 @35213 has 3 MA's), (78, 35189), (92, 35123), (Start: 97 @35087 has 1 MA's), (116, 35006), (118, 34997), (134, 34913), (141, 34880), (169, 34724), (170, 34715), (179, 34646), (203, 34574), (212, 34511), (213, 34505), (214, 34502), (232, 34415), (244, 34385), (255, 34373), (261, 34364), (279, 34316), (311, 34112), (329, 34010), (333, 33992), (356, 33872), (357, 33866), (360, 33851), (363, 33824), (392, 33680), (393, 33677), (399, 33647), (411, 33602), (426, 33551), (428, 33542), (432, 33521), (465, 33407),

Gene: Steamy\_47 Start: 35226, Stop: 33187, Start Num: 45

Candidate Starts for Steamy\_47:

(Start: 45 @35226 has 304 MA's), (74, 35109), (Start: 97 @34986 has 1 MA's), (102, 34953), (118, 34896), (127, 34836), (141, 34776), (146, 34761), (169, 34620), (179, 34542), (185, 34521), (203, 34476), (212, 34413), (213, 34407), (214, 34404), (272, 34239), (283, 34194), (311, 34014), (321, 33954), (329, 33912), (331, 33900), (333, 33894), (344, 33840), (346, 33831), (361, 33735), (393, 33573), (394, 33570), (397, 33555), (417, 33480), (421, 33465), (432, 33417),

Gene: StepMih\_54 Start: 35900, Stop: 33882, Start Num: 55

Candidate Starts for StepMih\_54:

(Start: 55 @35900 has 95 MA's), (Start: 71 @35807 has 1 MA's), (Start: 73 @35798 has 3 MA's), (78, 35774), (Start: 88 @35723 has 3 MA's), (Start: 97 @35672 has 1 MA's), (116, 35591), (118, 35582), (141, 35462), (154, 35402), (157, 35366), (169, 35306), (179, 35228), (203, 35156), (208, 35126), (212, 35093), (213, 35087), (214, 35084), (230, 35003), (239, 34973), (279, 34919), (304, 34748), (321, 34652), (329, 34610), (333, 34592), (343, 34544), (346, 34532), (356, 34475), (357, 34469), (360, 34454), (363, 34427), (370, 34364), (371, 34358), (377, 34334), (402, 34229), (421, 34160), (426, 34142), (428, 34133), (432, 34112), (459, 34034), (465, 33998), (481, 33935),

Gene: Stephig9\_48 Start: 33986, Stop: 31941, Start Num: 49

Candidate Starts for Stephig9\_48:

(25, 34028), (29, 34013), (Start: 49 @33986 has 219 MA's), (75, 33860), (87, 33803), (Start: 88 @33800 has 3 MA's), (Start: 97 @33749 has 1 MA's), (102, 33716), (116, 33668), (118, 33659), (123,

33617), (127, 33599), (147, 33521), (153, 33482), (158, 33437), (168, 33392), (169, 33383), (175, 33320), (176, 33314), (179, 33305), (180, 33302), (203, 33233), (208, 33203), (209, 33200), (212, 33170), (213, 33164), (214, 33161), (283, 32963), (287, 32939), (311, 32780), (322, 32717), (326, 32693), (333, 32660), (346, 32591), (356, 32534), (357, 32528), (363, 32486), (365, 32477), (371, 32417), (372, 32414), (375, 32399), (382, 32378), (399, 32297), (421, 32219), (426, 32201), (429, 32189), (432, 32171), (452, 32111), (482, 31982),

Gene: Stigma\_21 Start: 8144, Stop: 10087, Start Num: 65

Candidate Starts for Stigma\_21:

(62, 8135), (Start: 65 @8144 has 26 MA's), (90, 8282), (111, 8381), (114, 8393), (133, 8498), (244, 9011), (289, 9125), (305, 9227), (327, 9350), (332, 9374), (351, 9446), (370, 9593), (381, 9623), (390, 9659), (393, 9680), (405, 9731), (412, 9761), (427, 9812), (468, 9968), (476, 10010), (486, 10067),

Gene: Stink\_49 Start: 35175, Stop: 33139, Start Num: 49

Candidate Starts for Stink\_49:

(Start: 49 @35175 has 219 MA's), (92, 34974), (Start: 97 @34938 has 1 MA's), (102, 34905), (116, 34857), (118, 34848), (141, 34731), (169, 34575), (170, 34566), (179, 34497), (182, 34485), (202, 34434), (203, 34425), (208, 34395), (209, 34392), (212, 34362), (213, 34356), (214, 34353), (221, 34320), (239, 34242), (274, 34179), (279, 34164), (311, 33960), (333, 33840), (356, 33720), (360, 33699), (363, 33672), (392, 33528), (393, 33525), (399, 33495), (411, 33450), (426, 33399), (428, 33390), (432, 33369), (447, 33321), (465, 33255),

Gene: Strosahl\_56 Start: 34602, Stop: 32539, Start Num: 40

Candidate Starts for Strosahl\_56:

(Start: 40 @34602 has 21 MA's), (Start: 73 @34479 has 3 MA's), (87, 34407), (Start: 88 @34404 has 3 MA's), (116, 34272), (118, 34263), (141, 34143), (170, 33978), (174, 33939), (179, 33909), (194, 33867), (203, 33843), (208, 33813), (212, 33780), (213, 33774), (214, 33771), (270, 33597), (275, 33585), (283, 33549), (310, 33372), (311, 33369), (316, 33333), (329, 33267), (337, 33228), (339, 33216), (356, 33129), (357, 33123), (363, 33081), (411, 32850), (432, 32769), (452, 32709), (459, 32691), (479, 32598), (482, 32580),

Gene: Success\_23 Start: 15857, Stop: 13860, Start Num: 54

Candidate Starts for Success\_23:

(Start: 54 @15857 has 3 MA's), (92, 15662), (116, 15545), (117, 15539), (169, 15260), (179, 15182), (182, 15170), (185, 15161), (203, 15116), (212, 15053), (214, 15044), (251, 14927), (265, 14912), (279, 14882), (301, 14732), (326, 14591), (332, 14561), (335, 14549), (346, 14498), (388, 14264), (421, 14147), (434, 14087), (453, 14036),

Gene: Sujidade\_48 Start: 32754, Stop: 34844, Start Num: 45

Candidate Starts for Sujidade\_48:

(Start: 45 @32754 has 304 MA's), (61, 32799), (79, 32910), (Start: 88 @32964 has 3 MA's), (90, 32970), (Start: 97 @33015 has 1 MA's), (116, 33096), (118, 33105), (119, 33120), (132, 33183), (141, 33225), (154, 33285), (156, 33318), (161, 33342), (169, 33384), (170, 33393), (179, 33462), (180, 33465), (195, 33522), (203, 33552), (212, 33615), (214, 33624), (225, 33675), (242, 33744), (275, 33789), (279, 33801), (297, 33933), (307, 33990), (311, 34011), (316, 34047), (326, 34098), (334, 34134), (346, 34194), (357, 34257), (358, 34263), (360, 34272), (365, 34308), (371, 34368), (378, 34395), (384, 34407), (385, 34410), (392, 34461), (394, 34467), (404, 34512), (410, 34530), (411, 34533), (421, 34566), (426, 34584), (432, 34614), (434, 34626), (443, 34653), (462, 34713), (479, 34785), (485, 34836),

Gene: Sunhee\_54 Start: 35079, Stop: 33040, Start Num: 45

Candidate Starts for Sunhee\_54:



(Start: 45 @35079 has 304 MA's), (61, 35037), (Start: 73 @34965 has 3 MA's), (74, 34962), (102, 34806), (116, 34758), (118, 34749), (127, 34689), (128, 34686), (141, 34629), (169, 34473), (179, 34395), (203, 34329), (209, 34296), (210, 34284), (212, 34266), (213, 34260), (214, 34257), (263, 34122), (272, 34092), (283, 34047), (290, 34005), (311, 33867), (321, 33807), (331, 33753), (344, 33693), (346, 33684), (352, 33657), (357, 33621), (361, 33588), (377, 33489), (380, 33480), (382, 33477), (393, 33426), (402, 33387), (417, 33333), (432, 33270), (447, 33222),

Gene: SunsetPointe\_46 Start: 31778, Stop: 33868, Start Num: 45

Candidate Starts for SunsetPointe\_46:

(Start: 45 @31778 has 304 MA's), (78, 31919), (79, 31934), (82, 31955), (Start: 88 @31988 has 3 MA's), (90, 31994), (Start: 97 @32039 has 1 MA's), (116, 32120), (118, 32129), (132, 32207), (134, 32216), (141, 32249), (156, 32342), (161, 32366), (169, 32408), (179, 32486), (180, 32489), (203, 32576), (212, 32639), (214, 32648), (275, 32813), (279, 32825), (297, 32957), (302, 32984), (311, 33035), (313, 33050), (316, 33071), (329, 33137), (357, 33281), (358, 33287), (360, 33296), (365, 33332), (369, 33380), (371, 33392), (378, 33419), (384, 33431), (392, 33485), (404, 33536), (411, 33557), (421, 33590), (426, 33608), (432, 33638), (434, 33650), (443, 33677), (462, 33737), (478, 33806), (479, 33809), (485, 33860),

Gene: SuperAwesome\_53 Start: 34828, Stop: 32804, Start Num: 45

Candidate Starts for SuperAwesome\_53:

(32, 34861), (Start: 45 @34828 has 304 MA's), (Start: 88 @34642 has 3 MA's), (102, 34558), (116, 34510), (118, 34501), (127, 34441), (141, 34381), (153, 34324), (157, 34285), (165, 34252), (169, 34225), (170, 34216), (175, 34162), (179, 34147), (203, 34075), (208, 34045), (212, 34012), (213, 34006), (214, 34003), (283, 33811), (307, 33652), (311, 33631), (331, 33517), (344, 33457), (346, 33448), (354, 33403), (357, 33385), (361, 33352), (378, 33250), (380, 33244), (393, 33190), (398, 33163), (399, 33160), (402, 33151), (417, 33097), (432, 33034), (440, 33004), (451, 32977),

Gene: SuperCallie99\_52 Start: 34701, Stop: 32677, Start Num: 45

Candidate Starts for SuperCallie99\_52:

(32, 34734), (Start: 45 @34701 has 304 MA's), (Start: 88 @34515 has 3 MA's), (102, 34431), (116, 34383), (118, 34374), (127, 34314), (141, 34254), (153, 34197), (157, 34158), (165, 34125), (169, 34098), (170, 34089), (175, 34035), (179, 34020), (203, 33948), (208, 33918), (212, 33885), (213, 33879), (214, 33876), (283, 33684), (307, 33525), (311, 33504), (331, 33390), (344, 33330), (346, 33321), (354, 33276), (357, 33258), (361, 33225), (378, 33123), (380, 33117), (393, 33063), (398, 33036), (399, 33033), (402, 33024), (417, 32970), (432, 32907), (440, 32877), (451, 32850),

Gene: Superchunk\_50 Start: 34388, Stop: 32370, Start Num: 45

Candidate Starts for Superchunk\_50:

(Start: 45 @34388 has 304 MA's), (Start: 71 @34286 has 1 MA's), (Start: 73 @34277 has 3 MA's), (Start: 88 @34202 has 3 MA's), (102, 34118), (116, 34070), (118, 34061), (127, 34001), (141, 33941), (158, 33839), (169, 33785), (174, 33737), (179, 33707), (202, 33650), (203, 33641), (208, 33611), (209, 33608), (210, 33596), (212, 33578), (213, 33572), (214, 33569), (275, 33413), (283, 33377), (286, 33362), (301, 33251), (311, 33197), (316, 33161), (321, 33137), (326, 33110), (329, 33095), (344, 33023), (346, 33014), (357, 32951), (361, 32918), (363, 32909), (373, 32828), (402, 32717), (404, 32708), (419, 32657), (455, 32534),

Gene: Superstar\_52 Start: 34164, Stop: 36230, Start Num: 45

Candidate Starts for Superstar\_52:

(Start: 45 @34164 has 304 MA's), (79, 34320), (Start: 88 @34374 has 3 MA's), (90, 34380), (Start: 97 @34425 has 1 MA's), (116, 34506), (118, 34515), (133, 34599), (134, 34602), (135, 34614), (141, 34635), (161, 34752), (165, 34767), (169, 34794), (170, 34803), (179, 34872), (203, 34938), (208, 34968), (209, 34971), (212, 35001), (246, 35130), (279, 35187), (294, 35307), (297, 35319), (302, 35346), (311, 35397), (316, 35433), (323, 35460), (329, 35499), (357, 35643), (358, 35649), (360,

35658), (363, 35685), (365, 35694), (366, 35706), (371, 35754), (377, 35778), (384, 35793), (392, 35847), (394, 35853), (404, 35898), (411, 35919), (421, 35952), (426, 35970), (434, 36012), (462, 36099), (478, 36168), (485, 36222),

Gene: Sushi23\_43 Start: 19741, Stop: 21684, Start Num: 64

Candidate Starts for Sushi23\_43:

(Start: 53 @19696 has 2 MA's), (56, 19705), (Start: 64 @19741 has 64 MA's), (Start: 67 @19747 has 1 MA's), (83, 19849), (86, 19870), (90, 19879), (106, 19969), (111, 19978), (112, 19987), (114, 19990), (133, 20095), (151, 20185), (198, 20404), (235, 20605), (248, 20617), (306, 20830), (307, 20839), (324, 20935), (333, 20977), (336, 20995), (366, 21151), (390, 21259), (430, 21430), (431, 21436), (438, 21469), (468, 21568),

Gene: Swann\_41 Start: 32072, Stop: 30027, Start Num: 45

Candidate Starts for Swann\_41:

(Start: 45 @32072 has 304 MA's), (74, 31952), (87, 31883), (Start: 97 @31829 has 1 MA's), (116, 31748), (118, 31739), (127, 31679), (132, 31661), (154, 31559), (156, 31526), (157, 31523), (159, 31514), (164, 31493), (168, 31472), (169, 31463), (175, 31400), (179, 31385), (181, 31379), (203, 31319), (209, 31286), (212, 31256), (213, 31250), (214, 31247), (252, 31112), (304, 30899), (310, 30866), (326, 30776), (328, 30767), (354, 30635), (363, 30575), (372, 30503), (385, 30464), (387, 30461), (388, 30449), (402, 30377), (421, 30305), (428, 30278), (465, 30143),

Gene: SweetiePie\_51 Start: 35890, Stop: 33854, Start Num: 45

Candidate Starts for SweetiePie\_51:

(Start: 45 @35890 has 304 MA's), (Start: 73 @35779 has 3 MA's), (74, 35776), (Start: 88 @35704 has 3 MA's), (Start: 97 @35653 has 1 MA's), (100, 35635), (110, 35599), (118, 35563), (141, 35443), (168, 35296), (169, 35287), (179, 35209), (203, 35137), (208, 35107), (209, 35104), (210, 35092), (212, 35074), (213, 35068), (214, 35065), (272, 34906), (283, 34861), (290, 34819), (311, 34681), (316, 34645), (329, 34579), (331, 34567), (344, 34507), (354, 34453), (357, 34435), (393, 34240), (402, 34201), (403, 34198), (417, 34147), (432, 34084), (447, 34036), (451, 34027), (484, 33886),

Gene: SwirlSquare\_56 Start: 35044, Stop: 33026, Start Num: 45

Candidate Starts for SwirlSquare\_56:

(22, 35107), (Start: 45 @35044 has 304 MA's), (Start: 71 @34942 has 1 MA's), (Start: 73 @34933 has 3 MA's), (Start: 88 @34858 has 3 MA's), (102, 34774), (116, 34726), (118, 34717), (127, 34657), (141, 34597), (158, 34495), (169, 34441), (174, 34393), (179, 34363), (182, 34351), (185, 34342), (202, 34306), (203, 34297), (208, 34267), (209, 34264), (212, 34234), (213, 34228), (214, 34225), (232, 34138), (270, 34081), (272, 34078), (283, 34033), (301, 33907), (311, 33853), (326, 33766), (329, 33751), (344, 33679), (346, 33670), (357, 33607), (361, 33574), (363, 33565), (369, 33508), (382, 33463), (393, 33412), (402, 33373), (417, 33319), (432, 33256), (444, 33214), (477, 33091),

Gene: Swirley\_46 Start: 34973, Stop: 32904, Start Num: 49

Candidate Starts for Swirley\_46:

(Start: 49 @34973 has 219 MA's), (Start: 88 @34787 has 3 MA's), (Start: 97 @34736 has 1 MA's), (116, 34655), (118, 34646), (141, 34526), (146, 34511), (164, 34400), (165, 34397), (169, 34370), (170, 34361), (176, 34301), (179, 34292), (184, 34268), (203, 34181), (208, 34151), (209, 34148), (212, 34118), (213, 34112), (214, 34109), (283, 33917), (308, 33755), (313, 33722), (322, 33674), (329, 33635), (343, 33566), (354, 33509), (356, 33497), (357, 33491), (363, 33449), (365, 33440), (372, 33377), (394, 33287), (399, 33260), (410, 33218), (421, 33182), (426, 33164), (428, 33155), (482, 32945),

Gene: Switzerland\_56 Start: 35083, Stop: 33020, Start Num: 40

Candidate Starts for Switzerland\_56:

(Start: 40 @35083 has 21 MA's), (87, 34888), (Start: 88 @34885 has 3 MA's), (116, 34753), (118, 34744), (141, 34624), (170, 34459), (174, 34420), (179, 34390), (194, 34348), (203, 34324), (208, 34294), (212, 34261), (213, 34255), (214, 34252), (270, 34078), (275, 34066), (283, 34030), (310, 33853), (311, 33850), (316, 33814), (329, 33748), (337, 33709), (339, 33697), (356, 33610), (357, 33604), (363, 33562), (411, 33331), (432, 33250), (452, 33190), (459, 33172), (479, 33079), (482, 33061),

Gene: SydNat\_45 Start: 35173, Stop: 33110, Start Num: 51

Candidate Starts for SydNat\_45:

(Start: 49 @35176 has 219 MA's), (Start: 51 @35173 has 3 MA's), (74, 35062), (Start: 88 @34990 has 3 MA's), (100, 34921), (116, 34858), (118, 34849), (141, 34729), (146, 34714), (164, 34603), (168, 34582), (169, 34573), (170, 34564), (179, 34495), (182, 34483), (200, 34402), (203, 34384), (208, 34354), (209, 34351), (212, 34321), (213, 34315), (214, 34312), (232, 34225), (243, 34195), (258, 34171), (283, 34123), (308, 33961), (313, 33928), (322, 33880), (329, 33841), (343, 33772), (354, 33715), (356, 33703), (357, 33697), (363, 33655), (365, 33646), (392, 33499), (399, 33466), (410, 33424), (421, 33388), (426, 33370), (428, 33361), (482, 33151),

Gene: TNguyen7\_52 Start: 35735, Stop: 33714, Start Num: 49

Candidate Starts for TNguyen7\_52:

(Start: 49 @35735 has 219 MA's), (74, 35621), (92, 35534), (Start: 97 @35498 has 1 MA's), (116, 35417), (118, 35408), (126, 35351), (141, 35288), (169, 35132), (179, 35054), (185, 35033), (187, 35030), (203, 34988), (208, 34958), (210, 34943), (212, 34925), (213, 34919), (214, 34916), (221, 34883), (279, 34751), (311, 34547), (316, 34511), (321, 34487), (329, 34445), (333, 34427), (356, 34307), (357, 34301), (360, 34286), (363, 34259), (389, 34121), (403, 34058), (428, 33965), (432, 33944), (460, 33863), (465, 33830),

Gene: TWAMP\_41 Start: 32074, Stop: 30029, Start Num: 45

Candidate Starts for TWAMP\_41:

(Start: 45 @32074 has 304 MA's), (74, 31954), (85, 31891), (87, 31885), (Start: 97 @31831 has 1 MA's), (116, 31750), (118, 31741), (127, 31681), (132, 31663), (154, 31561), (156, 31528), (157, 31525), (159, 31516), (164, 31495), (168, 31474), (169, 31465), (175, 31402), (179, 31387), (181, 31381), (203, 31321), (209, 31288), (212, 31258), (213, 31252), (214, 31249), (252, 31114), (304, 30901), (310, 30868), (326, 30778), (328, 30769), (354, 30637), (363, 30577), (372, 30505), (385, 30466), (387, 30463), (388, 30451), (402, 30379), (421, 30307), (428, 30280), (465, 30145),

Gene: TagePighter\_49 Start: 32004, Stop: 34094, Start Num: 45

Candidate Starts for TagePighter\_49:

(15, 31923), (Start: 45 @32004 has 304 MA's), (61, 32049), (79, 32160), (82, 32181), (Start: 88 @32214 has 3 MA's), (90, 32220), (Start: 97 @32265 has 1 MA's), (116, 32346), (118, 32355), (132, 32433), (141, 32475), (154, 32535), (156, 32568), (161, 32592), (169, 32634), (170, 32643), (179, 32712), (180, 32715), (203, 32802), (212, 32865), (214, 32874), (225, 32925), (242, 32994), (275, 33039), (279, 33051), (297, 33183), (311, 33261), (313, 33276), (316, 33297), (326, 33348), (357, 33507), (358, 33513), (360, 33522), (365, 33558), (371, 33618), (378, 33645), (384, 33657), (392, 33711), (394, 33717), (404, 33762), (411, 33783), (421, 33816), (426, 33834), (432, 33864), (434, 33876), (443, 33903), (449, 33915), (457, 33936), (462, 33963), (479, 34035),

Gene: Takoda\_41 Start: 31981, Stop: 29936, Start Num: 45

Candidate Starts for Takoda\_41:

(Start: 45 @31981 has 304 MA's), (74, 31861), (85, 31798), (87, 31792), (Start: 97 @31738 has 1 MA's), (116, 31657), (118, 31648), (134, 31561), (154, 31468), (156, 31435), (159, 31423), (164, 31402), (168, 31381), (169, 31372), (179, 31294), (181, 31288), (203, 31228), (209, 31195), (212, 31165), (213, 31159), (214, 31156), (252, 31021), (301, 30826), (304, 30808), (328, 30676), (354, 30544), (363, 30484), (372, 30412), (378, 30388), (385, 30373), (387, 30370), (388, 30358), (393,

30325), (402, 30286), (421, 30214), (428, 30187), (465, 30052),

Gene: Talos\_144 Start: 77070, Stop: 78686, Start Num: 103

Candidate Starts for Talos\_144:

(Start: 103 @77070 has 3 MA's), (Start: 104 @77076 has 1 MA's), (108, 77088), (124, 77181), (138, 77244), (152, 77310), (154, 77316), (157, 77349), (162, 77373), (167, 77397), (173, 77439), (177, 77472), (202, 77505), (212, 77577), (218, 77607), (220, 77613), (226, 77646), (227, 77652), (253, 77718), (270, 77739), (279, 77763), (284, 77793), (306, 77919), (309, 77937), (318, 77994), (328, 78039), (356, 78171), (376, 78309), (379, 78312), (411, 78435), (420, 78465), (425, 78486), (432, 78519), (437, 78537), (442, 78552), (470, 78654),

Gene: Taquarus\_50 Start: 35451, Stop: 33418, Start Num: 49

Candidate Starts for Taquarus\_50:

(Start: 49 @35451 has 219 MA's), (68, 35388), (Start: 73 @35340 has 3 MA's), (78, 35316), (92, 35250), (Start: 97 @35214 has 1 MA's), (102, 35181), (116, 35133), (118, 35124), (127, 35067), (134, 35040), (141, 35007), (169, 34851), (170, 34842), (179, 34773), (203, 34701), (209, 34668), (212, 34638), (213, 34632), (214, 34629), (232, 34542), (244, 34512), (255, 34500), (261, 34491), (279, 34443), (311, 34239), (329, 34137), (333, 34119), (360, 33978), (363, 33951), (392, 33807), (393, 33804), (399, 33774), (417, 33711), (426, 33678), (428, 33669), (432, 33648), (447, 33600), (465, 33534),

Gene: Targaryen\_44 Start: 20514, Stop: 22457, Start Num: 64

Candidate Starts for Targaryen\_44:

(Start: 64 @20514 has 64 MA's), (Start: 67 @20520 has 1 MA's), (83, 20622), (86, 20643), (90, 20652), (106, 20742), (111, 20751), (112, 20760), (114, 20763), (133, 20868), (159, 21012), (198, 21177), (217, 21288), (235, 21378), (248, 21390), (306, 21603), (333, 21750), (336, 21768), (364, 21906), (366, 21924), (390, 22032), (405, 22104), (430, 22203), (438, 22242), (468, 22341),

Gene: TarsusIV\_50 Start: 35730, Stop: 33694, Start Num: 45

Candidate Starts for TarsusIV\_50:

(Start: 45 @35730 has 304 MA's), (61, 35691), (Start: 73 @35619 has 3 MA's), (Start: 88 @35544 has 3 MA's), (Start: 97 @35493 has 1 MA's), (102, 35460), (118, 35403), (141, 35283), (169, 35127), (179, 35049), (198, 34995), (203, 34977), (208, 34947), (209, 34944), (212, 34914), (213, 34908), (214, 34905), (272, 34746), (283, 34701), (290, 34659), (311, 34521), (316, 34485), (329, 34419), (331, 34407), (344, 34347), (354, 34293), (357, 34275), (377, 34143), (380, 34134), (398, 34053), (402, 34041), (403, 34038), (404, 34032), (417, 33987), (432, 33924),

Gene: Tarynearal\_42 Start: 34415, Stop: 32346, Start Num: 49

Candidate Starts for Tarynearal\_42:

(Start: 49 @34415 has 219 MA's), (Start: 88 @34229 has 3 MA's), (Start: 97 @34178 has 1 MA's), (116, 34097), (118, 34088), (141, 33968), (146, 33953), (164, 33842), (165, 33839), (169, 33812), (170, 33803), (176, 33743), (179, 33734), (184, 33710), (203, 33623), (208, 33593), (209, 33590), (212, 33560), (213, 33554), (214, 33551), (283, 33359), (308, 33197), (313, 33164), (322, 33116), (329, 33077), (343, 33008), (354, 32951), (356, 32939), (357, 32933), (363, 32891), (365, 32882), (372, 32819), (394, 32729), (399, 32702), (410, 32660), (421, 32624), (426, 32606), (428, 32597), (482, 32387),

Gene: Taurus\_55 Start: 35906, Stop: 33888, Start Num: 55

Candidate Starts for Taurus\_55:

(Start: 55 @35906 has 95 MA's), (Start: 71 @35813 has 1 MA's), (Start: 73 @35804 has 3 MA's), (78, 35780), (Start: 88 @35729 has 3 MA's), (Start: 97 @35678 has 1 MA's), (116, 35597), (118, 35588), (141, 35468), (154, 35408), (157, 35372), (169, 35312), (179, 35234), (203, 35162), (208, 35132), (212, 35099), (213, 35093), (214, 35090), (230, 35009), (239, 34979), (279, 34925), (304, 34754),

(321, 34658), (329, 34616), (333, 34598), (343, 34550), (346, 34538), (356, 34481), (357, 34475), (360, 34460), (363, 34433), (370, 34370), (371, 34364), (377, 34340), (402, 34235), (421, 34166), (426, 34148), (432, 34118), (459, 34040), (465, 34004), (481, 33941),

Gene: Tefunt\_49 Start: 32989, Stop: 35112, Start Num: 45

Candidate Starts for Tefunt\_49:

(18, 32911), (30, 32953), (38, 32971), (Start: 45 @32989 has 304 MA's), (Start: 88 @33199 has 3 MA's), (90, 33205), (116, 33331), (118, 33340), (132, 33418), (134, 33427), (135, 33439), (141, 33460), (161, 33577), (169, 33619), (170, 33628), (179, 33697), (203, 33805), (208, 33835), (209, 33838), (212, 33868), (260, 34033), (279, 34069), (294, 34189), (311, 34279), (316, 34315), (323, 34342), (346, 34462), (357, 34525), (358, 34531), (360, 34540), (365, 34576), (371, 34636), (378, 34663), (384, 34675), (388, 34693), (392, 34729), (394, 34735), (404, 34780), (411, 34801), (421, 34834), (426, 34852), (432, 34882), (434, 34894), (446, 34927), (462, 34981), (478, 35050), (485, 35104),

Gene: Temprado\_56 Start: 35277, Stop: 33223, Start Num: 45

Candidate Starts for Temprado\_56:

(Start: 45 @35277 has 304 MA's), (Start: 88 @35091 has 3 MA's), (Start: 97 @35040 has 1 MA's), (102, 35007), (116, 34959), (118, 34950), (127, 34890), (141, 34830), (153, 34773), (157, 34734), (165, 34701), (169, 34674), (170, 34665), (175, 34611), (179, 34596), (203, 34524), (208, 34494), (212, 34461), (213, 34455), (214, 34452), (232, 34365), (250, 34311), (270, 34278), (283, 34230), (290, 34188), (311, 34050), (331, 33936), (344, 33876), (346, 33867), (354, 33822), (357, 33804), (361, 33771), (378, 33669), (380, 33663), (393, 33609), (398, 33582), (402, 33570), (417, 33516), (432, 33453), (440, 33423), (451, 33396), (461, 33357),

Gene: Terrific\_54 Start: 36066, Stop: 34069, Start Num: 61

Candidate Starts for Terrific\_54:

(Start: 45 @36105 has 304 MA's), (61, 36066), (Start: 73 @35994 has 3 MA's), (Start: 88 @35919 has 3 MA's), (Start: 97 @35868 has 1 MA's), (102, 35835), (118, 35778), (134, 35691), (141, 35658), (169, 35502), (179, 35424), (182, 35412), (198, 35370), (203, 35352), (208, 35322), (209, 35319), (210, 35307), (212, 35289), (213, 35283), (214, 35280), (272, 35121), (283, 35076), (290, 35034), (291, 35031), (311, 34896), (316, 34860), (329, 34794), (331, 34782), (344, 34722), (354, 34668), (357, 34650), (365, 34599), (377, 34518), (380, 34509), (393, 34455), (399, 34425), (402, 34416), (417, 34362), (432, 34299), (447, 34251), (451, 34242),

Gene: Teutsch\_42 Start: 19389, Stop: 21377, Start Num: 53

Candidate Starts for Teutsch\_42:

(Start: 53 @19389 has 2 MA's), (56, 19398), (Start: 64 @19434 has 64 MA's), (Start: 67 @19440 has 1 MA's), (83, 19542), (86, 19563), (90, 19572), (106, 19662), (111, 19671), (112, 19680), (114, 19683), (133, 19788), (151, 19878), (198, 20097), (235, 20298), (248, 20310), (306, 20523), (307, 20532), (324, 20628), (333, 20670), (336, 20688), (366, 20844), (390, 20952), (430, 21123), (431, 21129), (438, 21162), (468, 21261),

Gene: Texage\_49 Start: 35711, Stop: 33693, Start Num: 55

Candidate Starts for Texage\_49:

(Start: 55 @35711 has 95 MA's), (Start: 71 @35618 has 1 MA's), (Start: 73 @35609 has 3 MA's), (77, 35588), (92, 35519), (Start: 97 @35483 has 1 MA's), (102, 35450), (116, 35402), (118, 35393), (141, 35276), (157, 35180), (169, 35120), (176, 35051), (179, 35042), (182, 35030), (203, 34970), (208, 34940), (209, 34937), (210, 34925), (212, 34907), (213, 34901), (214, 34898), (235, 34793), (239, 34787), (279, 34730), (311, 34526), (321, 34466), (329, 34424), (333, 34406), (346, 34343), (357, 34280), (360, 34265), (363, 34238), (372, 34166), (393, 34079), (403, 34037), (428, 33944), (432, 33923), (465, 33809),

Gene: Thanksgivukkah\_49 Start: 35446, Stop: 33413, Start Num: 49

Candidate Starts for Thanksgivukkah\_49:

(Start: 49 @35446 has 219 MA's), (68, 35383), (Start: 73 @35335 has 3 MA's), (78, 35311), (92, 35245), (Start: 97 @35209 has 1 MA's), (102, 35176), (116, 35128), (118, 35119), (127, 35062), (134, 35035), (141, 35002), (169, 34846), (170, 34837), (179, 34768), (203, 34696), (208, 34666), (209, 34663), (212, 34633), (213, 34627), (214, 34624), (232, 34537), (244, 34507), (255, 34495), (261, 34486), (279, 34438), (311, 34234), (329, 34132), (333, 34114), (360, 33973), (363, 33946), (392, 33802), (393, 33799), (399, 33769), (417, 33706), (426, 33673), (428, 33664), (432, 33643), (447, 33595), (465, 33529),

Gene: Theia\_41 Start: 34466, Stop: 32376, Start Num: 49

Candidate Starts for Theia\_41:

(Start: 49 @34466 has 219 MA's), (74, 34352), (Start: 88 @34280 has 3 MA's), (100, 34211), (116, 34148), (118, 34139), (141, 34019), (146, 34004), (164, 33893), (168, 33872), (169, 33863), (170, 33854), (179, 33785), (182, 33773), (203, 33674), (208, 33644), (209, 33641), (212, 33611), (213, 33605), (214, 33602), (239, 33491), (283, 33389), (286, 33374), (308, 33227), (313, 33194), (322, 33146), (329, 33107), (343, 33038), (354, 32981), (356, 32969), (357, 32963), (363, 32921), (365, 32912), (392, 32765), (399, 32732), (410, 32690), (421, 32654), (426, 32636), (482, 32417),

Gene: Thestral\_49 Start: 33066, Stop: 35180, Start Num: 45

Candidate Starts for Thestral\_49:

(Start: 45 @33066 has 304 MA's), (82, 33234), (Start: 88 @33267 has 3 MA's), (Start: 97 @33318 has 1 MA's), (116, 33399), (118, 33408), (134, 33495), (135, 33507), (141, 33528), (161, 33645), (169, 33687), (170, 33696), (179, 33765), (203, 33873), (212, 33936), (279, 34137), (311, 34347), (316, 34383), (323, 34410), (325, 34428), (329, 34449), (357, 34593), (358, 34599), (360, 34608), (365, 34644), (371, 34704), (378, 34731), (384, 34743), (388, 34761), (392, 34797), (394, 34803), (420, 34899), (421, 34902), (426, 34920), (432, 34950), (434, 34962), (455, 35016), (462, 35049), (478, 35118), (485, 35172),

Gene: Tiffany\_54 Start: 35792, Stop: 33774, Start Num: 55

Candidate Starts for Tiffany\_54:

(Start: 55 @35792 has 95 MA's), (Start: 71 @35699 has 1 MA's), (Start: 73 @35690 has 3 MA's), (78, 35666), (Start: 88 @35615 has 3 MA's), (Start: 97 @35564 has 1 MA's), (116, 35483), (118, 35474), (141, 35354), (154, 35294), (157, 35258), (169, 35198), (179, 35120), (203, 35048), (208, 35018), (212, 34985), (213, 34979), (214, 34976), (230, 34895), (239, 34865), (279, 34811), (304, 34640), (321, 34544), (329, 34502), (333, 34484), (343, 34436), (346, 34424), (356, 34367), (357, 34361), (360, 34346), (363, 34319), (370, 34256), (371, 34250), (377, 34226), (402, 34121), (421, 34052), (426, 34034), (428, 34025), (432, 34004), (459, 33926), (465, 33890), (481, 33827),

Gene: Tiger\_42 Start: 33981, Stop: 31912, Start Num: 49

Candidate Starts for Tiger\_42:

(Start: 49 @33981 has 219 MA's), (Start: 88 @33795 has 3 MA's), (Start: 97 @33744 has 1 MA's), (102, 33711), (116, 33663), (118, 33654), (141, 33534), (146, 33519), (164, 33408), (165, 33405), (169, 33378), (170, 33369), (176, 33309), (179, 33300), (184, 33276), (203, 33189), (208, 33159), (209, 33156), (212, 33126), (213, 33120), (214, 33117), (283, 32925), (308, 32763), (313, 32730), (322, 32682), (329, 32643), (343, 32574), (354, 32517), (356, 32505), (357, 32499), (363, 32457), (365, 32448), (392, 32301), (399, 32268), (410, 32226), (421, 32190), (426, 32172), (428, 32163), (482, 31953),

Gene: Timothy\_51 Start: 34715, Stop: 32802, Start Num: 73

Candidate Starts for Timothy\_51:

(28, 34874), (41, 34841), (Start: 50 @34823 has 19 MA's), (Start: 73 @34715 has 3 MA's), (Start: 88 @34640 has 3 MA's), (116, 34508), (118, 34499), (141, 34379), (169, 34223), (174, 34175), (178,

34148), (179, 34145), (182, 34133), (197, 34100), (203, 34079), (210, 34034), (212, 34016), (213, 34010), (214, 34007), (250, 33887), (283, 33812), (286, 33797), (290, 33770), (311, 33632), (321, 33572), (329, 33530), (333, 33512), (347, 33440), (357, 33386), (360, 33371), (361, 33353), (377, 33254), (393, 33191), (402, 33152), (426, 33062), (432, 33032), (447, 32984),

Gene: Timshel\_48 Start: 36658, Stop: 34610, Start Num: 49

Candidate Starts for Timshel\_48:

(Start: 49 @36658 has 219 MA's), (Start: 88 @36472 has 3 MA's), (102, 36388), (116, 36340), (118, 36331), (131, 36259), (141, 36211), (153, 36154), (157, 36115), (169, 36055), (179, 35977), (180, 35974), (182, 35965), (203, 35905), (208, 35875), (209, 35872), (212, 35842), (213, 35836), (214, 35833), (270, 35671), (279, 35647), (311, 35443), (316, 35407), (322, 35380), (326, 35356), (328, 35347), (333, 35323), (344, 35269), (346, 35260), (360, 35182), (365, 35146), (388, 35029), (393, 34996), (399, 34966), (417, 34903), (429, 34858), (453, 34777), (455, 34774), (465, 34726), (479, 34669), (482, 34651),

Gene: TinaBelcher\_47 Start: 33014, Stop: 35128, Start Num: 45

Candidate Starts for TinaBelcher\_47:

(Start: 20 @32942 has 1 MA's), (30, 32978), (Start: 45 @33014 has 304 MA's), (Start: 88 @33215 has 3 MA's), (Start: 97 @33266 has 1 MA's), (116, 33347), (118, 33356), (134, 33443), (135, 33455), (141, 33476), (161, 33593), (169, 33635), (170, 33644), (179, 33713), (203, 33821), (212, 33884), (269, 34058), (279, 34085), (311, 34295), (316, 34331), (323, 34358), (325, 34376), (329, 34397), (357, 34541), (358, 34547), (360, 34556), (365, 34592), (371, 34652), (378, 34679), (384, 34691), (388, 34709), (392, 34745), (394, 34751), (421, 34850), (426, 34868), (432, 34898), (434, 34910), (455, 34964), (462, 34997), (478, 35066), (485, 35120),

Gene: TinaFeyge\_50 Start: 35443, Stop: 33410, Start Num: 49

Candidate Starts for TinaFeyge\_50:

(Start: 49 @35443 has 219 MA's), (68, 35380), (Start: 73 @35332 has 3 MA's), (78, 35308), (92, 35242), (Start: 97 @35206 has 1 MA's), (102, 35173), (116, 35125), (118, 35116), (127, 35059), (134, 35032), (141, 34999), (169, 34843), (170, 34834), (179, 34765), (203, 34693), (208, 34663), (209, 34660), (212, 34630), (213, 34624), (214, 34621), (232, 34534), (244, 34504), (255, 34492), (261, 34483), (279, 34435), (310, 34234), (311, 34231), (329, 34129), (333, 34111), (360, 33970), (363, 33943), (392, 33799), (393, 33796), (399, 33766), (417, 33703), (426, 33670), (428, 33661), (432, 33640), (447, 33592), (465, 33526),

Gene: TinyPebbles\_53 Start: 35936, Stop: 33918, Start Num: 55

Candidate Starts for TinyPebbles\_53:

(Start: 55 @35936 has 95 MA's), (Start: 71 @35843 has 1 MA's), (Start: 73 @35834 has 3 MA's), (78, 35810), (Start: 88 @35759 has 3 MA's), (Start: 97 @35708 has 1 MA's), (116, 35627), (118, 35618), (141, 35501), (157, 35405), (169, 35345), (176, 35276), (179, 35267), (180, 35264), (182, 35255), (203, 35195), (208, 35165), (209, 35162), (210, 35150), (212, 35132), (213, 35126), (214, 35123), (235, 35018), (239, 35012), (279, 34955), (311, 34751), (313, 34736), (316, 34715), (321, 34691), (326, 34664), (329, 34649), (356, 34511), (357, 34505), (360, 34490), (363, 34463), (370, 34400), (371, 34394), (377, 34370), (402, 34265), (411, 34229), (432, 34148), (459, 34070), (465, 34034), (481, 33971),

Gene: TinyTimmy\_51 Start: 34872, Stop: 32851, Start Num: 50

Candidate Starts for TinyTimmy\_51:

(28, 34923), (41, 34890), (Start: 50 @34872 has 19 MA's), (Start: 73 @34764 has 3 MA's), (Start: 88 @34689 has 3 MA's), (116, 34557), (118, 34548), (141, 34428), (169, 34272), (174, 34224), (178, 34197), (179, 34194), (182, 34182), (197, 34149), (203, 34128), (210, 34083), (212, 34065), (213, 34059), (214, 34056), (250, 33936), (283, 33861), (286, 33846), (311, 33681), (321, 33621), (329, 33579), (333, 33561), (347, 33489), (357, 33435), (360, 33420), (361, 33402), (377, 33303), (393,

33240), (402, 33201), (426, 33111), (432, 33081), (447, 33033),

Gene: Tinybot\_49 Start: 35475, Stop: 33442, Start Num: 49

Candidate Starts for Tinybot\_49:

(Start: 49 @35475 has 219 MA's), (68, 35412), (Start: 73 @35364 has 3 MA's), (78, 35340), (92, 35274), (Start: 97 @35238 has 1 MA's), (102, 35205), (116, 35157), (118, 35148), (127, 35091), (134, 35064), (141, 35031), (169, 34875), (170, 34866), (179, 34797), (203, 34725), (208, 34695), (209, 34692), (212, 34662), (213, 34656), (214, 34653), (232, 34566), (244, 34536), (255, 34524), (261, 34515), (279, 34467), (311, 34263), (329, 34161), (333, 34143), (360, 34002), (363, 33975), (392, 33831), (393, 33828), (399, 33798), (417, 33735), (426, 33702), (428, 33693), (432, 33672), (447, 33624), (465, 33558),

Gene: TopsytheTRex\_47 Start: 34972, Stop: 32924, Start Num: 45

Candidate Starts for TopsytheTRex\_47:

(Start: 45 @34972 has 304 MA's), (Start: 71 @34870 has 1 MA's), (Start: 73 @34861 has 3 MA's), (Start: 88 @34786 has 3 MA's), (116, 34654), (118, 34645), (128, 34582), (141, 34525), (168, 34378), (169, 34369), (174, 34321), (175, 34306), (179, 34291), (203, 34225), (208, 34195), (209, 34192), (210, 34180), (212, 34162), (213, 34156), (214, 34153), (263, 34000), (270, 33973), (283, 33925), (290, 33883), (301, 33799), (307, 33766), (311, 33745), (316, 33709), (321, 33685), (322, 33682), (326, 33658), (331, 33631), (344, 33571), (346, 33562), (357, 33499), (361, 33466), (363, 33457), (373, 33376), (393, 33304), (398, 33277), (417, 33217), (432, 33154),

Gene: TiroTheta9\_50 Start: 35442, Stop: 33409, Start Num: 49

Candidate Starts for TiroTheta9\_50:

(Start: 49 @35442 has 219 MA's), (68, 35379), (Start: 73 @35331 has 3 MA's), (78, 35307), (92, 35241), (Start: 97 @35205 has 1 MA's), (102, 35172), (116, 35124), (118, 35115), (127, 35058), (134, 35031), (141, 34998), (169, 34842), (170, 34833), (179, 34764), (203, 34692), (208, 34662), (209, 34659), (212, 34629), (213, 34623), (214, 34620), (232, 34533), (241, 34509), (244, 34503), (255, 34491), (261, 34482), (279, 34434), (310, 34233), (311, 34230), (329, 34128), (333, 34110), (360, 33969), (363, 33942), (392, 33798), (393, 33795), (399, 33765), (417, 33702), (426, 33669), (428, 33660), (432, 33639), (447, 33591), (465, 33525),

Gene: Toaka\_51 Start: 35561, Stop: 33522, Start Num: 45

Candidate Starts for Toaka\_51:

(Start: 45 @35561 has 304 MA's), (Start: 73 @35447 has 3 MA's), (78, 35423), (102, 35288), (118, 35231), (128, 35168), (141, 35111), (169, 34955), (179, 34877), (182, 34865), (203, 34811), (210, 34766), (212, 34748), (213, 34742), (214, 34739), (272, 34574), (283, 34529), (311, 34349), (329, 34247), (344, 34175), (357, 34103), (361, 34070), (363, 34061), (397, 33890), (399, 33878), (402, 33869), (417, 33815), (432, 33752), (447, 33704), (469, 33623),

Gene: Todacoro\_50 Start: 35710, Stop: 33692, Start Num: 55

Candidate Starts for Todacoro\_50:

(Start: 55 @35710 has 95 MA's), (Start: 71 @35617 has 1 MA's), (Start: 73 @35608 has 3 MA's), (77, 35587), (92, 35518), (Start: 97 @35482 has 1 MA's), (102, 35449), (116, 35401), (118, 35392), (141, 35275), (157, 35179), (169, 35119), (176, 35050), (179, 35041), (182, 35029), (203, 34969), (208, 34939), (209, 34936), (210, 34924), (212, 34906), (213, 34900), (214, 34897), (235, 34792), (239, 34786), (279, 34729), (311, 34525), (321, 34465), (329, 34423), (333, 34405), (346, 34342), (357, 34279), (360, 34264), (363, 34237), (372, 34165), (393, 34078), (403, 34036), (428, 33943), (432, 33922), (465, 33808),

Gene: TomSawyer\_43 Start: 19127, Stop: 21067, Start Num: 64

Candidate Starts for TomSawyer\_43:



(Start: 64 @19127 has 64 MA's), (90, 19259), (96, 19295), (102, 19331), (111, 19358), (114, 19370), (133, 19475), (148, 19532), (185, 19757), (206, 19811), (217, 19895), (228, 19946), (235, 19985), (248, 19997), (285, 20075), (297, 20174), (306, 20210), (333, 20357), (366, 20531), (369, 20567), (389, 20636), (390, 20639), (430, 20810), (468, 20948),

Gene: Toma\_47 Start: 32483, Stop: 34573, Start Num: 45

Candidate Starts for Toma\_47:

(15, 32399), (Start: 45 @32483 has 304 MA's), (61, 32528), (79, 32639), (Start: 88 @32693 has 3 MA's), (90, 32699), (Start: 97 @32744 has 1 MA's), (116, 32825), (118, 32834), (132, 32912), (134, 32921), (141, 32954), (154, 33014), (156, 33047), (161, 33071), (169, 33113), (179, 33191), (180, 33194), (195, 33251), (203, 33281), (212, 33344), (214, 33353), (225, 33404), (242, 33473), (275, 33518), (279, 33530), (288, 33587), (297, 33662), (307, 33719), (311, 33740), (316, 33776), (326, 33827), (334, 33863), (346, 33923), (357, 33986), (358, 33992), (360, 34001), (365, 34037), (369, 34085), (371, 34097), (378, 34124), (384, 34136), (392, 34190), (394, 34196), (404, 34241), (410, 34259), (411, 34262), (421, 34295), (426, 34313), (432, 34343), (434, 34355), (443, 34382), (462, 34442), (479, 34514), (485, 34565),

Gene: Tomas\_46 Start: 21353, Stop: 23293, Start Num: 64

Candidate Starts for Tomas\_46:

(Start: 64 @21353 has 64 MA's), (90, 21485), (102, 21557), (111, 21584), (114, 21596), (118, 21614), (133, 21701), (144, 21743), (148, 21758), (159, 21845), (179, 21962), (198, 22010), (217, 22121), (235, 22211), (248, 22223), (295, 22391), (297, 22400), (327, 22556), (333, 22583), (336, 22601), (366, 22757), (389, 22862), (390, 22865), (430, 23036), (438, 23075), (468, 23174), (473, 23198), (483, 23246),

Gene: Tomathan\_53 Start: 35561, Stop: 33480, Start Num: 49

Candidate Starts for Tomathan\_53:

(Start: 49 @35561 has 219 MA's), (Start: 71 @35456 has 1 MA's), (Start: 73 @35447 has 3 MA's), (Start: 88 @35372 has 3 MA's), (116, 35240), (118, 35231), (127, 35171), (147, 35093), (153, 35054), (169, 34955), (175, 34892), (179, 34877), (200, 34799), (203, 34781), (208, 34751), (209, 34748), (212, 34718), (213, 34712), (214, 34709), (232, 34622), (266, 34562), (270, 34547), (283, 34499), (311, 34319), (329, 34217), (331, 34205), (344, 34145), (346, 34136), (354, 34091), (356, 34079), (360, 34058), (363, 34031), (371, 33962), (393, 33866), (402, 33827), (411, 33791), (432, 33710), (444, 33668),

Gene: ToneTone\_51 Start: 34837, Stop: 32783, Start Num: 45

Candidate Starts for ToneTone\_51:

(Start: 45 @34837 has 304 MA's), (Start: 88 @34651 has 3 MA's), (Start: 97 @34600 has 1 MA's), (102, 34567), (116, 34519), (118, 34510), (127, 34450), (141, 34390), (153, 34333), (157, 34294), (165, 34261), (169, 34234), (170, 34225), (175, 34171), (179, 34156), (203, 34084), (208, 34054), (212, 34021), (213, 34015), (214, 34012), (232, 33925), (250, 33871), (270, 33838), (283, 33790), (290, 33748), (311, 33610), (331, 33496), (344, 33436), (346, 33427), (354, 33382), (357, 33364), (361, 33331), (378, 33229), (380, 33223), (393, 33169), (398, 33142), (402, 33130), (417, 33076), (432, 33013), (440, 32983), (451, 32956), (461, 32917),

Gene: Topanga\_47 Start: 35194, Stop: 33119, Start Num: 34

Candidate Starts for Topanga\_47:

(Start: 34 @35194 has 17 MA's), (Start: 73 @35053 has 3 MA's), (74, 35050), (78, 35029), (Start: 97 @34927 has 1 MA's), (102, 34894), (116, 34846), (118, 34837), (127, 34780), (141, 34720), (146, 34705), (169, 34564), (179, 34486), (182, 34474), (202, 34423), (203, 34414), (208, 34384), (212, 34351), (213, 34345), (214, 34342), (232, 34255), (280, 34141), (283, 34120), (290, 34078), (311, 33940), (329, 33838), (333, 33820), (343, 33769), (356, 33700), (357, 33694), (360, 33679), (363, 33652), (365, 33643), (371, 33583), (392, 33508), (393, 33505), (394, 33502), (403, 33463), (417,

33412), (419, 33406), (432, 33349), (465, 33235), (479, 33178),

Gene: Toro\_53 Start: 37832, Stop: 35775, Start Num: 51

Candidate Starts for Toro\_53:

(Start: 51 @37832 has 3 MA's), (75, 37709), (Start: 88 @37649 has 3 MA's), (Start: 97 @37598 has 1 MA's), (102, 37565), (116, 37517), (118, 37508), (127, 37448), (141, 37388), (150, 37343), (168, 37241), (176, 37163), (179, 37154), (203, 37073), (208, 37043), (209, 37040), (212, 37010), (213, 37004), (214, 37001), (254, 36875), (279, 36809), (311, 36605), (316, 36569), (322, 36542), (329, 36503), (333, 36485), (356, 36365), (357, 36359), (360, 36344), (365, 36308), (372, 36245), (393, 36158), (399, 36128), (403, 36116), (417, 36065), (428, 36023), (455, 35939),

Gene: Travvers\_53 Start: 35372, Stop: 33480, Start Num: 88

Candidate Starts for Travvers\_53:

(Start: 49 @35561 has 219 MA's), (Start: 71 @35456 has 1 MA's), (Start: 73 @35447 has 3 MA's), (Start: 88 @35372 has 3 MA's), (102, 35288), (116, 35240), (118, 35231), (127, 35171), (147, 35093), (153, 35054), (156, 35018), (169, 34955), (175, 34892), (179, 34877), (203, 34781), (208, 34751), (209, 34748), (212, 34718), (213, 34712), (214, 34709), (232, 34622), (270, 34547), (283, 34499), (311, 34319), (329, 34217), (331, 34205), (344, 34145), (346, 34136), (354, 34091), (356, 34079), (360, 34058), (363, 34031), (371, 33962), (393, 33866), (398, 33839), (402, 33827), (411, 33791), (432, 33710), (444, 33668),

Gene: Tribute\_41 Start: 19162, Stop: 21150, Start Num: 53

Candidate Starts for Tribute\_41:

(Start: 53 @19162 has 2 MA's), (56, 19171), (Start: 64 @19207 has 64 MA's), (Start: 67 @19213 has 1 MA's), (83, 19315), (86, 19336), (90, 19345), (106, 19435), (111, 19444), (112, 19453), (114, 19456), (133, 19561), (151, 19651), (166, 19729), (198, 19870), (235, 20071), (248, 20083), (306, 20296), (307, 20305), (333, 20443), (336, 20461), (366, 20617), (390, 20725), (430, 20896), (438, 20935), (468, 21034),

Gene: Trike\_47 Start: 34415, Stop: 32376, Start Num: 34

Candidate Starts for Trike\_47:

(Start: 34 @34415 has 17 MA's), (78, 34280), (Start: 97 @34178 has 1 MA's), (102, 34145), (116, 34097), (118, 34088), (127, 34031), (141, 33971), (146, 33956), (169, 33815), (179, 33737), (182, 33725), (203, 33665), (208, 33635), (212, 33602), (213, 33596), (214, 33593), (221, 33560), (270, 33425), (279, 33401), (311, 33197), (329, 33095), (333, 33077), (343, 33026), (356, 32957), (357, 32951), (363, 32909), (365, 32900), (371, 32840), (392, 32765), (393, 32762), (394, 32759), (403, 32720), (417, 32669), (419, 32663), (432, 32606), (465, 32492), (479, 32435),

Gene: Tristan\_49 Start: 36747, Stop: 34690, Start Num: 45

Candidate Starts for Tristan\_49:

(Start: 45 @36747 has 304 MA's), (118, 36417), (119, 36402), (127, 36357), (141, 36297), (159, 36192), (169, 36141), (170, 36132), (179, 36063), (194, 36015), (203, 35991), (208, 35961), (209, 35958), (212, 35928), (213, 35922), (214, 35919), (263, 35766), (272, 35736), (283, 35691), (290, 35649), (311, 35511), (316, 35475), (329, 35409), (344, 35337), (357, 35265), (377, 35133), (378, 35130), (380, 35124), (393, 35070), (398, 35043), (417, 34983), (421, 34968), (432, 34920), (447, 34872), (451, 34863),

Gene: Triumph\_50 Start: 33000, Stop: 35090, Start Num: 45

Candidate Starts for Triumph\_50:

(Start: 45 @33000 has 304 MA's), (82, 33177), (Start: 88 @33210 has 3 MA's), (Start: 97 @33261 has 1 MA's), (116, 33342), (118, 33351), (134, 33438), (135, 33450), (141, 33471), (161, 33588), (169, 33630), (170, 33639), (179, 33708), (190, 33753), (203, 33798), (212, 33861), (246, 33990), (268, 34017), (279, 34047), (297, 34179), (311, 34257), (316, 34293), (323, 34320), (325, 34338), (329,

34359), (357, 34503), (358, 34509), (360, 34518), (365, 34554), (368, 34593), (371, 34614), (378, 34641), (384, 34653), (389, 34683), (392, 34707), (421, 34812), (426, 34830), (434, 34872), (447, 34908), (462, 34959), (478, 35028), (485, 35082),

Gene: Trixie\_49 Start: 35841, Stop: 33811, Start Num: 45

Candidate Starts for Trixie\_49:

(Start: 45 @35841 has 304 MA's), (Start: 73 @35727 has 3 MA's), (74, 35724), (87, 35655), (Start: 88 @35652 has 3 MA's), (89, 35649), (Start: 97 @35601 has 1 MA's), (102, 35568), (116, 35520), (118, 35511), (127, 35451), (141, 35391), (169, 35235), (170, 35226), (179, 35157), (192, 35121), (194, 35115), (203, 35091), (208, 35061), (209, 35058), (212, 35028), (213, 35022), (214, 35019), (272, 34863), (283, 34818), (290, 34776), (311, 34638), (321, 34578), (329, 34536), (344, 34464), (357, 34392), (377, 34260), (380, 34251), (393, 34197), (410, 34125), (417, 34104), (419, 34098), (432, 34041), (451, 33984),

Gene: Trooper\_52 Start: 36110, Stop: 34074, Start Num: 45

Candidate Starts for Trooper\_52:

(Start: 45 @36110 has 304 MA's), (61, 36071), (Start: 73 @35999 has 3 MA's), (Start: 88 @35924 has 3 MA's), (Start: 97 @35873 has 1 MA's), (102, 35840), (116, 35792), (118, 35783), (141, 35663), (169, 35507), (179, 35429), (198, 35375), (203, 35357), (208, 35327), (209, 35324), (210, 35312), (212, 35294), (213, 35288), (214, 35285), (272, 35126), (283, 35081), (290, 35039), (311, 34901), (316, 34865), (329, 34799), (331, 34787), (344, 34727), (354, 34673), (357, 34655), (377, 34523), (380, 34514), (393, 34460), (398, 34433), (402, 34421), (403, 34418), (417, 34367), (432, 34304),

Gene: TroyPia\_51 Start: 35446, Stop: 33413, Start Num: 49

Candidate Starts for TroyPia\_51:

(Start: 49 @35446 has 219 MA's), (68, 35383), (Start: 73 @35335 has 3 MA's), (78, 35311), (92, 35245), (Start: 97 @35209 has 1 MA's), (102, 35176), (116, 35128), (118, 35119), (127, 35062), (134, 35035), (141, 35002), (169, 34846), (170, 34837), (179, 34768), (203, 34696), (208, 34666), (209, 34663), (212, 34633), (213, 34627), (214, 34624), (232, 34537), (244, 34507), (255, 34495), (261, 34486), (279, 34438), (311, 34234), (329, 34132), (333, 34114), (360, 33973), (363, 33946), (393, 33799), (399, 33769), (417, 33706), (426, 33673), (428, 33664), (432, 33643), (447, 33595), (465, 33529),

Gene: TrvxScott\_46 Start: 32988, Stop: 35174, Start Num: 20

Candidate Starts for TrvxScott\_46:

(Start: 20 @32988 has 1 MA's), (30, 33024), (Start: 45 @33060 has 304 MA's), (Start: 88 @33261 has 3 MA's), (Start: 97 @33312 has 1 MA's), (116, 33393), (118, 33402), (134, 33489), (135, 33501), (141, 33522), (161, 33639), (169, 33681), (170, 33690), (179, 33759), (203, 33867), (212, 33930), (269, 34104), (279, 34131), (311, 34341), (316, 34377), (323, 34404), (325, 34422), (329, 34443), (357, 34587), (358, 34593), (360, 34602), (365, 34638), (371, 34698), (378, 34725), (384, 34737), (388, 34755), (392, 34791), (421, 34896), (426, 34914), (434, 34956), (455, 35010), (462, 35043), (478, 35112), (485, 35166),

Gene: TuanPN\_46 Start: 31944, Stop: 34034, Start Num: 45

Candidate Starts for TuanPN\_46:

(27, 31902), (30, 31908), (Start: 45 @31944 has 304 MA's), (Start: 73 @32061 has 3 MA's), (79, 32100), (82, 32121), (Start: 88 @32154 has 3 MA's), (Start: 97 @32205 has 1 MA's), (116, 32286), (118, 32295), (132, 32373), (141, 32415), (154, 32475), (156, 32508), (161, 32532), (169, 32574), (179, 32652), (180, 32655), (195, 32712), (203, 32742), (212, 32805), (214, 32814), (225, 32865), (242, 32934), (275, 32979), (279, 32991), (297, 33123), (311, 33201), (313, 33216), (316, 33237), (357, 33447), (358, 33453), (360, 33462), (365, 33498), (371, 33558), (378, 33585), (384, 33597), (385, 33600), (392, 33651), (394, 33657), (411, 33723), (421, 33756), (426, 33774), (432, 33804), (434, 33816), (443, 33843), (462, 33903), (479, 33975),

Gene: Tubs\_51 Start: 35670, Stop: 33631, Start Num: 45

Candidate Starts for Tubs\_51:

(Start: 45 @35670 has 304 MA's), (Start: 73 @35556 has 3 MA's), (75, 35541), (78, 35532), (Start: 97 @35430 has 1 MA's), (118, 35340), (127, 35280), (141, 35220), (168, 35073), (169, 35064), (179, 34986), (182, 34974), (202, 34929), (203, 34920), (208, 34890), (210, 34875), (212, 34857), (213, 34851), (214, 34848), (272, 34683), (280, 34659), (283, 34638), (311, 34458), (331, 34344), (344, 34284), (361, 34179), (363, 34170), (393, 34017), (399, 33987), (417, 33924), (432, 33861),

Gene: Tucker\_54 Start: 35006, Stop: 32952, Start Num: 45

Candidate Starts for Tucker\_54:

(Start: 45 @35006 has 304 MA's), (Start: 88 @34820 has 3 MA's), (Start: 97 @34769 has 1 MA's), (102, 34736), (116, 34688), (118, 34679), (127, 34619), (141, 34559), (153, 34502), (157, 34463), (165, 34430), (169, 34403), (170, 34394), (175, 34340), (179, 34325), (203, 34253), (208, 34223), (212, 34190), (213, 34184), (214, 34181), (232, 34094), (250, 34040), (270, 34007), (283, 33959), (290, 33917), (311, 33779), (331, 33665), (344, 33605), (346, 33596), (354, 33551), (357, 33533), (361, 33500), (378, 33398), (380, 33392), (393, 33338), (398, 33311), (402, 33299), (417, 33245), (432, 33182), (440, 33152), (451, 33125), (459, 33104),

Gene: TunaTartare\_19 Start: 7510, Stop: 9453, Start Num: 65

Candidate Starts for TunaTartare\_19:

(62, 7501), (Start: 65 @7510 has 26 MA's), (Start: 73 @7567 has 3 MA's), (111, 7747), (114, 7759), (133, 7864), (163, 8014), (179, 8122), (206, 8197), (208, 8218), (314, 8644), (326, 8710), (327, 8716), (366, 8917), (370, 8959), (371, 8965), (381, 8989), (383, 8992), (390, 9025), (400, 9082), (412, 9127), (468, 9334), (473, 9358),

Gene: Turbido\_52 Start: 36139, Stop: 34100, Start Num: 45

Candidate Starts for Turbido\_52:

(Start: 45 @36139 has 304 MA's), (Start: 97 @35899 has 1 MA's), (118, 35809), (119, 35794), (141, 35689), (169, 35533), (179, 35455), (203, 35383), (208, 35353), (209, 35350), (210, 35338), (212, 35320), (213, 35314), (214, 35311), (272, 35152), (283, 35107), (290, 35065), (311, 34927), (316, 34891), (329, 34825), (331, 34813), (344, 34753), (354, 34699), (357, 34681), (402, 34447), (403, 34444), (417, 34393), (432, 34330), (447, 34282), (451, 34273), (484, 34132),

Gene: Twigg\_44 Start: 34612, Stop: 32543, Start Num: 49

Candidate Starts for Twigg\_44:

(Start: 49 @34612 has 219 MA's), (Start: 88 @34426 has 3 MA's), (Start: 97 @34375 has 1 MA's), (116, 34294), (118, 34285), (141, 34165), (146, 34150), (164, 34039), (165, 34036), (169, 34009), (170, 34000), (176, 33940), (179, 33931), (184, 33907), (203, 33820), (208, 33790), (209, 33787), (212, 33757), (213, 33751), (214, 33748), (283, 33556), (308, 33394), (313, 33361), (322, 33313), (329, 33274), (343, 33205), (354, 33148), (356, 33136), (357, 33130), (363, 33088), (365, 33079), (372, 33016), (394, 32926), (399, 32899), (410, 32857), (421, 32821), (426, 32803), (428, 32794), (482, 32584),

Gene: Twister\_47 Start: 35111, Stop: 33030, Start Num: 34

Candidate Starts for Twister\_47:

(Start: 34 @35111 has 17 MA's), (44, 35090), (Start: 73 @34970 has 3 MA's), (74, 34967), (78, 34946), (Start: 97 @34844 has 1 MA's), (102, 34811), (116, 34763), (118, 34754), (127, 34697), (141, 34637), (146, 34622), (157, 34541), (169, 34481), (179, 34403), (182, 34391), (202, 34340), (203, 34331), (208, 34301), (212, 34268), (213, 34262), (214, 34259), (266, 34094), (272, 34076), (283, 34031), (290, 33989), (311, 33851), (329, 33749), (333, 33731), (343, 33680), (356, 33611), (357, 33605), (360, 33590), (363, 33563), (365, 33554), (371, 33494), (392, 33419), (393, 33416), (394, 33413), (403, 33374), (417, 33323), (419, 33317), (432, 33260), (465, 33146), (479, 33089),

Gene: TygerBlood\_50 Start: 35448, Stop: 33415, Start Num: 49

Candidate Starts for TygerBlood\_50:

(Start: 49 @35448 has 219 MA's), (68, 35385), (72, 35343), (Start: 73 @35337 has 3 MA's), (78, 35313), (92, 35247), (Start: 97 @35211 has 1 MA's), (102, 35178), (116, 35130), (118, 35121), (127, 35064), (134, 35037), (141, 35004), (169, 34848), (170, 34839), (179, 34770), (203, 34698), (208, 34668), (209, 34665), (212, 34635), (213, 34629), (214, 34626), (232, 34539), (244, 34509), (255, 34497), (261, 34488), (279, 34440), (311, 34236), (329, 34134), (333, 34116), (360, 33975), (363, 33948), (392, 33804), (393, 33801), (399, 33771), (417, 33708), (426, 33675), (428, 33666), (432, 33645), (447, 33597), (465, 33531),

Gene: Ugenie5\_48 Start: 35955, Stop: 33916, Start Num: 45

Candidate Starts for Ugenie5\_48:

(Start: 45 @35955 has 304 MA's), (Start: 73 @35841 has 3 MA's), (75, 35826), (78, 35817), (Start: 97 @35715 has 1 MA's), (118, 35625), (127, 35565), (128, 35562), (141, 35505), (168, 35358), (169, 35349), (179, 35271), (182, 35259), (203, 35205), (208, 35175), (210, 35160), (212, 35142), (213, 35136), (214, 35133), (272, 34968), (283, 34923), (311, 34743), (331, 34629), (344, 34569), (361, 34464), (363, 34455), (393, 34302), (399, 34272), (417, 34209), (432, 34146),

Gene: UhSalsa\_41 Start: 32007, Stop: 29962, Start Num: 45

Candidate Starts for UhSalsa\_41:

(Start: 45 @32007 has 304 MA's), (74, 31887), (87, 31818), (Start: 97 @31764 has 1 MA's), (116, 31683), (118, 31674), (127, 31614), (132, 31596), (154, 31494), (156, 31461), (157, 31458), (159, 31449), (164, 31428), (168, 31407), (169, 31398), (175, 31335), (179, 31320), (181, 31314), (203, 31254), (209, 31221), (212, 31191), (213, 31185), (214, 31182), (252, 31047), (301, 30852), (304, 30834), (310, 30801), (326, 30711), (328, 30702), (354, 30570), (363, 30510), (372, 30438), (385, 30399), (387, 30396), (388, 30384), (393, 30351), (402, 30312), (421, 30240), (428, 30213), (465, 30078),

Gene: Ulysses\_49 Start: 35125, Stop: 33092, Start Num: 49

Candidate Starts for Ulysses\_49:

(Start: 49 @35125 has 219 MA's), (68, 35062), (Start: 73 @35014 has 3 MA's), (78, 34990), (92, 34924), (Start: 97 @34888 has 1 MA's), (102, 34855), (116, 34807), (118, 34798), (127, 34741), (134, 34714), (141, 34681), (169, 34525), (170, 34516), (179, 34447), (203, 34375), (208, 34345), (209, 34342), (212, 34312), (213, 34306), (214, 34303), (232, 34216), (244, 34186), (255, 34174), (261, 34165), (279, 34117), (311, 33913), (329, 33811), (333, 33793), (360, 33652), (363, 33625), (392, 33481), (393, 33478), (399, 33448), (417, 33385), (426, 33352), (428, 33343), (432, 33322), (447, 33274), (465, 33208),

Gene: UnionJack\_44 Start: 33904, Stop: 31856, Start Num: 49

Candidate Starts for UnionJack\_44:

(17, 33970), (Start: 49 @33904 has 219 MA's), (Start: 88 @33721 has 3 MA's), (Start: 97 @33670 has 1 MA's), (102, 33637), (116, 33589), (118, 33580), (123, 33538), (147, 33442), (153, 33403), (158, 33358), (168, 33313), (169, 33304), (175, 33241), (176, 33235), (179, 33226), (203, 33154), (208, 33124), (209, 33121), (212, 33091), (213, 33085), (214, 33082), (239, 32971), (283, 32869), (286, 32854), (313, 32674), (322, 32626), (329, 32587), (343, 32518), (354, 32461), (356, 32449), (357, 32443), (363, 32401), (365, 32392), (372, 32329), (394, 32239), (399, 32212), (410, 32170), (421, 32134), (426, 32116), (428, 32107), (482, 31897),

Gene: Unstoppable\_47 Start: 31658, Stop: 33748, Start Num: 45

Candidate Starts for Unstoppable\_47:

(Start: 45 @31658 has 304 MA's), (78, 31799), (79, 31814), (Start: 88 @31868 has 3 MA's), (90, 31874), (Start: 97 @31919 has 1 MA's), (116, 32000), (118, 32009), (132, 32087), (134, 32096), (141,

32129), (156, 32222), (161, 32246), (169, 32288), (179, 32366), (180, 32369), (203, 32456), (212, 32519), (214, 32528), (275, 32693), (279, 32705), (297, 32837), (302, 32864), (311, 32915), (313, 32930), (316, 32951), (329, 33017), (357, 33161), (358, 33167), (360, 33176), (365, 33212), (369, 33260), (371, 33272), (378, 33299), (384, 33311), (392, 33365), (404, 33416), (411, 33437), (421, 33470), (426, 33488), (432, 33518), (434, 33530), (443, 33557), (462, 33617), (478, 33686), (479, 33689), (485, 33740),

Gene: Updawg\_52 Start: 35992, Stop: 33956, Start Num: 45

Candidate Starts for Updawg\_52:

(Start: 45 @35992 has 304 MA's), (61, 35953), (Start: 73 @35881 has 3 MA's), (Start: 88 @35806 has 3 MA's), (Start: 97 @35755 has 1 MA's), (102, 35722), (118, 35665), (127, 35605), (134, 35578), (141, 35545), (169, 35389), (179, 35311), (182, 35299), (198, 35257), (203, 35239), (208, 35209), (209, 35206), (210, 35194), (212, 35176), (213, 35170), (214, 35167), (272, 35008), (283, 34963), (290, 34921), (311, 34783), (316, 34747), (329, 34681), (331, 34669), (354, 34555), (357, 34537), (365, 34486), (377, 34405), (380, 34396), (393, 34342), (399, 34312), (402, 34303), (417, 34249), (432, 34186), (447, 34138), (451, 34129),

Gene: VA6\_52 Start: 36127, Stop: 34070, Start Num: 45

Candidate Starts for VA6\_52:

(Start: 45 @36127 has 304 MA's), (Start: 71 @36022 has 1 MA's), (Start: 73 @36013 has 3 MA's), (74, 36010), (78, 35989), (Start: 88 @35938 has 3 MA's), (Start: 97 @35887 has 1 MA's), (118, 35797), (127, 35737), (141, 35677), (169, 35521), (170, 35512), (179, 35443), (203, 35377), (208, 35347), (209, 35344), (210, 35332), (212, 35314), (213, 35308), (214, 35305), (240, 35194), (272, 35122), (283, 35077), (290, 35035), (311, 34897), (316, 34861), (329, 34795), (331, 34783), (344, 34723), (354, 34669), (357, 34651), (382, 34510), (388, 34489), (393, 34456), (402, 34417), (403, 34414), (410, 34384), (417, 34363), (419, 34357), (432, 34300), (447, 34252), (451, 34243),

Gene: VC3\_54 Start: 35980, Stop: 33899, Start Num: 49

Candidate Starts for VC3\_54:

(Start: 49 @35980 has 219 MA's), (78, 35842), (102, 35707), (116, 35659), (118, 35650), (127, 35590), (147, 35512), (153, 35473), (156, 35437), (169, 35374), (175, 35311), (179, 35296), (203, 35200), (208, 35170), (209, 35167), (212, 35137), (213, 35131), (214, 35128), (232, 35041), (270, 34966), (283, 34918), (286, 34903), (311, 34738), (329, 34636), (331, 34624), (344, 34564), (346, 34555), (354, 34510), (356, 34498), (360, 34477), (363, 34450), (393, 34285), (398, 34258), (402, 34246), (411, 34210), (432, 34129),

Gene: Vanisoa\_51 Start: 36591, Stop: 34552, Start Num: 45

Candidate Starts for Vanisoa\_51:

(Start: 45 @36591 has 304 MA's), (Start: 73 @36477 has 3 MA's), (74, 36474), (102, 36318), (118, 36261), (127, 36201), (128, 36198), (141, 36141), (169, 35985), (179, 35907), (182, 35895), (203, 35841), (209, 35808), (210, 35796), (212, 35778), (213, 35772), (214, 35769), (223, 35730), (272, 35604), (283, 35559), (290, 35517), (311, 35379), (326, 35292), (331, 35265), (344, 35205), (346, 35196), (361, 35100), (363, 35091), (393, 34938), (399, 34908), (402, 34899), (432, 34782),

Gene: Vanseggelen\_52 Start: 32956, Stop: 35067, Start Num: 45

Candidate Starts for Vanseggelen\_52:

(12, 32851), (13, 32857), (Start: 45 @32956 has 304 MA's), (Start: 73 @33067 has 3 MA's), (81, 33118), (82, 33124), (Start: 88 @33157 has 3 MA's), (Start: 97 @33208 has 1 MA's), (109, 33262), (116, 33292), (118, 33301), (132, 33379), (134, 33388), (135, 33400), (141, 33421), (142, 33424), (147, 33439), (161, 33538), (169, 33580), (179, 33658), (180, 33661), (203, 33766), (208, 33796), (209, 33799), (212, 33829), (269, 34003), (275, 34018), (279, 34030), (290, 34096), (302, 34189), (316, 34276), (329, 34342), (340, 34399), (348, 34432), (360, 34498), (363, 34525), (365, 34534), (388, 34651), (389, 34663), (392, 34687), (393, 34690), (404, 34738), (421, 34792), (426, 34810),

(436, 34858), (443, 34876), (449, 34888), (451, 34894), (462, 34936), (481, 35014),

Gene: Verabelle\_51 Start: 33521, Stop: 35584, Start Num: 45

Candidate Starts for Verabelle\_51:

(Start: 45 @33521 has 304 MA's), (61, 33560), (Start: 73 @33632 has 3 MA's), (81, 33683), (82, 33689), (Start: 88 @33722 has 3 MA's), (118, 33863), (119, 33878), (134, 33950), (141, 33983), (161, 34100), (169, 34142), (170, 34151), (179, 34220), (180, 34223), (184, 34244), (203, 34310), (208, 34340), (212, 34373), (275, 34535), (279, 34547), (307, 34736), (316, 34793), (340, 34916), (360, 35015), (363, 35042), (365, 35051), (378, 35138), (385, 35153), (388, 35168), (392, 35204), (393, 35207), (404, 35255), (421, 35309), (426, 35327), (432, 35357), (443, 35393), (449, 35405), (462, 35453), (463, 35456),

Gene: Veracruz\_49 Start: 35710, Stop: 33692, Start Num: 55

Candidate Starts for Veracruz\_49:

(Start: 55 @35710 has 95 MA's), (Start: 71 @35617 has 1 MA's), (Start: 73 @35608 has 3 MA's), (77, 35587), (92, 35518), (Start: 97 @35482 has 1 MA's), (102, 35449), (116, 35401), (118, 35392), (141, 35275), (157, 35179), (169, 35119), (176, 35050), (179, 35041), (182, 35029), (203, 34969), (208, 34939), (209, 34936), (210, 34924), (212, 34906), (213, 34900), (214, 34897), (235, 34792), (239, 34786), (279, 34729), (311, 34525), (321, 34465), (329, 34423), (333, 34405), (346, 34342), (357, 34279), (360, 34264), (363, 34237), (372, 34165), (393, 34078), (403, 34036), (428, 33943), (432, 33922), (465, 33808),

Gene: Verse\_47 Start: 34130, Stop: 36244, Start Num: 45

Candidate Starts for Verse\_47:

(8, 34004), (14, 34043), (16, 34049), (Start: 45 @34130 has 304 MA's), (61, 34172), (Start: 71 @34235 has 1 MA's), (Start: 73 @34244 has 3 MA's), (81, 34295), (82, 34301), (Start: 88 @34334 has 3 MA's), (109, 34439), (116, 34469), (118, 34478), (132, 34556), (134, 34565), (135, 34577), (141, 34598), (147, 34616), (161, 34715), (169, 34757), (170, 34766), (179, 34835), (180, 34838), (203, 34943), (208, 34973), (209, 34976), (212, 35006), (269, 35180), (275, 35195), (279, 35207), (290, 35273), (302, 35366), (316, 35453), (329, 35519), (340, 35576), (363, 35702), (365, 35711), (388, 35828), (389, 35840), (392, 35864), (393, 35867), (404, 35915), (421, 35969), (426, 35987), (432, 36017), (443, 36053), (449, 36065), (451, 36071), (462, 36113), (481, 36191),

Gene: Vix\_54 Start: 35989, Stop: 33971, Start Num: 55

Candidate Starts for Vix\_54:

(Start: 55 @35989 has 95 MA's), (Start: 71 @35896 has 1 MA's), (Start: 73 @35887 has 3 MA's), (78, 35863), (Start: 88 @35812 has 3 MA's), (Start: 97 @35761 has 1 MA's), (116, 35680), (118, 35671), (141, 35551), (154, 35491), (157, 35455), (169, 35395), (179, 35317), (203, 35245), (208, 35215), (212, 35182), (213, 35176), (214, 35173), (230, 35092), (239, 35062), (279, 35008), (304, 34837), (321, 34741), (329, 34699), (333, 34681), (343, 34633), (346, 34621), (356, 34564), (357, 34558), (360, 34543), (363, 34516), (370, 34453), (371, 34447), (377, 34423), (402, 34318), (421, 34249), (426, 34231), (428, 34222), (432, 34201), (459, 34123), (465, 34087), (481, 34024),

Gene: VohminGhazi\_53 Start: 34815, Stop: 32791, Start Num: 45

Candidate Starts for VohminGhazi\_53:

(32, 34848), (Start: 45 @34815 has 304 MA's), (Start: 88 @34629 has 3 MA's), (102, 34545), (116, 34497), (118, 34488), (127, 34428), (141, 34368), (153, 34311), (157, 34272), (165, 34239), (169, 34212), (170, 34203), (175, 34149), (179, 34134), (203, 34062), (208, 34032), (212, 33999), (213, 33993), (214, 33990), (283, 33798), (307, 33639), (311, 33618), (331, 33504), (344, 33444), (346, 33435), (354, 33390), (357, 33372), (361, 33339), (378, 33237), (380, 33231), (393, 33177), (398, 33150), (399, 33147), (402, 33138), (417, 33084), (432, 33021), (440, 32991), (451, 32964),

Gene: Waits\_56 Start: 34804, Stop: 32747, Start Num: 40

Candidate Starts for Waits\_56:

(Start: 40 @34804 has 21 MA's), (Start: 73 @34681 has 3 MA's), (87, 34609), (Start: 88 @34606 has 3 MA's), (116, 34474), (118, 34465), (141, 34345), (158, 34243), (170, 34180), (174, 34141), (179, 34111), (203, 34045), (208, 34015), (212, 33982), (213, 33976), (214, 33973), (270, 33805), (275, 33793), (283, 33757), (310, 33580), (311, 33577), (316, 33541), (337, 33436), (339, 33424), (356, 33337), (357, 33331), (363, 33289), (411, 33058), (432, 32977), (452, 32917), (459, 32899), (479, 32806), (482, 32788),

Gene: Wakanda\_16 Start: 7049, Stop: 8995, Start Num: 65

Candidate Starts for Wakanda\_16:

(Start: 65 @7049 has 26 MA's), (90, 7190), (Start: 103 @7265 has 3 MA's), (111, 7289), (114, 7301), (133, 7406), (159, 7547), (206, 7739), (213, 7799), (327, 8258), (332, 8282), (347, 8342), (381, 8531), (390, 8567), (412, 8669), (416, 8684), (423, 8708), (483, 8948),

Gene: WalterMcMickey\_47 Start: 35111, Stop: 33030, Start Num: 34

Candidate Starts for WalterMcMickey\_47:

(Start: 34 @35111 has 17 MA's), (44, 35090), (Start: 73 @34970 has 3 MA's), (74, 34967), (78, 34946), (Start: 97 @34844 has 1 MA's), (102, 34811), (116, 34763), (118, 34754), (127, 34697), (141, 34637), (146, 34622), (157, 34541), (169, 34481), (179, 34403), (182, 34391), (202, 34340), (203, 34331), (208, 34301), (212, 34268), (213, 34262), (214, 34259), (266, 34094), (272, 34076), (283, 34031), (290, 33989), (311, 33851), (329, 33749), (333, 33731), (343, 33680), (356, 33611), (357, 33605), (360, 33590), (363, 33563), (365, 33554), (371, 33494), (392, 33419), (393, 33416), (394, 33413), (403, 33374), (417, 33323), (419, 33317), (432, 33260), (465, 33146), (479, 33089),

Gene: Wander\_50 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for Wander\_50:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: Warpy\_47 Start: 19977, Stop: 21920, Start Num: 64

Candidate Starts for Warpy\_47:

(Start: 64 @19977 has 64 MA's), (Start: 67 @19983 has 1 MA's), (83, 20085), (86, 20106), (90, 20115), (106, 20205), (111, 20214), (112, 20223), (114, 20226), (133, 20331), (159, 20475), (198, 20640), (217, 20751), (235, 20841), (248, 20853), (306, 21066), (333, 21213), (336, 21231), (364, 21369), (366, 21387), (390, 21495), (430, 21666), (438, 21705), (468, 21804),

Gene: Warrior24\_59 Start: 35145, Stop: 33211, Start Num: 73

Candidate Starts for Warrior24\_59:

(Start: 40 @35268 has 21 MA's), (Start: 73 @35145 has 3 MA's), (87, 35073), (Start: 88 @35070 has 3 MA's), (116, 34938), (118, 34929), (141, 34809), (158, 34707), (170, 34644), (174, 34605), (179, 34575), (203, 34509), (208, 34479), (212, 34446), (213, 34440), (214, 34437), (270, 34269), (275, 34257), (283, 34221), (310, 34044), (311, 34041), (316, 34005), (337, 33900), (339, 33888), (356, 33801), (357, 33795), (363, 33753), (411, 33522), (432, 33441), (452, 33381), (459, 33363), (479, 33270), (482, 33252),

Gene: Watermoore\_42 Start: 19642, Stop: 21585, Start Num: 64

Candidate Starts for Watermoore\_42:



(Start: 53 @19597 has 2 MA's), (56, 19606), (Start: 64 @19642 has 64 MA's), (Start: 67 @19648 has 1 MA's), (83, 19750), (86, 19771), (90, 19780), (93, 19792), (106, 19870), (111, 19879), (112, 19888), (114, 19891), (133, 19996), (154, 20095), (198, 20305), (235, 20506), (248, 20518), (306, 20731), (324, 20836), (333, 20878), (336, 20896), (366, 21052), (390, 21160), (430, 21331), (438, 21370), (468, 21469),

Gene: Watson\_54 Start: 35898, Stop: 33880, Start Num: 55

Candidate Starts for Watson\_54:

(Start: 55 @35898 has 95 MA's), (Start: 71 @35805 has 1 MA's), (Start: 73 @35796 has 3 MA's), (78, 35772), (Start: 88 @35721 has 3 MA's), (Start: 97 @35670 has 1 MA's), (116, 35589), (118, 35580), (141, 35460), (154, 35400), (157, 35364), (169, 35304), (179, 35226), (203, 35154), (208, 35124), (212, 35091), (213, 35085), (214, 35082), (230, 35001), (239, 34971), (279, 34917), (304, 34746), (321, 34650), (329, 34608), (333, 34590), (343, 34542), (346, 34530), (356, 34473), (357, 34467), (360, 34452), (363, 34425), (370, 34362), (371, 34356), (377, 34332), (402, 34227), (421, 34158), (426, 34140), (428, 34131), (432, 34110), (459, 34032), (465, 33996), (481, 33933),

Gene: WeiHuaDA\_53 Start: 36646, Stop: 34613, Start Num: 45

Candidate Starts for WeiHuaDA\_53:

(Start: 45 @36646 has 304 MA's), (Start: 73 @36532 has 3 MA's), (74, 36529), (87, 36460), (Start: 88 @36457 has 3 MA's), (Start: 97 @36406 has 1 MA's), (102, 36373), (116, 36325), (118, 36316), (127, 36256), (141, 36196), (169, 36040), (170, 36031), (179, 35962), (203, 35896), (208, 35866), (209, 35863), (212, 35833), (213, 35827), (214, 35824), (272, 35665), (283, 35620), (290, 35578), (311, 35440), (316, 35404), (329, 35338), (331, 35326), (344, 35266), (357, 35194), (377, 35062), (380, 35053), (393, 34999), (402, 34960), (417, 34906), (432, 34843), (447, 34795), (451, 34786),

Gene: Werner\_47 Start: 32002, Stop: 34092, Start Num: 45

Candidate Starts for Werner\_47:

(Start: 45 @32002 has 304 MA's), (Start: 73 @32119 has 3 MA's), (79, 32158), (82, 32179), (Start: 88 @32212 has 3 MA's), (Start: 97 @32263 has 1 MA's), (116, 32344), (118, 32353), (132, 32431), (141, 32473), (154, 32533), (156, 32566), (161, 32590), (169, 32632), (170, 32641), (179, 32710), (180, 32713), (203, 32800), (212, 32863), (214, 32872), (225, 32923), (242, 32992), (275, 33037), (279, 33049), (297, 33181), (311, 33259), (313, 33274), (316, 33295), (326, 33346), (357, 33505), (358, 33511), (360, 33520), (365, 33556), (371, 33616), (378, 33643), (384, 33655), (385, 33658), (392, 33709), (394, 33715), (411, 33781), (421, 33814), (426, 33832), (432, 33862), (434, 33874), (443, 33901), (462, 33961), (479, 34033),

Gene: Westy\_21 Start: 8144, Stop: 10087, Start Num: 65

Candidate Starts for Westy\_21:

(62, 8135), (Start: 65 @8144 has 26 MA's), (90, 8282), (111, 8381), (114, 8393), (133, 8498), (244, 9011), (289, 9125), (305, 9227), (327, 9350), (332, 9374), (351, 9446), (366, 9551), (370, 9593), (381, 9623), (390, 9659), (393, 9680), (405, 9731), (412, 9761), (427, 9812), (468, 9968), (476, 10010),

Gene: Whabigail7\_52 Start: 36124, Stop: 34085, Start Num: 45

Candidate Starts for Whabigail7\_52:

(Start: 45 @36124 has 304 MA's), (Start: 97 @35884 has 1 MA's), (118, 35794), (119, 35779), (141, 35674), (169, 35518), (179, 35440), (203, 35368), (208, 35338), (209, 35335), (210, 35323), (212, 35305), (213, 35299), (214, 35296), (272, 35137), (283, 35092), (290, 35050), (311, 34912), (316, 34876), (329, 34810), (331, 34798), (344, 34738), (354, 34684), (357, 34666), (402, 34432), (403, 34429), (417, 34378), (432, 34315), (447, 34267), (451, 34258), (484, 34117),

Gene: Whatever\_47 Start: 32002, Stop: 34092, Start Num: 45

Candidate Starts for Whatever\_47:

(15, 31921), (Start: 45 @32002 has 304 MA's), (61, 32047), (79, 32158), (82, 32179), (Start: 88 @32212 has 3 MA's), (90, 32218), (Start: 97 @32263 has 1 MA's), (116, 32344), (118, 32353), (132, 32431), (141, 32473), (154, 32533), (156, 32566), (161, 32590), (169, 32632), (170, 32641), (179, 32710), (180, 32713), (203, 32800), (212, 32863), (214, 32872), (225, 32923), (242, 32992), (275, 33037), (279, 33049), (280, 33052), (297, 33181), (307, 33238), (311, 33259), (313, 33274), (316, 33295), (326, 33346), (334, 33382), (335, 33388), (346, 33442), (357, 33505), (358, 33511), (365, 33556), (371, 33616), (378, 33643), (384, 33655), (392, 33709), (394, 33715), (404, 33760), (411, 33781), (421, 33814), (426, 33832), (432, 33862), (434, 33874), (443, 33901), (462, 33961), (479, 34033),

Gene: WhereRU\_39 Start: 17983, Stop: 19926, Start Num: 64

Candidate Starts for WhereRU\_39:

(Start: 64 @17983 has 64 MA's), (Start: 67 @17989 has 1 MA's), (83, 18091), (86, 18112), (90, 18121), (106, 18211), (111, 18220), (112, 18229), (114, 18232), (133, 18337), (198, 18646), (217, 18757), (235, 18847), (248, 18859), (306, 19072), (333, 19219), (349, 19282), (366, 19393), (390, 19501), (430, 19672), (438, 19711), (468, 19810),

Gene: WideWale\_52 Start: 35992, Stop: 33956, Start Num: 45

Candidate Starts for WideWale\_52:

(Start: 45 @35992 has 304 MA's), (61, 35953), (Start: 73 @35881 has 3 MA's), (Start: 88 @35806 has 3 MA's), (Start: 97 @35755 has 1 MA's), (102, 35722), (118, 35665), (127, 35605), (134, 35578), (141, 35545), (169, 35389), (179, 35311), (182, 35299), (198, 35257), (203, 35239), (208, 35209), (209, 35206), (210, 35194), (212, 35176), (213, 35170), (214, 35167), (272, 35008), (283, 34963), (290, 34921), (311, 34783), (316, 34747), (329, 34681), (331, 34669), (354, 34555), (357, 34537), (365, 34486), (377, 34405), (380, 34396), (393, 34342), (399, 34312), (402, 34303), (417, 34249), (432, 34186), (447, 34138), (451, 34129),

Gene: Wiks\_53 Start: 34908, Stop: 32854, Start Num: 45

Candidate Starts for Wiks\_53:

(Start: 45 @34908 has 304 MA's), (Start: 88 @34722 has 3 MA's), (Start: 97 @34671 has 1 MA's), (102, 34638), (116, 34590), (118, 34581), (127, 34521), (141, 34461), (153, 34404), (157, 34365), (165, 34332), (169, 34305), (170, 34296), (175, 34242), (179, 34227), (203, 34155), (208, 34125), (212, 34092), (213, 34086), (214, 34083), (232, 33996), (250, 33942), (270, 33909), (283, 33861), (290, 33819), (311, 33681), (331, 33567), (344, 33507), (346, 33498), (354, 33453), (357, 33435), (361, 33402), (378, 33300), (380, 33294), (393, 33240), (398, 33213), (402, 33201), (417, 33147), (432, 33084), (440, 33054), (451, 33027), (461, 32988),

Gene: Wilbur\_50 Start: 35445, Stop: 33412, Start Num: 49

Candidate Starts for Wilbur\_50:

(Start: 49 @35445 has 219 MA's), (68, 35382), (Start: 73 @35334 has 3 MA's), (78, 35310), (92, 35244), (Start: 97 @35208 has 1 MA's), (102, 35175), (116, 35127), (118, 35118), (127, 35061), (134, 35034), (141, 35001), (169, 34845), (170, 34836), (179, 34767), (203, 34695), (208, 34665), (209, 34662), (212, 34632), (213, 34626), (214, 34623), (232, 34536), (244, 34506), (255, 34494), (261, 34485), (279, 34437), (311, 34233), (329, 34131), (333, 34113), (360, 33972), (363, 33945), (392, 33801), (393, 33798), (399, 33768), (417, 33705), (426, 33672), (428, 33663), (432, 33642), (447, 33594), (465, 33528),

Gene: Wile\_49 Start: 35440, Stop: 33422, Start Num: 49

Candidate Starts for Wile\_49:

(Start: 49 @35440 has 219 MA's), (Start: 73 @35329 has 3 MA's), (92, 35239), (Start: 97 @35203 has 1 MA's), (102, 35170), (116, 35122), (118, 35113), (127, 35053), (141, 34993), (169, 34837), (170, 34828), (179, 34759), (182, 34747), (201, 34696), (203, 34687), (208, 34657), (209, 34654), (212, 34624), (213, 34618), (214, 34615), (248, 34495), (270, 34471), (279, 34447), (311, 34243), (329,

34141), (333, 34123), (343, 34072), (356, 34003), (360, 33982), (363, 33955), (392, 33811), (393, 33808), (399, 33778), (411, 33733), (426, 33682), (428, 33673), (432, 33652), (465, 33538), (479, 33481),

Gene: Wipeout\_42 Start: 19287, Stop: 21227, Start Num: 64

Candidate Starts for Wipeout\_42:

(Start: 64 @19287 has 64 MA's), (90, 19419), (96, 19455), (102, 19491), (111, 19518), (114, 19530), (133, 19635), (148, 19692), (185, 19917), (206, 19971), (217, 20055), (228, 20106), (235, 20145), (248, 20157), (285, 20235), (297, 20334), (306, 20370), (333, 20517), (366, 20691), (369, 20727), (389, 20796), (390, 20799), (430, 20970), (468, 21108),

Gene: Wizard007\_50 Start: 35453, Stop: 33420, Start Num: 49

Candidate Starts for Wizard007\_50:

(Start: 49 @35453 has 219 MA's), (68, 35390), (Start: 73 @35342 has 3 MA's), (78, 35318), (92, 35252), (Start: 97 @35216 has 1 MA's), (102, 35183), (116, 35135), (118, 35126), (127, 35069), (134, 35042), (141, 35009), (169, 34853), (170, 34844), (179, 34775), (203, 34703), (208, 34673), (209, 34670), (212, 34640), (213, 34634), (214, 34631), (232, 34544), (244, 34514), (255, 34502), (261, 34493), (279, 34445), (311, 34241), (329, 34139), (333, 34121), (360, 33980), (363, 33953), (392, 33809), (393, 33806), (399, 33776), (417, 33713), (426, 33680), (428, 33671), (432, 33650), (447, 33602), (465, 33536),

Gene: Wofford\_43 Start: 19909, Stop: 21852, Start Num: 64

Candidate Starts for Wofford\_43:

(Start: 53 @19867 has 2 MA's), (57, 19879), (58, 19885), (Start: 64 @19909 has 64 MA's), (66, 19912), (90, 20044), (102, 20116), (111, 20143), (114, 20155), (133, 20260), (148, 20317), (151, 20350), (217, 20680), (228, 20731), (235, 20770), (248, 20782), (297, 20959), (306, 20995), (333, 21142), (366, 21316), (390, 21424), (400, 21481), (412, 21526), (430, 21595), (431, 21601), (438, 21634), (468, 21733),

Gene: Wooldri\_56 Start: 35818, Stop: 33800, Start Num: 55

Candidate Starts for Wooldri\_56:

(Start: 55 @35818 has 95 MA's), (Start: 71 @35725 has 1 MA's), (Start: 73 @35716 has 3 MA's), (78, 35692), (Start: 88 @35641 has 3 MA's), (Start: 97 @35590 has 1 MA's), (116, 35509), (118, 35500), (141, 35380), (154, 35320), (157, 35284), (169, 35224), (179, 35146), (203, 35074), (208, 35044), (212, 35011), (213, 35005), (214, 35002), (230, 34921), (239, 34891), (279, 34837), (304, 34666), (321, 34570), (329, 34528), (333, 34510), (343, 34462), (346, 34450), (356, 34393), (357, 34387), (360, 34372), (363, 34345), (370, 34282), (371, 34276), (377, 34252), (402, 34147), (421, 34078), (426, 34060), (428, 34051), (432, 34030), (459, 33952), (465, 33916), (481, 33853),

Gene: WunderPhul\_54 Start: 34906, Stop: 32852, Start Num: 45

Candidate Starts for WunderPhul\_54:

(Start: 45 @34906 has 304 MA's), (Start: 88 @34720 has 3 MA's), (Start: 97 @34669 has 1 MA's), (102, 34636), (116, 34588), (118, 34579), (127, 34519), (141, 34459), (153, 34402), (157, 34363), (165, 34330), (169, 34303), (170, 34294), (175, 34240), (179, 34225), (203, 34153), (208, 34123), (212, 34090), (213, 34084), (214, 34081), (232, 33994), (250, 33940), (270, 33907), (283, 33859), (290, 33817), (311, 33679), (331, 33565), (344, 33505), (346, 33496), (354, 33451), (357, 33433), (361, 33400), (378, 33298), (380, 33292), (393, 33238), (398, 33211), (402, 33199), (417, 33145), (432, 33082), (440, 33052), (451, 33025), (461, 32986),

Gene: Xena\_48 Start: 35406, Stop: 33388, Start Num: 49

Candidate Starts for Xena\_48:

(Start: 49 @35406 has 219 MA's), (Start: 73 @35295 has 3 MA's), (92, 35205), (Start: 97 @35169 has 1 MA's), (102, 35136), (116, 35088), (118, 35079), (127, 35019), (141, 34959), (169, 34803), (170,

34794), (179, 34725), (182, 34713), (201, 34662), (203, 34653), (208, 34623), (209, 34620), (212, 34590), (213, 34584), (214, 34581), (248, 34461), (270, 34437), (279, 34413), (311, 34209), (329, 34107), (333, 34089), (343, 34038), (356, 33969), (360, 33948), (363, 33921), (392, 33777), (393, 33774), (399, 33744), (411, 33699), (426, 33648), (428, 33639), (432, 33618), (465, 33504), (479, 33447),

Gene: XianYue\_50 Start: 35502, Stop: 33442, Start Num: 45

Candidate Starts for XianYue\_50:

(Start: 45 @35502 has 304 MA's), (61, 35460), (Start: 73 @35388 has 3 MA's), (Start: 88 @35313 has 3 MA's), (Start: 97 @35262 has 1 MA's), (102, 35229), (116, 35181), (118, 35172), (127, 35112), (141, 35052), (169, 34896), (179, 34818), (192, 34782), (203, 34752), (208, 34722), (209, 34719), (210, 34707), (212, 34689), (213, 34683), (214, 34680), (270, 34497), (283, 34449), (290, 34407), (311, 34269), (316, 34233), (321, 34209), (329, 34167), (331, 34155), (344, 34095), (346, 34086), (357, 34023), (361, 33990), (377, 33891), (380, 33882), (393, 33828), (417, 33735), (432, 33672), (447, 33624), (451, 33615), (484, 33474),

Gene: Yaboi\_45 Start: 19457, Stop: 21397, Start Num: 64

Candidate Starts for Yaboi\_45:

(Start: 64 @19457 has 64 MA's), (90, 19589), (96, 19625), (101, 19649), (102, 19661), (111, 19688), (114, 19700), (133, 19805), (144, 19847), (151, 19895), (207, 20159), (211, 20192), (217, 20225), (228, 20276), (230, 20291), (235, 20315), (248, 20327), (285, 20405), (297, 20504), (305, 20537), (306, 20540), (327, 20660), (333, 20687), (336, 20705), (366, 20861), (389, 20966), (390, 20969), (430, 21140), (438, 21179), (468, 21278),

Gene: Yasdnii\_47 Start: 32062, Stop: 34152, Start Num: 45

Candidate Starts for Yasdnii\_47:

(27, 32020), (30, 32026), (Start: 45 @32062 has 304 MA's), (Start: 73 @32179 has 3 MA's), (79, 32218), (82, 32239), (Start: 88 @32272 has 3 MA's), (Start: 97 @32323 has 1 MA's), (116, 32404), (118, 32413), (132, 32491), (141, 32533), (154, 32593), (156, 32626), (161, 32650), (169, 32692), (179, 32770), (180, 32773), (203, 32860), (212, 32923), (214, 32932), (225, 32983), (242, 33052), (275, 33097), (279, 33109), (297, 33241), (311, 33319), (313, 33334), (316, 33355), (326, 33406), (357, 33565), (358, 33571), (360, 33580), (365, 33616), (371, 33676), (378, 33703), (384, 33715), (385, 33718), (392, 33769), (394, 33775), (411, 33841), (421, 33874), (426, 33892), (432, 33922), (434, 33934), (443, 33961), (462, 34021), (479, 34093),

Gene: Yecey3\_52 Start: 35247, Stop: 33208, Start Num: 45

Candidate Starts for Yecey3\_52:

(Start: 45 @35247 has 304 MA's), (Start: 71 @35142 has 1 MA's), (Start: 73 @35133 has 3 MA's), (118, 34917), (127, 34857), (141, 34797), (168, 34650), (169, 34641), (179, 34563), (203, 34497), (210, 34452), (212, 34434), (213, 34428), (214, 34425), (270, 34263), (272, 34260), (283, 34215), (311, 34035), (316, 33999), (344, 33861), (346, 33852), (354, 33807), (361, 33756), (363, 33747), (393, 33594), (402, 33555), (417, 33501), (421, 33486), (432, 33438),

Gene: YoSam321\_50 Start: 35442, Stop: 33409, Start Num: 49

Candidate Starts for YoSam321\_50:

(Start: 49 @35442 has 219 MA's), (68, 35379), (Start: 73 @35331 has 3 MA's), (78, 35307), (92, 35241), (Start: 97 @35205 has 1 MA's), (102, 35172), (116, 35124), (118, 35115), (127, 35058), (141, 34998), (169, 34842), (170, 34833), (179, 34764), (203, 34692), (208, 34662), (209, 34659), (212, 34629), (213, 34623), (214, 34620), (232, 34533), (244, 34503), (255, 34491), (261, 34482), (279, 34434), (311, 34230), (329, 34128), (333, 34110), (360, 33969), (363, 33942), (392, 33798), (393, 33795), (399, 33765), (417, 33702), (426, 33669), (428, 33660), (432, 33639), (447, 33591), (465, 33525),

Gene: Yogi\_40 Start: 32048, Stop: 30003, Start Num: 45

Candidate Starts for Yogi\_40:

(Start: 45 @32048 has 304 MA's), (74, 31928), (87, 31859), (Start: 97 @31805 has 1 MA's), (116, 31724), (118, 31715), (127, 31655), (154, 31535), (156, 31502), (157, 31499), (159, 31490), (164, 31469), (168, 31448), (169, 31439), (175, 31376), (179, 31361), (181, 31355), (203, 31295), (209, 31262), (212, 31232), (213, 31226), (214, 31223), (252, 31088), (301, 30893), (304, 30875), (326, 30752), (328, 30743), (354, 30611), (363, 30551), (372, 30479), (385, 30440), (387, 30437), (388, 30425), (393, 30392), (402, 30353), (421, 30281), (428, 30254), (432, 30233), (436, 30215), (459, 30155), (465, 30119),

Gene: Yokurt\_54 Start: 34908, Stop: 32854, Start Num: 45

Candidate Starts for Yokurt\_54:

(Start: 45 @34908 has 304 MA's), (Start: 88 @34722 has 3 MA's), (Start: 97 @34671 has 1 MA's), (102, 34638), (116, 34590), (118, 34581), (127, 34521), (141, 34461), (153, 34404), (157, 34365), (165, 34332), (169, 34305), (170, 34296), (175, 34242), (179, 34227), (203, 34155), (208, 34125), (212, 34092), (213, 34086), (214, 34083), (232, 33996), (250, 33942), (270, 33909), (283, 33861), (290, 33819), (311, 33681), (331, 33567), (344, 33507), (346, 33498), (354, 33453), (357, 33435), (361, 33402), (378, 33300), (380, 33294), (393, 33240), (398, 33213), (402, 33201), (417, 33147), (432, 33084), (440, 33054), (451, 33027), (461, 32988),

Gene: Yoncess\_40 Start: 31828, Stop: 29783, Start Num: 45

Candidate Starts for Yoncess\_40:

(Start: 45 @31828 has 304 MA's), (74, 31708), (87, 31639), (Start: 97 @31585 has 1 MA's), (116, 31504), (118, 31495), (127, 31435), (154, 31315), (156, 31282), (157, 31279), (159, 31270), (164, 31249), (169, 31219), (175, 31156), (179, 31141), (181, 31135), (203, 31075), (209, 31042), (212, 31012), (213, 31006), (214, 31003), (252, 30868), (301, 30673), (304, 30655), (326, 30532), (328, 30523), (354, 30391), (363, 30331), (372, 30259), (385, 30220), (387, 30217), (388, 30205), (393, 30172), (402, 30133), (421, 30061), (428, 30034), (432, 30013), (436, 29995), (459, 29935), (465, 29899),

Gene: Yosif\_50 Start: 34061, Stop: 36223, Start Num: 26

Candidate Starts for Yosif\_50:

(23, 34055), (Start: 26 @34061 has 1 MA's), (Start: 71 @34217 has 1 MA's), (Start: 73 @34226 has 3 MA's), (81, 34277), (82, 34283), (Start: 88 @34316 has 3 MA's), (116, 34448), (118, 34457), (134, 34544), (135, 34556), (141, 34577), (161, 34694), (169, 34736), (179, 34814), (180, 34817), (203, 34922), (212, 34985), (275, 35174), (279, 35186), (307, 35375), (311, 35396), (313, 35411), (340, 35555), (347, 35585), (357, 35639), (358, 35645), (363, 35681), (365, 35690), (388, 35807), (389, 35819), (392, 35843), (393, 35846), (404, 35894), (421, 35948), (426, 35966), (432, 35996), (449, 36044), (451, 36050), (462, 36092),

Gene: Zainub\_50 Start: 33415, Stop: 35529, Start Num: 45

Candidate Starts for Zainub\_50:

(Start: 45 @33415 has 304 MA's), (82, 33583), (Start: 88 @33616 has 3 MA's), (Start: 97 @33667 has 1 MA's), (116, 33748), (118, 33757), (129, 33826), (134, 33844), (135, 33856), (141, 33877), (161, 33994), (169, 34036), (170, 34045), (179, 34114), (203, 34222), (212, 34285), (260, 34450), (269, 34459), (279, 34486), (311, 34696), (316, 34732), (321, 34756), (323, 34759), (329, 34798), (357, 34942), (360, 34957), (365, 34993), (371, 35053), (375, 35071), (378, 35080), (384, 35092), (388, 35110), (389, 35122), (392, 35146), (397, 35167), (421, 35251), (426, 35269), (434, 35311), (453, 35362), (462, 35398), (478, 35467), (485, 35521),

Gene: Zaka\_54 Start: 34908, Stop: 32854, Start Num: 45

Candidate Starts for Zaka\_54:

(Start: 45 @34908 has 304 MA's), (Start: 88 @34722 has 3 MA's), (Start: 97 @34671 has 1 MA's), (102, 34638), (116, 34590), (118, 34581), (127, 34521), (141, 34461), (153, 34404), (157, 34365), (165, 34332), (169, 34305), (170, 34296), (175, 34242), (179, 34227), (203, 34155), (208, 34125), (212, 34092), (213, 34086), (214, 34083), (232, 33996), (250, 33942), (270, 33909), (283, 33861), (290, 33819), (311, 33681), (331, 33567), (344, 33507), (346, 33498), (354, 33453), (357, 33435), (361, 33402), (378, 33300), (380, 33294), (393, 33240), (398, 33213), (402, 33201), (417, 33147), (432, 33084), (440, 33054), (451, 33027), (461, 32988),

Gene: Zemlya\_49 Start: 32513, Stop: 34603, Start Num: 45

Candidate Starts for Zemlya\_49:

(27, 32471), (30, 32477), (Start: 45 @32513 has 304 MA's), (61, 32558), (79, 32669), (Start: 88 @32723 has 3 MA's), (90, 32729), (Start: 97 @32774 has 1 MA's), (116, 32855), (118, 32864), (132, 32942), (134, 32951), (141, 32984), (154, 33044), (156, 33077), (161, 33101), (169, 33143), (179, 33221), (180, 33224), (195, 33281), (203, 33311), (212, 33374), (214, 33383), (225, 33434), (242, 33503), (275, 33548), (279, 33560), (297, 33692), (307, 33749), (311, 33770), (316, 33806), (326, 33857), (334, 33893), (346, 33953), (348, 33965), (357, 34016), (358, 34022), (360, 34031), (365, 34067), (369, 34115), (371, 34127), (378, 34154), (384, 34166), (385, 34169), (392, 34220), (394, 34226), (404, 34271), (410, 34289), (411, 34292), (421, 34325), (426, 34343), (432, 34373), (434, 34385), (443, 34412), (462, 34472), (479, 34544), (485, 34595),

Gene: Zetzy\_53 Start: 35469, Stop: 33451, Start Num: 55

Candidate Starts for Zetzy\_53:

(Start: 55 @35469 has 95 MA's), (Start: 71 @35376 has 1 MA's), (Start: 73 @35367 has 3 MA's), (78, 35343), (Start: 88 @35292 has 3 MA's), (Start: 97 @35241 has 1 MA's), (116, 35160), (118, 35151), (141, 35031), (154, 34971), (157, 34935), (169, 34875), (179, 34797), (182, 34785), (203, 34725), (208, 34695), (212, 34662), (213, 34656), (214, 34653), (230, 34572), (239, 34542), (279, 34488), (304, 34317), (321, 34221), (329, 34179), (333, 34161), (356, 34044), (357, 34038), (360, 34023), (363, 33996), (370, 33933), (371, 33927), (377, 33903), (402, 33798), (421, 33729), (426, 33711), (428, 33702), (432, 33681), (459, 33603), (465, 33567), (481, 33504),

Gene: Zimmer\_48 Start: 36416, Stop: 34377, Start Num: 45

Candidate Starts for Zimmer\_48:

(Start: 45 @36416 has 304 MA's), (Start: 71 @36311 has 1 MA's), (Start: 73 @36302 has 3 MA's), (102, 36143), (118, 36086), (119, 36071), (127, 36026), (128, 36023), (141, 35966), (144, 35957), (169, 35810), (178, 35735), (179, 35732), (182, 35720), (185, 35711), (203, 35666), (209, 35633), (212, 35603), (213, 35597), (214, 35594), (264, 35456), (272, 35429), (280, 35405), (283, 35384), (290, 35342), (308, 35222), (311, 35204), (321, 35144), (329, 35102), (333, 35084), (346, 35021), (357, 34958), (361, 34925), (369, 34859), (382, 34814), (393, 34763), (394, 34760), (410, 34691), (417, 34670), (432, 34607), (459, 34529),

Gene: Zolita\_44 Start: 35177, Stop: 33114, Start Num: 51

Candidate Starts for Zolita\_44:

(Start: 49 @35180 has 219 MA's), (Start: 51 @35177 has 3 MA's), (74, 35066), (Start: 88 @34994 has 3 MA's), (100, 34925), (116, 34862), (118, 34853), (141, 34733), (146, 34718), (164, 34607), (168, 34586), (169, 34577), (170, 34568), (179, 34499), (182, 34487), (200, 34406), (203, 34388), (208, 34358), (209, 34355), (212, 34325), (213, 34319), (214, 34316), (232, 34229), (243, 34199), (258, 34175), (283, 34127), (308, 33965), (313, 33932), (322, 33884), (329, 33845), (343, 33776), (354, 33719), (356, 33707), (357, 33701), (363, 33659), (365, 33650), (392, 33503), (399, 33470), (410, 33428), (421, 33392), (426, 33374), (428, 33365), (482, 33155),

Gene: Zulu\_55 Start: 35286, Stop: 33232, Start Num: 45

Candidate Starts for Zulu\_55:

(Start: 45 @35286 has 304 MA's), (Start: 88 @35100 has 3 MA's), (Start: 97 @35049 has 1 MA's), (102, 35016), (116, 34968), (118, 34959), (127, 34899), (141, 34839), (153, 34782), (157, 34743), (165, 34710), (169, 34683), (170, 34674), (175, 34620), (179, 34605), (203, 34533), (208, 34503), (212, 34470), (213, 34464), (214, 34461), (232, 34374), (250, 34320), (270, 34287), (283, 34239), (290, 34197), (311, 34059), (331, 33945), (344, 33885), (346, 33876), (354, 33831), (357, 33813), (361, 33780), (378, 33678), (380, 33672), (393, 33618), (398, 33591), (402, 33579), (417, 33525), (432, 33462), (440, 33432), (451, 33405), (461, 33366),

Gene: phiCAM\_45 Start: 35519, Stop: 37381, Start Num: 88

Candidate Starts for phiCAM\_45:

(19, 35240), (30, 35282), (Start: 45 @35318 has 304 MA's), (Start: 73 @35429 has 3 MA's), (81, 35480), (82, 35486), (Start: 88 @35519 has 3 MA's), (Start: 97 @35570 has 1 MA's), (118, 35660), (119, 35675), (132, 35738), (134, 35747), (141, 35780), (161, 35897), (169, 35939), (170, 35948), (179, 36017), (180, 36020), (184, 36041), (203, 36107), (208, 36137), (212, 36170), (275, 36332), (279, 36344), (290, 36410), (307, 36533), (316, 36590), (340, 36713), (347, 36743), (363, 36839), (365, 36848), (388, 36965), (392, 37001), (393, 37004), (404, 37052), (421, 37106), (426, 37124), (432, 37154), (436, 37172), (443, 37190), (449, 37202), (462, 37250), (485, 37373),

Gene: phiHau3\_48 Start: 31684, Stop: 33753, Start Num: 45

Candidate Starts for phiHau3\_48:

(Start: 45 @31684 has 304 MA's), (Start: 88 @31891 has 3 MA's), (Start: 97 @31942 has 1 MA's), (118, 32035), (134, 32122), (135, 32134), (141, 32155), (157, 32251), (161, 32272), (179, 32392), (180, 32395), (186, 32425), (203, 32464), (208, 32494), (210, 32509), (212, 32527), (229, 32611), (270, 32689), (279, 32713), (294, 32833), (297, 32845), (306, 32893), (311, 32923), (316, 32959), (323, 32986), (326, 33010), (360, 33184), (363, 33211), (371, 33280), (375, 33298), (384, 33319), (393, 33376), (394, 33379), (404, 33424), (426, 33496), (432, 33526), (447, 33571), (449, 33574), (462, 33622), (478, 33691), (485, 33745),