









Pham 189333

I51: Gustav_35	79	84	88	91	101	111	121	131	141	147	153	163	169	171	188	194	206	216	219	223	230	240	270	286
I52: Upyo_33	79	88	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I53: Puppets_33	79	88	92	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I54: Morrissey_35	79	88	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I55: Widow_34	79	81	91	101	111	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I56: Irine_32	79	84	87	101	111	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I57: Mandia_34	79	84	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I58: Sour_50	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I59: MossRose_48	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I60: MakoiManhole_48 + 1	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I61: Caib_49	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I62: Coldpizza_47	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I63: Evaa_45	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I64: NHagos_47	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I65: Sisko_45 + 2	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I66: CloverMinnie_48	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I67: Ligma_46 + 3	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I68: Mariokart_46	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I69: LittleMunchkin_47	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I70: BiggityBass_45	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I71: Woooper_49	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I72: CharlottesWeb_45	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I73: BobRoss2024_45	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I74: Gengar_64 + 5	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I75: Rand014_67	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I76: Psycho_64 + 4	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I77: Miryou_68 + 2	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I78: Krato_62	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I79: Collard_62 + 2	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I80: Feyre_67	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I81: Waterfoul_66	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I82: Omnicron_68	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I83: Bollgate_67	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I84: StAugustine_72	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I85: BFK20_URF41	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I86: EmiRose_31	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I87: Pines_45	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	
I88: TPA2_58	79	81	96	101	110	121	131	141	141	153	163	169	171	188	194	206	216	219	223	230	240	270	286	

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 189333 Report

This analysis was run 11/02/24 on database version 579.

Pham number 189333 has 498 members, 50 are drafts.

Phages represented in each track:

- Track 1 : Mikota\_52, Suffolk\_52, Soto\_52, Lulwa\_52, Antonia\_52, MiniBoss\_52, Aelin\_52, SDcharge11\_53, Schadenfreude\_52, Sheila\_52, KingVeVeVe\_52, Chunky\_52
- Track 2 : JakeO\_51, Jiminy\_51, Skippy\_52, YouGoGlencoco\_52, Cosmolli16\_52, Cornobble\_51, Maru\_51, Keitherie\_52, Bishoperium\_51, Wallhey\_51, Slatt\_52, Durga\_53, Vaticameos\_48, Soile\_52, Emiris\_53, Veritas\_51, Roliet\_52, Tomlarah\_52
- Track 3 : HighStump\_52, Hartsy\_52, Piglet\_0052, Grand2040\_51, Windsor\_51, Kahve\_51, Coletti\_51, LeiMonet\_53, ImtiyazSitla\_52, Eugenia\_52, CharlieGBrown\_51, Maskar\_52, Phergie\_52, Labeouficaum\_51, Phleuron\_51, Derpp\_51, BatteryCK\_51, Virgeve\_51, DuchessDung\_51, Melc17\_52, Virapocalypse\_52, Hocus\_51, Burr\_51, Magic8\_52, Serpentine\_0052, MichaelPhcott\_51, Mulan\_52, Nacho\_0053, PhenghisKhan\_51, JangoPhett\_52, KingTut\_43, PhrankReynolds\_50, Inchworm\_53, Kailash\_52, Gareth\_51, Giraffe\_52, Oline\_51, AltPhacts\_53, Waterdiva\_52, Andre\_53, Chute\_51, Ashraf\_52, Duggie\_51, LasagnaCat\_53, PinheadLarry\_52, MelsMeow\_52, Thunderbird\_51, CampRoach\_53, Lego3393\_51, TyrionL\_51, OSmaximus\_53, Lumine\_51, Mutante\_51, Craff\_53, Anderson\_52, LemonSlice\_52, GeneCoco\_52, Bluephacebaby\_51, Crownjwl\_53, Kwksand96\_51, PhrodoBaggins\_52, Placalicious\_51, Chaelin\_52, Cher\_51, Charles1\_52, Brilliant\_52, RedMaple\_52, Usavi\_52, Squiggle\_52, Iridoclysis\_52, Telesworld\_51, HenryJackson\_51, Simielle\_51, FugateOSU\_51, JDog\_51, Pinkman\_51, Gwilliam\_53
- Track 4 : Apizium\_52, Kloppinator\_53, Newman\_52, KlimbOn\_52, Mesh1\_53, Inverness\_52, EmpTee\_52
- Track 5 : Frankicide\_52, HSavage\_52, OliverWalter\_52
- Track 6 : Fozzie\_51, Altwerkus\_51, Roy17\_52, Dione\_51, CheetO\_52, Horchata\_52, DoesntMatter\_51, Riggan\_52, AbsoluteMadLad\_52, Phareon\_52, Freya\_51, LuckyMarjie\_51, Eremos\_52, Lulumae\_51, Phunky\_52, Plmatters\_52
- Track 7 : CamL\_52, Mosaic\_51, Sophia\_51, Serendipity\_52, TallGrassMM\_52, Squid\_52, Daffy\_52, Morgushi\_52, Solosis\_51, Timmi\_51, DaddyDaniels\_52, Lasso\_52, QueenBeane\_52, Mana\_51, Puhltonio\_52, Haleema\_51, TomBombadil\_52, Cannibal\_52, Kwadwo\_51, Samaymay\_52, SassyCat97\_51, Xavier\_51, Held\_52, Vortex\_52, Banjo\_51
- Track 8 : BlueHusk\_52, PhatLouie\_52, Mcshane\_51, Kikipoo\_53, Swiphy\_54, IsaacEli\_53
- Track 9 : Weher20\_52, Dati\_52, Doddsville\_52, Etaye\_52, Childish\_51
- Track 10 : MRabcd\_51, Legolas\_52, LostAndPhound\_51

- Track 11 : ThreeOh3D2\_53, Orwigg\_53, Toni\_51, DelRivs\_51, True\_51, Swish\_53, BlackStallion\_53, Phipps\_52, Quisquiliae\_52, Selr12\_52, Robyn\_51, Ricotta\_51, Olak\_51, Chah\_54, FriarPreacher\_51, Adriana\_53, Dice\_51, Pacifista\_51, Scoot17C\_53, Megamind20\_52, Megatron\_53, PhatCats2014\_53, Orfeu\_51, Nyala\_51, FluffyNinja\_53, Yoshand\_53
- Track 12 : Daka\_53, Prickles\_52
- Track 13 : ShiVal\_52, Spartan300\_52, Roscoe\_53, Oosterbaan\_52, Hertubise\_52, Podrick\_52, Thora\_52, Pops\_52
- Track 14 : Omniscient\_52, Mecca\_51, Kimbrough\_52
- Track 15 : Trypo\_53, Jiraiya\_54, Zonia\_52, Mag7\_51, Struggle\_51, PG1\_53
- Track 16 : Zaider\_53, Buckeye\_52, Murdoc\_52
- Track 17 : Fringe\_53, Pherdinand\_53, Jillium\_51, Scrick\_52, Orion\_53
- Track 18 : DirtJuice\_52
- Track 19 : Haimas\_52, Hamish\_52, UncleHowie\_52, Tooj\_52
- Track 20 : Carthage\_50
- Track 21 : Surely\_52, Zelda\_52
- Track 22 : Chorkpop\_52, MitKao\_52, Potter\_51
- Track 23 : Hetaeria\_52, UAch1\_52, Manad\_52, Matalotodo\_52, Harvey\_52, SilverBell\_52, DonSanchon\_51
- Track 24 : Pipsqueak\_52
- Track 25 : Morty\_53, Fang\_53, Nicole21\_52, Longacauda\_51, Sigman\_53, Badfish\_53, Beaglebox\_51, Phamished\_53, JacAttac\_53
- Track 26 : MrPhizzler\_51, Rimu\_54
- Track 27 : Vivaldi\_54
- Track 28 : ABU\_53
- Track 29 : Boehler\_52
- Track 30 : Vista\_52
- Track 31 : Olive\_52
- Track 32 : Schueller\_52
- Track 33 : KLucky39\_52, Gyarad\_0052
- Track 34 : Lopsy\_51, Dingo\_52
- Track 35 : ProfessorX\_52
- Track 36 : Gophee\_52
- Track 37 : Valjean\_52
- Track 38 : LeeLot\_52
- Track 39 : Basato\_53
- Track 40 : Katniss\_53
- Track 41 : Colbert\_52
- Track 42 : Cobra\_52
- Track 43 : Vaishali24\_51
- Track 44 : Numberten\_52
- Track 45 : Imvubu\_47
- Track 46 : Indlovu\_51
- Track 47 : LilMcDreamy\_50
- Track 48 : Zenteno07\_56
- Track 49 : Hashim76\_56
- Track 50 : BirdsNest\_55
- Track 51 : Bananafish\_51, Qyrzula\_48
- Track 52 : Calamitous\_51, Rhinoforte\_51
- Track 53 : MasterPo\_51, Lephleur\_51, Kaleb\_51, Phantasmagoria\_51, Faze9\_50, Allegro\_51, Ares\_51
- Track 54 : Holeinone\_51
- Track 55 : Blocker23\_51

- Track 56 : Coffee\_51
- Track 57 : FrenchFry\_51
- Track 58 : Laurie\_50, Vic9\_51
- Track 59 : ItsyBitsy1\_51
- Track 60 : Arbiter\_50, Kheth\_51
- Track 61 : Tinciduntolum\_52, Brownie5\_51, Rosebush\_50, Opia\_51, Hedgerow\_51, Tres\_51
- Track 62 : TA17A\_51
- Track 63 : West99\_51
- Track 64 : Lars\_51
- Track 65 : Godines\_51
- Track 66 : Sabella\_50
- Track 67 : Glass\_51
- Track 68 : Eaglehorse\_51
- Track 69 : Boyle\_51
- Track 70 : LizLemon\_51
- Track 71 : Gadjet\_53
- Track 72 : Devonte\_51, HarveySr\_51, RagingRooster\_51
- Track 73 : Deenasa\_51, Briakila\_52, LestyG\_51
- Track 74 : Pipefish\_54
- Track 75 : Phayeta\_54
- Track 76 : Abinghost\_52
- Track 77 : Neos5\_52
- Track 78 : Compostia\_52
- Track 79 : SynergyX\_52, Gervas\_53, Athena\_54, ChaChing\_52, Philly\_51, Heathcliff\_52, Halfpint\_51, Mortcellus\_52, Jackstina\_48, Rita1961\_53, Tydolla\_51, Obutu\_53
- Track 80 : Baloo\_52, Audrey\_52, RomaT\_52
- Track 81 : GlenHope\_53
- Track 82 : Kronus\_52, Ben11\_52, Casbah\_52
- Track 83 : Nozo\_52, OrangeOswald\_52, Akoma\_52, Chandler\_52
- Track 84 : Bernardo\_53
- Track 85 : Daisy\_52, Yinz\_52
- Track 86 : Corofin\_52
- Track 87 : Morty007\_52
- Track 88 : Marley1013\_52
- Track 89 : SlippinJimmy\_54
- Track 90 : Yahalom\_51, Phlyer\_52
- Track 91 : MmasiCarm\_53
- Track 92 : Kamiyu\_52
- Track 93 : Phaedrus\_49
- Track 94 : Prince\_47, Apex\_48, Lolalove\_48, Mudslide\_47
- Track 95 : JaguarMi\_49, Xincheng\_48
- Track 96 : Lambano\_46, ChrisnMich\_47, Epah\_46, Hally898\_46, Antihero\_46, Nanao\_46, GinPorsche\_46, Poster\_46
- Track 97 : Fortunato\_48, RawrgerThat\_48
- Track 98 : Heath\_46
- Track 99 : Hydro\_47
- Track 100 : JAMaL\_47
- Track 101 : Zemanar\_48
- Track 102 : Vincenzo\_49
- Track 103 : Nigel\_47
- Track 104 : BobbyK\_48

- Track 105 : Magpie\_46
- Track 106 : Austelle\_48
- Track 107 : Waleliano\_47
- Track 108 : BrownCNA\_49
- Track 109 : AlanGrant\_50
- Track 110 : Hangman\_47
- Track 111 : Ahwei\_46
- Track 112 : Frederick\_48
- Track 113 : Mithril\_47
- Track 114 : Fanaw\_46
- Track 115 : QueenPie\_46
- Track 116 : Stinger\_46
- Track 117 : Cooper\_48
- Track 118 : VioletZ\_49
- Track 119 : Nehemiah\_51
- Track 120 : StinkyVeggy\_52, KarasumaRum\_52
- Track 121 : Suigeneris\_53
- Track 122 : SirJeffery\_51
- Track 123 : Reprobate\_51, Phelemich\_50
- Track 124 : Acadian\_52
- Track 125 : Mysterious\_52
- Track 126 : Rich\_52
- Track 127 : Serendipitous\_51
- Track 128 : EastView9101\_51
- Track 129 : Bae\_53
- Track 130 : DigitDog\_52, Nangang\_52
- Track 131 : Shenyu\_52
- Track 132 : Donny\_53
- Track 133 : 39HC\_045, 40BC\_045
- Track 134 : KayaCho\_45
- Track 135 : Hosp\_044
- Track 136 : Jolie1\_046
- Track 137 : Saguaro\_54
- Track 138 : Thonko\_54
- Track 139 : Knocker\_54
- Track 140 : PenguinLover67\_53
- Track 141 : Quesadilla\_55
- Track 142 : Rinkes\_52
- Track 143 : CRB2\_54
- Track 144 : Funsized\_55
- Track 145 : Asis\_54, TP1604\_54, BabyGotBac\_55, Maih\_53, BayC\_54, Salete\_54
- Track 146 : Xkcd426\_57
- Track 147 : YDN12\_54
- Track 148 : Mischief19\_63
- Track 149 : Abt2graduatex2\_54
- Track 150 : RainyPolka\_53
- Track 151 : Gustav\_35
- Track 152 : Upyo\_33
- Track 153 : Puppies\_33
- Track 154 : Morrissey\_35
- Track 155 : Widow\_34
- Track 156 : Trine\_32
- Track 157 : Mahdia\_34



- Track 158 : Sour\_50
- Track 159 : MossRose\_48
- Track 160 : MakoManhole\_48, AnarQue\_48
- Track 161 : CaiB\_49
- Track 162 : Coldpizza\_47
- Track 163 : Evaa\_45
- Track 164 : NHagos\_47
- Track 165 : Sisko\_45, AnClar\_46, Yago84\_45
- Track 166 : CloverMinnie\_48
- Track 167 : Ligma\_46, Fresco\_46, Axumite\_46, Shatter\_46
- Track 168 : Mariokart\_46
- Track 169 : LittleMunchkin\_47
- Track 170 : BiggityBass\_45
- Track 171 : Wooper\_49
- Track 172 : CharlottesWeb\_45
- Track 173 : BobRoss2024\_45
- Track 174 : Gengar\_64, Paola\_64, Leston\_64, Guillsminger\_65, OkiRoe\_65, Thyatira\_67
- Track 175 : Rando14\_67
- Track 176 : Psycho\_64, Dadosky\_66, Edugator\_63, AlleyCat\_66, Larva\_65
- Track 177 : Miryou\_68, SoSeph\_65, Heftyboy\_65
- Track 178 : Kratio\_62
- Track 179 : Collard\_62, Agent47\_64, InvictusManeo\_62
- Track 180 : Feyre\_67
- Track 181 : Waterfoul\_66
- Track 182 : Omnicron\_68
- Track 183 : Boilgate\_67
- Track 184 : StAugustine\_72
- Track 185 : BFK20\_ORF41
- Track 186 : EmiRose\_31
- Track 187 : Pine5\_45
- Track 188 : TPA2\_58

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

The start number called the most often in the published annotations is 38, it was called in 111 of the 448 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Adriana\_53, AltPhacts\_53, Anderson\_52, Andre\_53, Ashraf\_52, Badfish\_53, BatteryCK\_51, Beaglebox\_51, BlackStallion\_53, BlueHusk\_52, Bluephacebaby\_51, Brilliant\_52, Burr\_51, CampRoach\_53, Chaelin\_52, Chah\_54, Charles1\_52, CharlieGBrown\_51, Cher\_51, Chute\_51, Coletti\_51, Craff\_53, Crownjwl\_53, DelRivs\_51, Derpp\_51, Dice\_51, DuchessDung\_51, Duggie\_51, Eugenia\_52, Fang\_53, FluffyNinja\_53, FriarPreacher\_51, FugateOSU\_51, Gareth\_51, GeneCoco\_52, Giraffe\_52, Grand2040\_51, Gwilliam\_53, Hartsy\_52, HenryJackson\_51, HighStump\_52, Hocus\_51, ImtiyazSitla\_52, Inchworm\_53, Iridoclysis\_52, IsaacEli\_53, JDog\_51, JacAttac\_53, JangoPhett\_52, Kahve\_51, Kailash\_52, Kikipoo\_53, KingTut\_43, Kwksand96\_51, Labeouficaum\_51, LasagnaCat\_53, Lego3393\_51, LeiMonet\_53, LemonSlice\_52, Longacauda\_51,

Lumine\_51, Magic8\_52, Maskar\_52, Mcshane\_51, Megamind20\_52, Megatron\_53, Melc17\_52, MelsMeow\_52, MichaelPhcott\_51, Morty\_53, Mulan\_52, Mutante\_51, Nacho\_0053, Nicole21\_52, Nyala\_51, OSmaximus\_53, Olak\_51, Oline\_51, Orfeu\_51, Orwigg\_53, Pacifista\_51, Phamished\_53, PhatCats2014\_53, PhatLouie\_52, PhenghisKhan\_51, Phergie\_52, Phipps\_52, Phleuron\_51, PhrankReynolds\_50, PhrodoBaggins\_52, Piglet\_0052, PinheadLarry\_52, Pinkman\_51, Placalicious\_51, Quisquilliae\_52, RedMaple\_52, Ricotta\_51, Robyn\_51, Scoot17C\_53, Selr12\_52, Serpentine\_0052, Sigman\_53, Simielle\_51, Squiggle\_52, Swiphy\_54, Swish\_53, Telesworld\_51, ThreeOh3D2\_53, Thunderbird\_51, Toni\_51, True\_51, TyrionL\_51, Usavi\_52, Virapocalypse\_52, Virgeve\_51, Waterdiva\_52, Windsor\_51, Yoshand\_53,

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

- ABU\_53, Bishoperium\_51, Cornobble\_51, Cosmolli16\_52, Dingo\_52, Durga\_53, Emiris\_53, Fringe\_53, Gophee\_52, JakeO\_51, Jillium\_51, Jiminy\_51, Jiraiya\_54, Katniss\_53, Keitherie\_52, Legolas\_52, Lopsy\_51, LostAndPhound\_51, MRabcd\_51, Mag7\_51, Maru\_51, Orion\_53, PG1\_53, Pherdinand\_53, Roliet\_52, Scrick\_52, Skippy\_52, Slatt\_52, Soile\_52, Struggle\_51, Tomlarah\_52, Trypo\_53, Vaishali24\_51, Vaticameos\_48, Veritas\_51, Wallhey\_51, YouGoGlencoco\_52, Zonia\_52,

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

- 39HC\_045, 40BC\_045, Abinghost\_52, AbsoluteMadLad\_52, Abt2graduatex2\_54, Acadian\_52, Aelin\_52, Agent47\_64, Ahwei\_46, Akoma\_52, AlanGrant\_50, Allegro\_51, AlleyCat\_66, Altwerkus\_51, AnClar\_46, AnarQue\_48, Antihero\_46, Antonia\_52, Apex\_48, Apizium\_52, Arbiter\_50, Ares\_51, Asis\_54, Athena\_54, Audrey\_52, Austelle\_48, Axumite\_46, BFK20\_ORF41, BabyGotBac\_55, Bae\_53, Baloo\_52, Bananafish\_51, Banjo\_51, Basato\_53, BayC\_54, Ben11\_52, Bernardo\_53, BiggityBass\_45, BirdsNest\_55, Blocker23\_51, BobRoss2024\_45, BobbyK\_48, Boehler\_52, Boilgate\_67, Boyle\_51, Briakila\_52, BrownCNA\_49, Brownie5\_51, Buckeye\_52, CRB2\_54, CaiB\_49, Calamitous\_51, CamL\_52, Cannibal\_52, Carthage\_50, Casbah\_52, ChaChing\_52, Chandler\_52, CharlottesWeb\_45, CheetO\_52, Childish\_51, Chorkpop\_52, ChrisnMich\_47, Chunky\_52, CloverMinnie\_48, Cobra\_52, Coffee\_51, Colbert\_52, Coldpizza\_47, Collard\_62, Compostia\_52, Cooper\_48, Corofin\_52, DaddyDaniels\_52, Dadosky\_66, Daffy\_52, Daisy\_52, Daka\_53, Dati\_52, Deenasa\_51, Devonte\_51, DigitDog\_52, Dione\_51, DirtJuice\_52, Doddsville\_52, DoesntMatter\_51, DonSancho\_51, Donny\_53, Eaglehorse\_51, EastView9101\_51, Edugator\_63, EmiRose\_31, EmpTee\_52, Epah\_46, Eremos\_52, Etaye\_52, Evaa\_45, Fanaw\_46, Faze9\_50, Feyre\_67, Fortunato\_48, Fozzie\_51, Frankicide\_52, Frederick\_48, FrenchFry\_51, Fresco\_46, Freya\_51, Funsized\_55, Gadget\_53, Gengar\_64, Gervas\_53, GinPorsche\_46, Glass\_51, GlenHope\_53, Godines\_51, Guillsminger\_65, Gustav\_35, Gyarad\_0052, HSavage\_52, Haimas\_52, Haleema\_51, Halfpint\_51, Hally898\_46, Hamish\_52, Hangman\_47, HarveySr\_51, Harvey\_52, Hashim76\_56, Heath\_46, Heathcliff\_52, Hedgerow\_51, Heftyboy\_65, Held\_52, Hertubise\_52, Hetaeria\_52, Holeinone\_51, Horchata\_52, Hosp\_044, Hydro\_47, Imvubu\_47, Indlovu\_51, Inverness\_52, InvictusManeo\_62, ItsyBitsy1\_51, JAMaL\_47, Jackstina\_48, JaguarMi\_49, Jolie1\_046, KLucky39\_52, Kaleb\_51, Kamiyu\_52, KarasumaRum\_52, KayaCho\_45, Kheth\_51, Kimbrough\_52, KingVeVeVe\_52, KlimbOn\_52, Kloppinator\_53, Knocker\_54, Kratio\_62, Kronus\_52, Kwadwo\_51, Lambano\_46, Lars\_51, Larva\_65, Lasso\_52, Laurie\_50, LeeLot\_52, Lephleur\_51, Leston\_64, LestyG\_51, Ligma\_46, LilMcDreamy\_50, LittleMunchkin\_47, LizLemon\_51, Lolalove\_48, LuckyMarjie\_51, Lulumae\_51, Lulwa\_52, Magpie\_46, Mahdia\_34, Maih\_53, MakoManhole\_48, Mana\_51, Manad\_52, Mariokart\_46, Marley1013\_52, MasterPo\_51, Matalotodo\_52,

Mecca\_51, Mesh1\_53, Mikota\_52, MiniBoss\_52, Miryou\_68, Mischief19\_63, MitKao\_52, Mithril\_47, MmasiCarm\_53, Morgushi\_52, Morrissey\_35, Mortcellus\_52, Morty007\_52, Mosaic\_51, MossRose\_48, MrPhizzler\_51, Mudslide\_47, Murdoc\_52, Mysterious\_52, NHagos\_47, Nanao\_46, Nangang\_52, Nehemiah\_51, Neos5\_52, Newman\_52, Nigel\_47, Nozo\_52, Numberten\_52, Obutu\_53, OkiRoe\_65, Olive\_52, OliverWalter\_52, Omnicron\_68, Omniscient\_52, Oosterbaan\_52, Opia\_51, OrangeOswald\_52, Paola\_64, PenguinLover67\_53, Phaedrus\_49, Phantasmagoria\_51, Phareon\_52, Phayeta\_54, Phelemich\_50, Philly\_51, Phlyer\_52, Phunky\_52, Pine5\_45, Pipefish\_54, Pipsqueak\_52, Plmatters\_52, Podrick\_52, Pops\_52, Poster\_46, Potter\_51, Prickles\_52, Prince\_47, ProfessorX\_52, Psycho\_64, Puhltonio\_52, Puppies\_33, QueenBeane\_52, QueenPie\_46, Quesadilla\_55, Qyrzula\_48, RagingRooster\_51, RainyPolka\_53, Rando14\_67, RawrgerThat\_48, Reprobate\_51, Rhinoforte\_51, Rich\_52, Riggan\_52, Rimu\_54, Rinkes\_52, Rita1961\_53, RomaT\_52, Roscoe\_53, Rosebush\_50, Roy17\_52, SDcharge11\_53, Sabella\_50, Saguaro\_54, Salete\_54, Samaymay\_52, SassyCat97\_51, Schadenfreude\_52, Schueller\_52, Serendipitous\_51, Serendipity\_52, Shatter\_46, Sheila\_52, Shenyu\_52, ShiVal\_52, SilverBell\_52, SirJeffery\_51, Sisko\_45, SlippinJimmy\_54, SoSeph\_65, Solosis\_51, Sophia\_51, Soto\_52, Sour\_50, Spartan300\_52, Squid\_52, StAugustine\_72, Stinger\_46, StinkyVeggy\_52, Suffolk\_52, Suigeneris\_53, Surely\_52, SynergyX\_52, TA17A\_51, TP1604\_54, TPA2\_58, TallGrassMM\_52, Thonko\_54, Thora\_52, Thyatira\_67, Timmi\_51, Tinciduntolum\_52, TomBombadil\_52, Tooj\_52, Tres\_51, Trine\_32, Tydolla\_51, UAch1\_52, UncleHowie\_52, Upyo\_33, Valjean\_52, Vic9\_51, Vincenzo\_49, VioletZ\_49, Vista\_52, Vivaldi\_54, Vortex\_52, Waleliano\_47, Waterfoul\_66, Weher20\_52, West99\_51, Widow\_34, Wooper\_49, Xavier\_51, Xincheng\_48, Xkcd426\_57, YDN12\_54, Yago84\_45, Yahalom\_51, Yinz\_52, Zaider\_53, Zelda\_52, Zemanar\_48, Zenteno07\_56,

### Summary by start number:

#### Start 30:

- Found in 1 of 498 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Quesadilla\_55 (B9),

#### Start 38:

- Found in 156 of 498 ( 31.3% ) of genes in pham
- Manual Annotations of this start: 111 of 448
- Called 75.6% of time when present
- Phage (with cluster) where this start called: Adriana\_53 (B1), AltPhacts\_53 (B1), Anderson\_52 (B1), Andre\_53 (B1), Ashraf\_52 (B1), Badfish\_53 (B1), BatteryCK\_51 (B1), Beaglebox\_51 (B1), BlackStallion\_53 (B1), BlueHusk\_52 (B1), Bluephacebaby\_51 (B1), Brilliant\_52 (B1), Burr\_51 (B1), CampRoach\_53 (B1), Chaelin\_52 (B1), Chah\_54 (B1), Charles1\_52 (B1), CharlieGBrown\_51 (B1), Cher\_51 (B1), Chute\_51 (B1), Coletti\_51 (B1), Craff\_53 (B1), Crownjwl\_53 (B1), DelRivs\_51 (B1), Derpp\_51 (B1), Dice\_51 (B1), DuchessDung\_51 (B1), Duggie\_51 (B1), Eugenia\_52 (B1), Fang\_53 (B1), FluffyNinja\_53 (B1), FriarPreacher\_51 (B1), FugateOSU\_51 (B1), Gareth\_51 (B1), GeneCoco\_52 (B1), Giraffe\_52 (B1), Grand2040\_51 (B1), Gwilliam\_53 (B1), Hartsy\_52 (B1), HenryJackson\_51 (B1), HighStump\_52 (B1), Hocus\_51 (B1), ImtiyazSitla\_52 (B1), Inchworm\_53 (B1), Iridoclysis\_52 (B1), IsaacEli\_53 (B1), JDog\_51 (B1), JacAttac\_53 (B1), JangoPhett\_52 (B1), Kahve\_51 (B1), Kailash\_52 (B1), Kikipoo\_53 (B1), KingTut\_43

(B1), Kwksand96\_51 (B1), Labeouficaum\_51 (B1), LasagnaCat\_53 (B1), Lego3393\_51 (B1), LeiMonet\_53 (B1), LemonSlice\_52 (B1), Longacauda\_51 (B1), Lumine\_51 (B1), Magic8\_52 (B1), Maskar\_52 (B1), Mcshane\_51 (B1), Megamind20\_52 (B1), Megatron\_53 (B1), Melc17\_52 (B1), MelsMeow\_52 (B1), MichaelPhcott\_51 (B1), Morty\_53 (B1), Mulan\_52 (B1), Mutante\_51 (B1), Nacho\_0053 (B1), Nicole21\_52 (B1), Nyala\_51 (B1), OSmaximus\_53 (B1), Olak\_51 (B1), Oline\_51 (B1), Orfeu\_51 (B1), Orwigg\_53 (B1), Pacifista\_51 (B1), Phamished\_53 (B1), PhatCats2014\_53 (B1), PhatLouie\_52 (B1), PhenghisKhan\_51 (B1), Phergie\_52 (B1), Phipps\_52 (B1), Phleuron\_51 (B1), PhrankReynolds\_50 (B1), PhrodoBaggins\_52 (B1), Piglet\_0052 (B1), PinheadLarry\_52 (B1), Pinkman\_51 (B1), Placalicious\_51 (B1), Quisquiliae\_52 (B1), RedMaple\_52 (B1), Ricotta\_51 (B1), Robyn\_51 (B1), Scoot17C\_53 (B1), Selr12\_52 (B1), Serpentine\_0052 (B1), Sigman\_53 (B1), Simielle\_51 (B1), Squiggle\_52 (B1), Swiphy\_54 (B1), Swish\_53 (B1), Telesworld\_51 (B1), ThreeOh3D2\_53 (B1), Thunderbird\_51 (B1), Toni\_51 (B1), True\_51 (B1), TyrionL\_51 (B1), Usavi\_52 (B1), Virapocalypse\_52 (B1), Virgeve\_51 (B1), Waterdiva\_52 (B1), Windsor\_51 (B1), Yoshand\_53 (B1),

#### Start 39:

- Found in 3 of 498 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Mahdia\_34 (CD),

#### Start 42:

- Found in 1 of 498 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CRB2\_54 (B9),

#### Start 43:

- Found in 11 of 498 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 7 of 448
- Called 63.6% of time when present
- Phage (with cluster) where this start called: Akoma\_52 (B3), Bernardo\_53 (B3), Chandler\_52 (B3), Gadget\_53 (B3), Kamiyu\_52 (B3), Nozo\_52 (B3), OrangeOswald\_52 (B3),

#### Start 44:

- Found in 2 of 498 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Hashim76\_56 (B13),

#### Start 48:

- Found in 1 of 498 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rinkes\_52 (B9),

#### Start 49:

- Found in 1 of 498 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Klocker\_54 (B9),

Start 52:

- Found in 3 of 498 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Suigeneris\_53 (B5),

Start 54:

- Found in 12 of 498 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 3 of 448
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Compostia\_52 (B3), Corofin\_52 (B3), GlenHope\_53 (B3),

Start 60:

- Found in 1 of 498 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mischief19\_63 (BG),

Start 64:

- Found in 47 of 498 ( 9.4% ) of genes in pham
- Manual Annotations of this start: 34 of 448
- Called 76.6% of time when present
- Phage (with cluster) where this start called: Abinghost\_52 (B3), Athena\_54 (B3), Audrey\_52 (B3), Baloo\_52 (B3), Ben11\_52 (B3), Briakila\_52 (B3), Casbah\_52 (B3), ChaChing\_52 (B3), Daisy\_52 (B3), Deenasa\_51 (B3), Devonte\_51 (B3), Gervas\_53 (B3), Halpint\_51 (B3), HarveySr\_51 (B3), Heathcliff\_52 (B3), Jackstina\_48 (B3), Kronus\_52 (B3), LestyG\_51 (B3), MmasiCarm\_53 (B3), Mortcellus\_52 (B3), Morty007\_52 (B3), Neos5\_52 (B3), Obutu\_53 (B3), Phaedrus\_49 (B3), Phayeta\_54 (B3), Philly\_51 (B3), Phlyer\_52 (B3), Pipefish\_54 (B3), RagingRooster\_51 (B3), Rita1961\_53 (B3), RomaT\_52 (B3), SlippinJimmy\_54 (B3), SynergyX\_52 (B3), Tydolla\_51 (B3), Yahalom\_51 (B3), Yinz\_52 (B3),

Start 65:

- Found in 6 of 498 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Mariokart\_46 (DR),

Start 66:

- Found in 1 of 498 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: StAugustine\_72 (singleton),

Start 67:

- Found in 56 of 498 ( 11.2% ) of genes in pham
- Manual Annotations of this start: 49 of 448
- Called 98.2% of time when present
- Phage (with cluster) where this start called: Allegro\_51 (B2), AnClar\_46 (DR), AnarQue\_48 (DR), Arbiter\_50 (B2), Ares\_51 (B2), Axumite\_46 (DR), Bananafish\_51



(B2), BiggityBass\_45 (DR), Blocker23\_51 (B2), BobRoss2024\_45 (DR), Boyle\_51 (B2), Brownie5\_51 (B2), CaiB\_49 (DR), Calamitous\_51 (B2), CharlottesWeb\_45 (DR), CloverMinnie\_48 (DR), Coffee\_51 (B2), Coldpizza\_47 (DR), Eaglehorse\_51 (B2), Evaa\_45 (DR), Faze9\_50 (B2), FrenchFry\_51 (B2), Fresco\_46 (DR), Glass\_51 (B2), Godines\_51 (B2), Hedgerow\_51 (B2), Holeinone\_51 (B2), ItsyBitsy1\_51 (B2), Kaleb\_51 (B2), Kheth\_51 (B2), Lars\_51 (B2), Laurie\_50 (B2), Lephleur\_51 (B2), Ligma\_46 (DR), LittleMunchkin\_47 (DR), LizLemon\_51 (B2), MakoManhole\_48 (DR), MasterPo\_51 (B2), MossRose\_48 (DR), Opia\_51 (B2), Phantasmagoria\_51 (B2), Qyrzula\_48 (B2), Rhinoforte\_51 (B2), Rosebush\_50 (B2), Sabella\_50 (B2), Shatter\_46 (DR), Sisko\_45 (DR), Sour\_50 (DR), TA17A\_51 (B2), Tinciduntolum\_52 (B2), Tres\_51 (B2), Vic9\_51 (B2), West99\_51 (B2), Wooper\_49 (DR), Yago84\_45 (DR),

#### Start 68:

- Found in 73 of 498 ( 14.7% ) of genes in pham
- Manual Annotations of this start: 66 of 448
- Called 91.8% of time when present
- Phage (with cluster) where this start called: AbsoluteMadLad\_52 (B1), Aelin\_52 (B1), Altwerkus\_51 (B1), Antonia\_52 (B1), Apizium\_52 (B1), Boehler\_52 (B1), Buckeye\_52 (B1), CheetO\_52 (B1), Chunky\_52 (B1), Dione\_51 (B1), DoesntMatter\_51 (B1), DonSanchon\_51 (B1), EmpTee\_52 (B1), Eremos\_52 (B1), Fozzie\_51 (B1), Frankicide\_52 (B1), Freya\_51 (B1), Gyarad\_0052 (B1), HSavage\_52 (B1), Haimas\_52 (B1), Hamish\_52 (B1), Harvey\_52 (B1), Hertubise\_52 (B1), Hetaeria\_52 (B1), Horchata\_52 (B1), Inverness\_52 (B1), KLucky39\_52 (B1), KingVeVeVe\_52 (B1), KlimbOn\_52 (B1), Kloppinator\_53 (B1), LuckyMarjie\_51 (B1), Lulumae\_51 (B1), Lulwa\_52 (B1), Manad\_52 (B1), Matalotodo\_52 (B1), Mesh1\_53 (B1), Mikota\_52 (B1), MiniBoss\_52 (B1), Murdoc\_52 (B1), Newman\_52 (B1), Olive\_52 (B1), OliverWalter\_52 (B1), Oosterbaan\_52 (B1), Phareon\_52 (B1), Phunky\_52 (B1), Pipsqueak\_52 (B1), Plmatters\_52 (B1), Podrick\_52 (B1), Pops\_52 (B1), Riggan\_52 (B1), Roscoe\_53 (B1), Roy17\_52 (B1), SDcharge11\_53 (B1), Schadenfreude\_52 (B1), Sheila\_52 (B1), ShiVal\_52 (B1), SilverBell\_52 (B1), Soto\_52 (B1), Spartan300\_52 (B1), Suffolk\_52 (B1), Surely\_52 (B1), Thora\_52 (B1), Tooj\_52 (B1), UAch1\_52 (B1), UncleHowie\_52 (B1), Zaider\_53 (B1), Zelda\_52 (B1),

#### Start 69:

- Found in 252 of 498 ( 50.6% ) of genes in pham
- Manual Annotations of this start: 103 of 448
- Called 48.0% of time when present
- Phage (with cluster) where this start called: 39HC\_045 (B6), 40BC\_045 (B6), Ahwei\_46 (B4), AlanGrant\_50 (B4), Antihero\_46 (B4), Apex\_48 (B4), Austelle\_48 (B4), Banjo\_51 (B1), Bishoperium\_51 (B1), BobbyK\_48 (B4), BrownCNA\_49 (B4), CamL\_52 (B1), Cannibal\_52 (B1), Carthage\_50 (B1), Childish\_51 (B1), Chorkpop\_52 (B1), ChrisnMich\_47 (B4), Cobra\_52 (B1), Cooper\_48 (B4), Cornobble\_51 (B1), Cosmolli16\_52 (B1), DaddyDaniels\_52 (B1), Daffy\_52 (B1), Daka\_53 (B1), Dati\_52 (B1), Dingo\_52 (B1), DirtJuice\_52 (B1), Doddsville\_52 (B1), Durga\_53 (B1), Emiris\_53 (B1), Epah\_46 (B4), Etaye\_52 (B1), Fanaw\_46 (B4), Fortunato\_48 (B4), Frederick\_48 (B4), Fringe\_53 (B1), Funsized\_55 (B9), GinPorsche\_46 (B4), Haleema\_51 (B1), Hally898\_46 (B4), Hangman\_47 (B4), Heath\_46 (B4), Held\_52 (B1), Hosp\_044 (B6), Hydro\_47 (B4), Imvubu\_47 (B10), Indlovu\_51 (B11), JAMaL\_47 (B4), JaguarMi\_49 (B4), JakeO\_51 (B1), Jillium\_51 (B1), Jiminy\_51 (B1), Jolie1\_046 (B6), KayaCho\_45 (B6), Keitherie\_52 (B1), Kimbrough\_52 (B1), Kwadwo\_51 (B1), Lambano\_46 (B4), Lasso\_52 (B1), Legolas\_52 (B1), Lolalove\_48 (B4), Lopsy\_51 (B1), LostAndPhound\_51 (B1), MRabcd\_51 (B1), Magpie\_46 (B4), Mana\_51 (B1),

Maru\_51 (B1), Mecca\_51 (B1), MitKao\_52 (B1), Mithril\_47 (B4), Morgushi\_52 (B1), Mosaic\_51 (B1), Mudslide\_47 (B4), Nanao\_46 (B4), Nigel\_47 (B4), Omniscient\_52 (B1), Orion\_53 (B1), Pherdinand\_53 (B1), Pine5\_45 (singleton), Poster\_46 (B4), Potter\_51 (B1), Prickles\_52 (B1), Prince\_47 (B4), Puhltonio\_52 (B1), QueenBeane\_52 (B1), QueenPie\_46 (B4), RawrgerThat\_48 (B4), Roliet\_52 (B1), Saguaro\_54 (B7), Samaymay\_52 (B1), SassyCat97\_51 (B1), Scrick\_52 (B1), Serendipity\_52 (B1), Skippy\_52 (B1), Slatt\_52 (B1), Soile\_52 (B1), Solosis\_51 (B1), Sophia\_51 (B1), Squid\_52 (B1), Stinger\_46 (B4), TPA2\_58 (singleton), TallGrassMM\_52 (B1), Thonko\_54 (B8), Timmi\_51 (B1), TomBombadil\_52 (B1), Tomlarah\_52 (B1), Vaishali24\_51 (B1), Valjean\_52 (B1), Vaticameos\_48 (B1), Veritas\_51 (B1), Vincenzo\_49 (B4), VioletZ\_49 (B4), Vivaldi\_54 (B1), Vortex\_52 (B1), Waleliano\_47 (B4), Wallhey\_51 (B1), Weher20\_52 (B1), Xavier\_51 (B1), Xincheng\_48 (B4), YouGoGlencoco\_52 (B1), Zemanar\_48 (B4),

#### Start 70:

- Found in 21 of 498 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 10 of 448
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Acadian\_52 (B5), Bae\_53 (B5), DigitDog\_52 (B5), Donny\_53 (B5), EastView9101\_51 (B5), KarasumaRum\_52 (B5), LilMcDreamy\_50 (B12), Mysterious\_52 (B5), Nangang\_52 (B5), Nehemiah\_51 (B5), PenguinLover67\_53 (B9), Phelemich\_50 (B5), Reprobate\_51 (B5), Rich\_52 (B5), Serendipitous\_51 (B5), Shenyu\_52 (B5), SirJeffery\_51 (B5), StinkyVeggy\_52 (B5),

#### Start 73:

- Found in 1 of 498 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NHagos\_47 (DR),

#### Start 74:

- Found in 4 of 498 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 448
- Called 75.0% of time when present
- Phage (with cluster) where this start called: BFK20\_ORF41 (singleton), BirdsNest\_55 (B13), Zenteno07\_56 (B13),

#### Start 76:

- Found in 1 of 498 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Xkcd426\_57 (BG),

#### Start 77:

- Found in 33 of 498 ( 6.6% ) of genes in pham
- Manual Annotations of this start: 31 of 448
- Called 97.0% of time when present
- Phage (with cluster) where this start called: Abt2graduatex2\_54 (BG), Agent47\_64 (K5), AlleyCat\_66 (K5), Asis\_54 (BG), BabyGotBac\_55 (BG), BayC\_54 (BG), Boilgate\_67 (K8), Collard\_62 (K5), Dadosky\_66 (K5), Edugator\_63 (K5), Feyre\_67 (K5), Gengar\_64 (K5), Guillsminger\_65 (K5), Heftyboy\_65 (K5), InvictusManeo\_62 (K5), Kratio\_62 (K5), Larva\_65 (K5), Leston\_64 (K5), Maih\_53 (BG), Miryou\_68 (K5), OkiRoe\_65 (K5), Omnicron\_68 (K5), Paola\_64 (K5), Psycho\_64 (K5), RainyPolka\_53

(BG), Rando14\_67 (K5), Saletе\_54 (BG), SoSeph\_65 (K5), TP1604\_54 (BG), Thyatira\_67 (K5), Waterfoul\_66 (K5), YDN12\_54 (BG),

Start 79:

- Found in 8 of 498 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 7 of 448
- Called 87.5% of time when present
- Phage (with cluster) where this start called: EmiRose\_31 (singleton), Gustav\_35 (CD), Morrissey\_35 (CD), Puppies\_33 (CD), Trine\_32 (CD), Upyo\_33 (CD), Widow\_34 (CD),

Start 82:

- Found in 288 of 498 ( 57.8% ) of genes in pham
- Manual Annotations of this start: 11 of 448
- Called 4.2% of time when present
- Phage (with cluster) where this start called: Basato\_53 (B1), Colbert\_52 (B1), Gopheе\_52 (B1), Jiraiya\_54 (B1), Katniss\_53 (B1), LeeLot\_52 (B1), Mag7\_51 (B1), PG1\_53 (B1), Struggle\_51 (B1), Trypo\_53 (B1), Vista\_52 (B1), Zonia\_52 (B1),

Start 87:

- Found in 275 of 498 ( 55.2% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 0.4% of time when present
- Phage (with cluster) where this start called: ProfessorX\_52 (B1),

Start 89:

- Found in 275 of 498 ( 55.2% ) of genes in pham
- Manual Annotations of this start: 2 of 448
- Called 1.8% of time when present
- Phage (with cluster) where this start called: ABU\_53 (B1), MrPhizzler\_51 (B1), Numberten\_52 (B1), Rimu\_54 (B1), Schueller\_52 (B1),

Start 103:

- Found in 129 of 498 ( 25.9% ) of genes in pham
- Manual Annotations of this start: 1 of 448
- Called 0.8% of time when present
- Phage (with cluster) where this start called: Marley1013\_52 (B3),

### **Summary by clusters:**

There are 19 clusters represented in this pham: singleton, BG, B10, B8, B11, B6, CD, B4, B5, K5, B7, B12, B1, B2, B3, K8, DR, B9, B13,

Info for manual annotations of cluster B1:

- Start number 38 was manually annotated 111 times for cluster B1.
- Start number 68 was manually annotated 66 times for cluster B1.
- Start number 69 was manually annotated 72 times for cluster B1.
- Start number 82 was manually annotated 11 times for cluster B1.
- Start number 87 was manually annotated 1 time for cluster B1.
- Start number 89 was manually annotated 2 times for cluster B1.

Info for manual annotations of cluster B10:

- Start number 69 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B11:

- Start number 69 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:

- Start number 70 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B13:

- Start number 74 was manually annotated 2 times for cluster B13.

Info for manual annotations of cluster B2:

- Start number 67 was manually annotated 32 times for cluster B2.

Info for manual annotations of cluster B3:

- Start number 43 was manually annotated 7 times for cluster B3.
- Start number 54 was manually annotated 3 times for cluster B3.
- Start number 64 was manually annotated 34 times for cluster B3.
- Start number 103 was manually annotated 1 time for cluster B3.

Info for manual annotations of cluster B4:

- Start number 69 was manually annotated 25 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 52 was manually annotated 1 time for cluster B5.
- Start number 70 was manually annotated 8 times for cluster B5.

Info for manual annotations of cluster B6:

- Start number 69 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B7:

- Start number 69 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B8:

- Start number 69 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster B9:

- Start number 30 was manually annotated 1 time for cluster B9.
- Start number 42 was manually annotated 1 time for cluster B9.
- Start number 48 was manually annotated 1 time for cluster B9.
- Start number 49 was manually annotated 1 time for cluster B9.
- Start number 69 was manually annotated 1 time for cluster B9.
- Start number 70 was manually annotated 1 time for cluster B9.

Info for manual annotations of cluster BG:

- Start number 60 was manually annotated 1 time for cluster BG.
- Start number 76 was manually annotated 1 time for cluster BG.
- Start number 77 was manually annotated 8 times for cluster BG.

Info for manual annotations of cluster CD:

- Start number 39 was manually annotated 1 time for cluster CD.
- Start number 79 was manually annotated 6 times for cluster CD.

Info for manual annotations of cluster DR:

- Start number 65 was manually annotated 1 time for cluster DR.
- Start number 67 was manually annotated 17 times for cluster DR.
- Start number 73 was manually annotated 1 time for cluster DR.

Info for manual annotations of cluster K5:

- Start number 77 was manually annotated 22 times for cluster K5.

Info for manual annotations of cluster K8:

- Start number 77 was manually annotated 1 time for cluster K8.

### **Gene Information:**

Gene: 39HC\_045 Start: 45303, Stop: 43558, Start Num: 69

Candidate Starts for 39HC\_045:

(40, 45402), (53, 45369), (Start: 69 @45303 has 103 MA's), (108, 45084), (122, 44997), (123, 44994), (127, 44973), (138, 44913), (145, 44844), (147, 44823), (148, 44802), (151, 44784), (153, 44772), (156, 44736), (163, 44703), (167, 44670), (169, 44661), (172, 44625), (173, 44622), (176, 44601), (196, 44481), (198, 44469), (207, 44406), (210, 44394), (212, 44367), (213, 44355), (219, 44310), (220, 44307), (224, 44262), (227, 44232), (237, 44181), (245, 44133), (249, 44103), (273, 43989), (274, 43980), (275, 43971), (280, 43953), (285, 43941), (286, 43938), (294, 43914), (295, 43911), (298, 43884), (308, 43839), (311, 43830), (322, 43788), (348, 43656), (352, 43632),

Gene: 40BC\_045 Start: 45303, Stop: 43558, Start Num: 69

Candidate Starts for 40BC\_045:

(40, 45402), (53, 45369), (Start: 69 @45303 has 103 MA's), (108, 45084), (122, 44997), (123, 44994), (127, 44973), (138, 44913), (145, 44844), (147, 44823), (148, 44802), (151, 44784), (153, 44772), (156, 44736), (163, 44703), (167, 44670), (169, 44661), (172, 44625), (173, 44622), (176, 44601), (196, 44481), (198, 44469), (207, 44406), (210, 44394), (212, 44367), (213, 44355), (219, 44310), (220, 44307), (224, 44262), (227, 44232), (237, 44181), (245, 44133), (249, 44103), (273, 43989), (274, 43980), (275, 43971), (280, 43953), (285, 43941), (286, 43938), (294, 43914), (295, 43911), (298, 43884), (308, 43839), (311, 43830), (322, 43788), (348, 43656), (352, 43632),

Gene: ABU\_53 Start: 46989, Stop: 45376, Start Num: 89

Candidate Starts for ABU\_53:

(Start: 38 @47172 has 111 MA's), (Start: 69 @47079 has 103 MA's), (Start: 82 @47055 has 11 MA's), (Start: 87 @46998 has 1 MA's), (Start: 89 @46989 has 2 MA's), (104, 46899), (108, 46866), (119, 46809), (121, 46797), (123, 46773), (126, 46761), (127, 46752), (138, 46692), (147, 46602), (151, 46557), (158, 46497), (167, 46443), (173, 46395), (176, 46374), (198, 46242), (208, 46173), (210, 46167), (212, 46140), (214, 46125), (219, 46083), (224, 46035), (227, 46005), (232, 45978), (266, 45852), (268, 45846), (271, 45819), (281, 45774), (286, 45759), (288, 45753), (301, 45699), (303, 45690), (352, 45462), (358, 45426),

Gene: Abinghost\_52 Start: 47147, Stop: 45450, Start Num: 64

Candidate Starts for Abinghost\_52:

(Start: 64 @47147 has 34 MA's), (Start: 103 @46949 has 1 MA's), (108, 46913), (119, 46856), (127, 46799), (134, 46757), (136, 46751), (141, 46694), (146, 46667), (147, 46649), (158, 46544), (171, 46454), (173, 46442), (176, 46421), (183, 46376), (193, 46313), (205, 46229), (209, 46214), (210, 46211), (211, 46208), (212, 46184), (215, 46166), (219, 46127), (224, 46079), (227, 46049), (231, 46025), (238, 45983), (264, 45905), (270, 45878), (277, 45827), (286, 45803), (301, 45755), (312, 45716), (325, 45674), (344, 45569), (352, 45527), (353, 45512), (356, 45494),



Gene: AbsoluteMadLad\_52 Start: 47183, Stop: 45480, Start Num: 68

Candidate Starts for AbsoluteMadLad\_52:

(Start: 68 @47183 has 66 MA's), (Start: 82 @47159 has 11 MA's), (Start: 87 @47102 has 1 MA's), (Start: 89 @47093 has 2 MA's), (104, 47003), (108, 46970), (119, 46913), (121, 46901), (123, 46877), (126, 46865), (127, 46856), (138, 46796), (147, 46706), (151, 46661), (158, 46601), (167, 46547), (173, 46499), (176, 46478), (198, 46346), (208, 46277), (210, 46271), (212, 46244), (214, 46229), (219, 46187), (224, 46139), (227, 46109), (232, 46082), (266, 45956), (268, 45950), (271, 45923), (281, 45878), (286, 45863), (288, 45857), (301, 45803), (303, 45794), (352, 45566), (358, 45530),

Gene: Abt2graduatex2\_54 Start: 44800, Stop: 46635, Start Num: 77

Candidate Starts for Abt2graduatex2\_54:

(Start: 77 @44800 has 31 MA's), (90, 44881), (92, 44887), (102, 44974), (104, 44980), (111, 45034), (112, 45037), (117, 45061), (126, 45118), (131, 45154), (137, 45178), (143, 45241), (147, 45265), (149, 45292), (153, 45325), (155, 45352), (165, 45400), (184, 45550), (185, 45559), (187, 45577), (192, 45598), (195, 45619), (209, 45706), (210, 45709), (213, 45748), (219, 45793), (220, 45796), (228, 45877), (266, 46072), (278, 46144), (293, 46195), (298, 46273), (299, 46288), (316, 46366), (322, 46390), (326, 46411), (344, 46501),

Gene: Acadian\_52 Start: 47834, Stop: 46140, Start Num: 70

Candidate Starts for Acadian\_52:

(Start: 70 @47834 has 10 MA's), (Start: 82 @47807 has 11 MA's), (91, 47735), (108, 47618), (123, 47528), (131, 47480), (134, 47465), (138, 47447), (145, 47378), (147, 47357), (163, 47237), (167, 47204), (173, 47156), (176, 47135), (196, 47015), (207, 46940), (208, 46934), (210, 46928), (211, 46925), (212, 46901), (213, 46889), (214, 46886), (219, 46844), (227, 46766), (247, 46679), (259, 46643), (262, 46631), (266, 46610), (267, 46607), (273, 46568), (275, 46550), (280, 46532), (286, 46514), (352, 46217),

Gene: Adriana\_53 Start: 47170, Stop: 45374, Start Num: 38

Candidate Starts for Adriana\_53:

(Start: 38 @47170 has 111 MA's), (Start: 69 @47077 has 103 MA's), (Start: 82 @47053 has 11 MA's), (Start: 87 @46996 has 1 MA's), (Start: 89 @46987 has 2 MA's), (104, 46897), (108, 46864), (119, 46807), (121, 46795), (123, 46771), (126, 46759), (127, 46750), (138, 46690), (147, 46600), (151, 46555), (158, 46495), (173, 46393), (176, 46372), (198, 46240), (208, 46171), (210, 46165), (212, 46138), (214, 46123), (219, 46081), (224, 46033), (227, 46003), (232, 45976), (266, 45850), (268, 45844), (271, 45817), (280, 45775), (281, 45772), (286, 45757), (288, 45751), (301, 45697), (303, 45688), (352, 45460), (358, 45424),

Gene: Aelin\_52 Start: 46747, Stop: 45044, Start Num: 68

Candidate Starts for Aelin\_52:

(Start: 68 @46747 has 66 MA's), (Start: 82 @46723 has 11 MA's), (Start: 87 @46666 has 1 MA's), (Start: 89 @46657 has 2 MA's), (104, 46567), (108, 46534), (119, 46477), (121, 46465), (123, 46441), (126, 46429), (127, 46420), (138, 46360), (147, 46270), (151, 46225), (158, 46165), (173, 46063), (176, 46042), (198, 45910), (208, 45841), (210, 45835), (212, 45808), (214, 45793), (219, 45751), (224, 45703), (227, 45673), (232, 45646), (266, 45520), (268, 45514), (271, 45487), (281, 45442), (286, 45427), (288, 45421), (301, 45367), (303, 45358), (352, 45130), (358, 45094),

Gene: Agent47\_64 Start: 44063, Stop: 45775, Start Num: 77

Candidate Starts for Agent47\_64:

(Start: 77 @44063 has 31 MA's), (92, 44156), (96, 44198), (Start: 103 @44234 has 1 MA's), (104, 44237), (107, 44261), (108, 44270), (116, 44309), (119, 44327), (127, 44384), (131, 44411), (132, 44414), (140, 44477), (147, 44537), (150, 44567), (151, 44576), (161, 44651), (162, 44654), (169, 44699), (171, 44726), (172, 44735), (173, 44738), (181, 44804), (182, 44807), (183, 44810), (185, 44825), (186, 44840), (196, 44885), (198, 44897), (211, 44975), (212, 44999), (213, 45011), (214,

45014), (215, 45017), (217, 45038), (219, 45056), (224, 45104), (230, 45143), (233, 45164), (253, 45248), (265, 45290), (270, 45314), (275, 45359), (276, 45362), (286, 45395), (300, 45419), (320, 45473), (322, 45479), (327, 45503), (352, 45620), (361, 45662), (364, 45686),

Gene: Ahwei\_46 Start: 46387, Stop: 44672, Start Num: 69

Candidate Starts for Ahwei\_46:

(Start: 69 @46387 has 103 MA's), (105, 46195), (108, 46165), (111, 46144), (119, 46108), (123, 46072), (125, 46063), (145, 45922), (147, 45901), (148, 45880), (158, 45802), (163, 45781), (167, 45748), (169, 45739), (172, 45703), (173, 45700), (177, 45676), (196, 45559), (198, 45547), (202, 45523), (208, 45478), (210, 45472), (212, 45445), (213, 45433), (214, 45430), (219, 45388), (224, 45340), (227, 45310), (237, 45259), (251, 45211), (262, 45175), (266, 45154), (267, 45151), (273, 45112), (280, 45076), (285, 45061), (286, 45058), (290, 45049), (295, 45031), (298, 45004), (303, 44983), (329, 44872), (352, 44749), (359, 44710), (362, 44698),

Gene: Akoma\_52 Start: 47260, Stop: 45461, Start Num: 43

Candidate Starts for Akoma\_52:

(17, 47446), (19, 47425), (25, 47350), (Start: 43 @47260 has 7 MA's), (51, 47236), (Start: 54 @47230 has 3 MA's), (55, 47227), (Start: 64 @47158 has 34 MA's), (Start: 103 @46960 has 1 MA's), (108, 46924), (119, 46867), (127, 46810), (134, 46768), (136, 46762), (141, 46705), (146, 46678), (147, 46660), (158, 46555), (171, 46465), (173, 46453), (176, 46432), (183, 46387), (193, 46324), (205, 46240), (209, 46225), (210, 46222), (211, 46219), (212, 46195), (215, 46177), (219, 46138), (224, 46090), (227, 46060), (231, 46036), (238, 45994), (264, 45916), (270, 45889), (277, 45838), (286, 45814), (301, 45766), (312, 45727), (325, 45685), (344, 45580), (352, 45538), (353, 45523),

Gene: AlanGrant\_50 Start: 48162, Stop: 46462, Start Num: 69

Candidate Starts for AlanGrant\_50:

(6, 48621), (11, 48567), (Start: 69 @48162 has 103 MA's), (83, 48114), (105, 47970), (108, 47940), (119, 47883), (121, 47871), (126, 47835), (145, 47697), (147, 47676), (163, 47556), (167, 47523), (173, 47475), (177, 47451), (180, 47436), (198, 47322), (207, 47259), (210, 47247), (212, 47220), (213, 47208), (214, 47205), (219, 47163), (224, 47115), (227, 47085), (235, 47043), (237, 47034), (261, 46962), (262, 46959), (266, 46938), (272, 46902), (273, 46896), (275, 46878), (280, 46860), (285, 46845), (295, 46815), (329, 46662), (349, 46554), (352, 46539), (362, 46488),

Gene: Allegro\_51 Start: 46564, Stop: 44852, Start Num: 67

Candidate Starts for Allegro\_51:

(10, 46993), (12, 46957), (14, 46885), (16, 46870), (20, 46819), (Start: 67 @46564 has 49 MA's), (75, 46552), (102, 46381), (Start: 103 @46378 has 1 MA's), (108, 46342), (109, 46330), (111, 46321), (119, 46285), (120, 46282), (123, 46249), (134, 46186), (147, 46078), (151, 46039), (163, 45958), (167, 45925), (169, 45916), (173, 45877), (176, 45856), (177, 45853), (183, 45811), (185, 45796), (186, 45781), (193, 45751), (198, 45724), (203, 45676), (209, 45652), (210, 45649), (212, 45622), (213, 45610), (215, 45604), (219, 45565), (224, 45517), (227, 45487), (228, 45481), (237, 45436), (251, 45361), (253, 45349), (261, 45325), (262, 45322), (265, 45307), (275, 45241), (286, 45208), (309, 45130), (318, 45100), (319, 45097), (322, 45085), (331, 45046), (344, 44968), (345, 44965), (352, 44926), (366, 44860),

Gene: AlleyCat\_66 Start: 44390, Stop: 46105, Start Num: 77

Candidate Starts for AlleyCat\_66:

(Start: 77 @44390 has 31 MA's), (92, 44483), (96, 44525), (Start: 103 @44561 has 1 MA's), (104, 44564), (107, 44588), (108, 44597), (116, 44636), (119, 44654), (127, 44711), (131, 44738), (132, 44741), (140, 44804), (147, 44864), (150, 44894), (151, 44903), (161, 44978), (162, 44981), (171, 45053), (172, 45062), (173, 45065), (181, 45131), (182, 45134), (183, 45137), (185, 45152), (186, 45167), (189, 45182), (196, 45212), (198, 45224), (212, 45326), (213, 45338), (214, 45341), (215, 45344), (217, 45365), (219, 45383), (224, 45431), (229, 45464), (233, 45491), (265, 45620), (270,

45644), (275, 45689), (276, 45692), (286, 45725), (300, 45749), (320, 45803), (322, 45809), (327, 45833), (352, 45950), (353, 45965), (361, 45992), (364, 46016),

Gene: AltPhacts\_53 Start: 47255, Stop: 45453, Start Num: 38

Candidate Starts for AltPhacts\_53:

(Start: 38 @47255 has 111 MA's), (Start: 69 @47159 has 103 MA's), (Start: 82 @47135 has 11 MA's), (Start: 87 @47078 has 1 MA's), (Start: 89 @47069 has 2 MA's), (104, 46979), (108, 46946), (119, 46889), (121, 46877), (123, 46853), (126, 46841), (127, 46832), (138, 46772), (147, 46682), (151, 46637), (158, 46577), (167, 46523), (173, 46475), (176, 46454), (198, 46322), (208, 46253), (210, 46247), (212, 46220), (214, 46205), (219, 46163), (224, 46115), (227, 46085), (232, 46058), (266, 45932), (268, 45926), (271, 45899), (281, 45854), (286, 45839), (288, 45833), (301, 45779), (303, 45770), (352, 45539), (358, 45503),

Gene: Altwerkus\_51 Start: 46635, Stop: 44932, Start Num: 68

Candidate Starts for Altwerkus\_51:

(Start: 68 @46635 has 66 MA's), (Start: 82 @46611 has 11 MA's), (Start: 87 @46554 has 1 MA's), (Start: 89 @46545 has 2 MA's), (104, 46455), (108, 46422), (119, 46365), (121, 46353), (123, 46329), (126, 46317), (127, 46308), (138, 46248), (147, 46158), (151, 46113), (158, 46053), (167, 45999), (173, 45951), (176, 45930), (198, 45798), (208, 45729), (210, 45723), (212, 45696), (214, 45681), (219, 45639), (224, 45591), (227, 45561), (232, 45534), (266, 45408), (268, 45402), (271, 45375), (281, 45330), (286, 45315), (288, 45309), (301, 45255), (303, 45246), (352, 45018), (358, 44982),

Gene: AnClar\_46 Start: 42409, Stop: 40748, Start Num: 67

Candidate Starts for AnClar\_46:

(Start: 67 @42409 has 49 MA's), (86, 42343), (92, 42301), (Start: 103 @42223 has 1 MA's), (104, 42220), (108, 42187), (119, 42130), (145, 41944), (147, 41923), (163, 41803), (173, 41722), (176, 41701), (180, 41683), (181, 41662), (183, 41656), (199, 41563), (209, 41497), (210, 41494), (212, 41467), (214, 41452), (219, 41410), (227, 41332), (236, 41284), (301, 41050), (303, 41041), (321, 40981), (322, 40978), (331, 40939), (346, 40855), (352, 40819),

Gene: AnarQue\_48 Start: 41995, Stop: 40328, Start Num: 67

Candidate Starts for AnarQue\_48:

(Start: 67 @41995 has 49 MA's), (92, 41890), (95, 41860), (102, 41815), (Start: 103 @41812 has 1 MA's), (108, 41776), (109, 41764), (145, 41530), (147, 41509), (158, 41407), (172, 41308), (173, 41305), (178, 41272), (196, 41164), (208, 41083), (209, 41080), (210, 41077), (212, 41050), (213, 41038), (214, 41035), (219, 40993), (227, 40915), (229, 40906), (235, 40873), (266, 40765), (267, 40762), (275, 40705), (285, 40675), (286, 40672), (332, 40522), (352, 40405), (368, 40339),

Gene: Anderson\_52 Start: 47027, Stop: 45231, Start Num: 38

Candidate Starts for Anderson\_52:

(Start: 38 @47027 has 111 MA's), (Start: 69 @46934 has 103 MA's), (Start: 82 @46910 has 11 MA's), (Start: 87 @46853 has 1 MA's), (Start: 89 @46844 has 2 MA's), (104, 46754), (108, 46721), (119, 46664), (121, 46652), (123, 46628), (126, 46616), (127, 46607), (138, 46547), (147, 46457), (151, 46412), (158, 46352), (167, 46298), (173, 46250), (176, 46229), (198, 46097), (208, 46028), (210, 46022), (212, 45995), (214, 45980), (219, 45938), (224, 45890), (227, 45860), (232, 45833), (266, 45707), (268, 45701), (271, 45674), (281, 45629), (286, 45614), (288, 45608), (301, 45554), (303, 45545), (352, 45317), (358, 45281),

Gene: Andre\_53 Start: 47164, Stop: 45368, Start Num: 38

Candidate Starts for Andre\_53:

(Start: 38 @47164 has 111 MA's), (Start: 69 @47071 has 103 MA's), (Start: 82 @47047 has 11 MA's), (Start: 87 @46990 has 1 MA's), (Start: 89 @46981 has 2 MA's), (104, 46891), (108, 46858), (119, 46801), (121, 46789), (123, 46765), (126, 46753), (127, 46744), (138, 46684), (147, 46594), (151,

46549), (158, 46489), (167, 46435), (173, 46387), (176, 46366), (198, 46234), (208, 46165), (210, 46159), (212, 46132), (214, 46117), (219, 46075), (224, 46027), (227, 45997), (232, 45970), (266, 45844), (268, 45838), (271, 45811), (281, 45766), (286, 45751), (288, 45745), (301, 45691), (303, 45682), (352, 45454), (358, 45418),

Gene: Antihero\_46 Start: 46387, Stop: 44672, Start Num: 69

Candidate Starts for Antihero\_46:

(Start: 69 @46387 has 103 MA's), (105, 46195), (108, 46165), (111, 46144), (119, 46108), (123, 46072), (125, 46063), (145, 45922), (147, 45901), (148, 45880), (158, 45802), (163, 45781), (167, 45748), (169, 45739), (172, 45703), (173, 45700), (177, 45676), (196, 45559), (198, 45547), (202, 45523), (208, 45478), (210, 45472), (212, 45445), (213, 45433), (214, 45430), (219, 45388), (224, 45340), (227, 45310), (237, 45259), (251, 45211), (262, 45175), (266, 45154), (267, 45151), (273, 45112), (280, 45076), (285, 45061), (286, 45058), (290, 45049), (295, 45031), (298, 45004), (303, 44983), (329, 44872), (352, 44749),

Gene: Antonia\_52 Start: 46747, Stop: 45044, Start Num: 68

Candidate Starts for Antonia\_52:

(Start: 68 @46747 has 66 MA's), (Start: 82 @46723 has 11 MA's), (Start: 87 @46666 has 1 MA's), (Start: 89 @46657 has 2 MA's), (104, 46567), (108, 46534), (119, 46477), (121, 46465), (123, 46441), (126, 46429), (127, 46420), (138, 46360), (147, 46270), (151, 46225), (158, 46165), (173, 46063), (176, 46042), (198, 45910), (208, 45841), (210, 45835), (212, 45808), (214, 45793), (219, 45751), (224, 45703), (227, 45673), (232, 45646), (266, 45520), (268, 45514), (271, 45487), (281, 45442), (286, 45427), (288, 45421), (301, 45367), (303, 45358), (352, 45130), (358, 45094),

Gene: Apex\_48 Start: 47628, Stop: 45916, Start Num: 69

Candidate Starts for Apex\_48:

(Start: 69 @47628 has 103 MA's), (102, 47445), (108, 47406), (111, 47385), (123, 47316), (138, 47235), (145, 47166), (147, 47145), (158, 47046), (163, 47025), (167, 46992), (169, 46983), (172, 46947), (173, 46944), (177, 46920), (194, 46809), (196, 46803), (198, 46791), (208, 46722), (210, 46716), (212, 46689), (213, 46677), (214, 46674), (219, 46632), (224, 46584), (227, 46554), (262, 46419), (265, 46404), (266, 46398), (267, 46395), (272, 46362), (273, 46356), (274, 46347), (280, 46320), (285, 46305), (286, 46302), (290, 46293), (295, 46275), (298, 46248), (303, 46227), (329, 46116), (352, 45993), (359, 45954), (362, 45942),

Gene: Apizium\_52 Start: 46832, Stop: 45129, Start Num: 68

Candidate Starts for Apizium\_52:

(Start: 68 @46832 has 66 MA's), (Start: 82 @46808 has 11 MA's), (Start: 87 @46751 has 1 MA's), (Start: 89 @46742 has 2 MA's), (104, 46652), (108, 46619), (119, 46562), (121, 46550), (123, 46526), (126, 46514), (127, 46505), (138, 46445), (147, 46355), (151, 46310), (158, 46250), (167, 46196), (173, 46148), (176, 46127), (198, 45995), (208, 45926), (210, 45920), (212, 45893), (214, 45878), (219, 45836), (224, 45788), (227, 45758), (232, 45731), (266, 45605), (268, 45599), (271, 45572), (280, 45530), (281, 45527), (286, 45512), (288, 45506), (301, 45452), (303, 45443), (352, 45215), (358, 45179),

Gene: Arbitr\_50 Start: 46670, Stop: 44955, Start Num: 67

Candidate Starts for Arbitr\_50:

(10, 47099), (12, 47063), (14, 46991), (20, 46925), (Start: 67 @46670 has 49 MA's), (75, 46658), (102, 46487), (Start: 103 @46484 has 1 MA's), (108, 46448), (109, 46436), (111, 46427), (119, 46391), (120, 46388), (123, 46355), (134, 46292), (147, 46184), (151, 46145), (163, 46064), (167, 46031), (169, 46022), (173, 45983), (176, 45962), (177, 45959), (183, 45917), (185, 45902), (186, 45887), (193, 45857), (198, 45830), (203, 45782), (209, 45758), (210, 45755), (212, 45728), (213, 45716), (215, 45710), (219, 45671), (224, 45623), (227, 45593), (228, 45587), (237, 45542), (251, 45467), (253, 45455), (261, 45428), (262, 45425), (265, 45410), (275, 45344), (286, 45311), (309, 45233),

(318, 45203), (319, 45200), (322, 45188), (331, 45149), (344, 45071), (352, 45029), (366, 44963),

Gene: Ares\_51 Start: 46639, Stop: 44924, Start Num: 67

Candidate Starts for Ares\_51:

(10, 47068), (12, 47032), (14, 46960), (16, 46945), (20, 46894), (Start: 67 @46639 has 49 MA's), (75, 46627), (102, 46456), (Start: 103 @46453 has 1 MA's), (108, 46417), (109, 46405), (111, 46396), (119, 46360), (120, 46357), (123, 46324), (134, 46261), (147, 46153), (151, 46114), (163, 46033), (167, 46000), (169, 45991), (173, 45952), (176, 45931), (177, 45928), (183, 45886), (185, 45871), (186, 45856), (193, 45826), (198, 45799), (203, 45751), (209, 45727), (210, 45724), (212, 45697), (213, 45685), (215, 45679), (219, 45640), (224, 45592), (227, 45562), (228, 45556), (237, 45511), (251, 45436), (253, 45424), (261, 45397), (262, 45394), (265, 45379), (275, 45313), (286, 45280), (309, 45202), (318, 45172), (319, 45169), (322, 45157), (331, 45118), (344, 45040), (345, 45037), (352, 44998), (366, 44932),

Gene: Ashraf\_52 Start: 46729, Stop: 44933, Start Num: 38

Candidate Starts for Ashraf\_52:

(Start: 38 @46729 has 111 MA's), (Start: 69 @46636 has 103 MA's), (Start: 82 @46612 has 11 MA's), (Start: 87 @46555 has 1 MA's), (Start: 89 @46546 has 2 MA's), (104, 46456), (108, 46423), (119, 46366), (121, 46354), (123, 46330), (126, 46318), (127, 46309), (138, 46249), (147, 46159), (151, 46114), (158, 46054), (167, 46000), (173, 45952), (176, 45931), (198, 45799), (208, 45730), (210, 45724), (212, 45697), (214, 45682), (219, 45640), (224, 45592), (227, 45562), (232, 45535), (266, 45409), (268, 45403), (271, 45376), (281, 45331), (286, 45316), (288, 45310), (301, 45256), (303, 45247), (352, 45019), (358, 44983),

Gene: Asis\_54 Start: 44643, Stop: 46481, Start Num: 77

Candidate Starts for Asis\_54:

(Start: 77 @44643 has 31 MA's), (86, 44688), (90, 44724), (92, 44730), (94, 44757), (102, 44817), (111, 44877), (123, 44949), (124, 44952), (126, 44961), (131, 44997), (137, 45021), (140, 45063), (143, 45084), (147, 45108), (149, 45135), (153, 45168), (155, 45195), (165, 45243), (168, 45273), (184, 45393), (185, 45402), (187, 45420), (191, 45438), (209, 45549), (210, 45552), (213, 45591), (219, 45636), (220, 45639), (230, 45729), (283, 46011), (293, 46038), (316, 46212), (324, 46248), (328, 46263), (348, 46365), (354, 46413), (357, 46422),

Gene: Athena\_54 Start: 47905, Stop: 46208, Start Num: 64

Candidate Starts for Athena\_54:

(Start: 64 @47905 has 34 MA's), (Start: 103 @47707 has 1 MA's), (108, 47671), (119, 47614), (127, 47557), (134, 47515), (136, 47509), (141, 47452), (146, 47425), (147, 47407), (158, 47302), (171, 47212), (173, 47200), (176, 47179), (183, 47134), (193, 47071), (205, 46987), (209, 46972), (210, 46969), (211, 46966), (212, 46942), (215, 46924), (219, 46885), (224, 46837), (227, 46807), (231, 46783), (238, 46741), (264, 46663), (270, 46636), (277, 46585), (286, 46561), (301, 46513), (312, 46474), (325, 46432), (344, 46327), (352, 46285), (353, 46270),

Gene: Audrey\_52 Start: 47153, Stop: 45456, Start Num: 64

Candidate Starts for Audrey\_52:

(Start: 64 @47153 has 34 MA's), (Start: 103 @46955 has 1 MA's), (108, 46919), (119, 46862), (127, 46805), (134, 46763), (136, 46757), (141, 46700), (146, 46673), (147, 46655), (158, 46550), (171, 46460), (173, 46448), (176, 46427), (183, 46382), (193, 46319), (205, 46235), (209, 46220), (210, 46217), (211, 46214), (212, 46190), (215, 46172), (219, 46133), (224, 46085), (227, 46055), (231, 46031), (238, 45989), (264, 45911), (270, 45884), (277, 45833), (286, 45809), (312, 45722), (325, 45680), (344, 45575), (347, 45560), (352, 45533), (353, 45518),

Gene: Austelle\_48 Start: 48078, Stop: 46366, Start Num: 69

Candidate Starts for Austelle\_48:



(Start: 69 @48078 has 103 MA's), (102, 47895), (108, 47856), (111, 47835), (123, 47766), (138, 47685), (145, 47616), (147, 47595), (158, 47496), (163, 47475), (167, 47442), (169, 47433), (172, 47397), (173, 47394), (177, 47370), (194, 47259), (196, 47253), (198, 47241), (208, 47172), (210, 47166), (212, 47139), (213, 47127), (214, 47124), (219, 47082), (224, 47034), (227, 47004), (262, 46869), (265, 46854), (266, 46848), (267, 46845), (272, 46812), (273, 46806), (274, 46797), (280, 46770), (285, 46755), (286, 46752), (290, 46743), (295, 46725), (298, 46698), (303, 46677), (329, 46566), (352, 46443),

Gene: Axumite\_46 Start: 40113, Stop: 38449, Start Num: 67

Candidate Starts for Axumite\_46:

(36, 40215), (Start: 65 @40116 has 1 MA's), (Start: 67 @40113 has 49 MA's), (101, 39939), (102, 39933), (104, 39927), (108, 39894), (109, 39882), (119, 39837), (145, 39651), (147, 39630), (158, 39531), (163, 39510), (167, 39477), (173, 39429), (181, 39369), (207, 39213), (209, 39204), (212, 39174), (214, 39159), (219, 39117), (224, 39069), (227, 39039), (229, 39030), (286, 38796), (301, 38757), (303, 38748), (322, 38685), (346, 38562), (352, 38526), (368, 38460),

Gene: BFK20\_ORF41 Start: 32249, Stop: 30636, Start Num: 74

Candidate Starts for BFK20\_ORF41:

(Start: 74 @32249 has 2 MA's), (Start: 77 @32243 has 31 MA's), (84, 32204), (92, 32156), (102, 32081), (104, 32075), (108, 32042), (110, 32024), (111, 32021), (119, 31985), (128, 31925), (135, 31883), (137, 31877), (138, 31868), (173, 31592), (174, 31589), (181, 31532), (185, 31511), (196, 31451), (207, 31376), (210, 31364), (214, 31322), (218, 31295), (219, 31280), (220, 31277), (224, 31232), (227, 31202), (228, 31196), (229, 31193), (266, 31073), (267, 31070), (285, 30992), (288, 30983), (323, 30860), (337, 30809), (338, 30803), (363, 30656),

Gene: BabyGotBac\_55 Start: 44649, Stop: 46487, Start Num: 77

Candidate Starts for BabyGotBac\_55:

(Start: 77 @44649 has 31 MA's), (86, 44694), (90, 44730), (92, 44736), (94, 44763), (102, 44823), (111, 44883), (123, 44955), (124, 44958), (126, 44967), (131, 45003), (137, 45027), (140, 45069), (143, 45090), (147, 45114), (149, 45141), (153, 45174), (155, 45201), (165, 45249), (168, 45279), (184, 45399), (185, 45408), (187, 45426), (191, 45444), (209, 45555), (210, 45558), (213, 45597), (219, 45642), (220, 45645), (230, 45735), (283, 46017), (293, 46044), (316, 46218), (324, 46254), (328, 46269), (348, 46371), (354, 46419), (357, 46428),

Gene: Badfish\_53 Start: 47195, Stop: 45399, Start Num: 38

Candidate Starts for Badfish\_53:

(Start: 38 @47195 has 111 MA's), (Start: 69 @47102 has 103 MA's), (Start: 82 @47078 has 11 MA's), (Start: 87 @47021 has 1 MA's), (Start: 89 @47012 has 2 MA's), (104, 46922), (108, 46889), (119, 46832), (121, 46820), (123, 46796), (126, 46784), (127, 46775), (138, 46715), (147, 46625), (151, 46580), (158, 46520), (167, 46466), (173, 46418), (176, 46397), (198, 46265), (208, 46196), (210, 46190), (212, 46163), (214, 46148), (219, 46106), (224, 46058), (227, 46028), (232, 46001), (266, 45875), (268, 45869), (271, 45842), (280, 45800), (281, 45797), (286, 45782), (288, 45776), (301, 45722), (303, 45713), (352, 45485), (358, 45449),

Gene: Bae\_53 Start: 49105, Stop: 47411, Start Num: 70

Candidate Starts for Bae\_53:

(Start: 70 @49105 has 10 MA's), (Start: 82 @49078 has 11 MA's), (92, 49003), (106, 48901), (108, 48889), (123, 48799), (134, 48736), (138, 48718), (145, 48649), (147, 48628), (163, 48508), (167, 48475), (173, 48427), (176, 48406), (196, 48286), (202, 48250), (207, 48211), (208, 48205), (210, 48199), (211, 48196), (212, 48172), (213, 48160), (214, 48157), (219, 48115), (224, 48067), (227, 48037), (250, 47941), (259, 47914), (262, 47902), (266, 47881), (267, 47878), (273, 47839), (280, 47803), (286, 47785), (337, 47584), (352, 47488),

Gene: Baloo\_52 Start: 47156, Stop: 45459, Start Num: 64

Candidate Starts for Baloo\_52:

(Start: 64 @47156 has 34 MA's), (Start: 103 @46958 has 1 MA's), (108, 46922), (119, 46865), (127, 46808), (134, 46766), (136, 46760), (141, 46703), (146, 46676), (147, 46658), (158, 46553), (171, 46463), (173, 46451), (176, 46430), (183, 46385), (193, 46322), (205, 46238), (209, 46223), (210, 46220), (211, 46217), (212, 46193), (215, 46175), (219, 46136), (224, 46088), (227, 46058), (231, 46034), (238, 45992), (264, 45914), (270, 45887), (277, 45836), (286, 45812), (312, 45725), (325, 45683), (344, 45578), (347, 45563), (352, 45536), (353, 45521),

Gene: Bananafish\_51 Start: 46573, Stop: 44858, Start Num: 67

Candidate Starts for Bananafish\_51:

(10, 47002), (12, 46966), (14, 46894), (20, 46828), (Start: 67 @46573 has 49 MA's), (75, 46561), (102, 46390), (Start: 103 @46387 has 1 MA's), (108, 46351), (109, 46339), (111, 46330), (119, 46294), (120, 46291), (123, 46258), (134, 46195), (147, 46087), (151, 46048), (163, 45967), (167, 45934), (169, 45925), (173, 45886), (176, 45865), (177, 45862), (183, 45820), (185, 45805), (186, 45790), (193, 45760), (198, 45733), (203, 45685), (209, 45661), (210, 45658), (212, 45631), (213, 45619), (215, 45613), (219, 45574), (224, 45526), (227, 45496), (228, 45490), (237, 45445), (251, 45370), (253, 45358), (261, 45331), (262, 45328), (265, 45313), (275, 45247), (286, 45214), (309, 45136), (318, 45106), (319, 45103), (322, 45091), (331, 45052), (344, 44974), (345, 44971), (352, 44932), (366, 44866),

Gene: Banjo\_51 Start: 46633, Stop: 44930, Start Num: 69

Candidate Starts for Banjo\_51:

(Start: 69 @46633 has 103 MA's), (Start: 82 @46609 has 11 MA's), (Start: 87 @46552 has 1 MA's), (Start: 89 @46543 has 2 MA's), (104, 46453), (108, 46420), (119, 46363), (121, 46351), (123, 46327), (126, 46315), (127, 46306), (138, 46246), (147, 46156), (151, 46111), (158, 46051), (167, 45997), (173, 45949), (176, 45928), (198, 45796), (208, 45727), (210, 45721), (212, 45694), (214, 45679), (219, 45637), (224, 45589), (227, 45559), (232, 45532), (266, 45406), (268, 45400), (271, 45373), (280, 45331), (281, 45328), (286, 45313), (288, 45307), (301, 45253), (303, 45244), (352, 45016), (358, 44980),

Gene: Basato\_53 Start: 47191, Stop: 45512, Start Num: 82

Candidate Starts for Basato\_53:

(Start: 68 @47215 has 66 MA's), (Start: 82 @47191 has 11 MA's), (Start: 87 @47134 has 1 MA's), (Start: 89 @47125 has 2 MA's), (104, 47035), (108, 47002), (119, 46945), (121, 46933), (123, 46909), (126, 46897), (127, 46888), (138, 46828), (147, 46738), (151, 46693), (158, 46633), (167, 46579), (173, 46531), (176, 46510), (198, 46378), (208, 46309), (210, 46303), (212, 46276), (214, 46261), (219, 46219), (224, 46171), (227, 46141), (232, 46114), (266, 45988), (268, 45982), (271, 45955), (281, 45910), (286, 45895), (288, 45889), (301, 45835), (303, 45826), (352, 45598), (358, 45562),

Gene: BatteryCK\_51 Start: 46669, Stop: 44873, Start Num: 38

Candidate Starts for BatteryCK\_51:

(Start: 38 @46669 has 111 MA's), (Start: 69 @46576 has 103 MA's), (Start: 82 @46552 has 11 MA's), (Start: 87 @46495 has 1 MA's), (Start: 89 @46486 has 2 MA's), (104, 46396), (108, 46363), (119, 46306), (121, 46294), (123, 46270), (126, 46258), (127, 46249), (138, 46189), (147, 46099), (151, 46054), (158, 45994), (167, 45940), (173, 45892), (176, 45871), (198, 45739), (208, 45670), (210, 45664), (212, 45637), (214, 45622), (219, 45580), (224, 45532), (227, 45502), (232, 45475), (266, 45349), (268, 45343), (271, 45316), (281, 45271), (286, 45256), (288, 45250), (301, 45196), (303, 45187), (352, 44959), (358, 44923),

Gene: BayC\_54 Start: 44647, Stop: 46485, Start Num: 77

Candidate Starts for BayC\_54:

(Start: 77 @44647 has 31 MA's), (86, 44692), (90, 44728), (92, 44734), (94, 44761), (102, 44821), (111, 44881), (123, 44953), (124, 44956), (126, 44965), (131, 45001), (137, 45025), (140, 45067), (143, 45088), (147, 45112), (149, 45139), (153, 45172), (155, 45199), (165, 45247), (168, 45277), (184, 45397), (185, 45406), (187, 45424), (191, 45442), (209, 45553), (210, 45556), (213, 45595), (219, 45640), (220, 45643), (230, 45733), (283, 46015), (293, 46042), (316, 46216), (324, 46252), (328, 46267), (348, 46369), (354, 46417), (357, 46426),

Gene: Beaglebox\_51 Start: 46747, Stop: 44951, Start Num: 38

Candidate Starts for Beaglebox\_51:

(Start: 38 @46747 has 111 MA's), (Start: 69 @46654 has 103 MA's), (Start: 82 @46630 has 11 MA's), (Start: 87 @46573 has 1 MA's), (Start: 89 @46564 has 2 MA's), (104, 46474), (108, 46441), (119, 46384), (121, 46372), (123, 46348), (126, 46336), (127, 46327), (138, 46267), (147, 46177), (151, 46132), (158, 46072), (167, 46018), (173, 45970), (176, 45949), (198, 45817), (208, 45748), (210, 45742), (212, 45715), (214, 45700), (219, 45658), (224, 45610), (227, 45580), (232, 45553), (266, 45427), (268, 45421), (271, 45394), (280, 45352), (281, 45349), (286, 45334), (288, 45328), (301, 45274), (303, 45265), (352, 45037), (358, 45001),

Gene: Ben11\_52 Start: 47438, Stop: 45741, Start Num: 64

Candidate Starts for Ben11\_52:

(Start: 64 @47438 has 34 MA's), (Start: 103 @47240 has 1 MA's), (108, 47204), (119, 47147), (127, 47090), (134, 47048), (136, 47042), (141, 46985), (146, 46958), (147, 46940), (158, 46835), (171, 46745), (173, 46733), (176, 46712), (183, 46667), (193, 46604), (205, 46520), (209, 46505), (210, 46502), (211, 46499), (212, 46475), (215, 46457), (219, 46418), (224, 46370), (227, 46340), (231, 46316), (238, 46274), (264, 46196), (270, 46169), (277, 46118), (286, 46094), (312, 46007), (325, 45965), (344, 45860), (352, 45818), (353, 45803),

Gene: Bernardo\_53 Start: 47686, Stop: 45887, Start Num: 43

Candidate Starts for Bernardo\_53:

(3, 48169), (4, 48112), (5, 48046), (8, 48031), (9, 48013), (17, 47872), (19, 47851), (25, 47776), (Start: 43 @47686 has 7 MA's), (51, 47662), (Start: 54 @47656 has 3 MA's), (55, 47653), (Start: 64 @47584 has 34 MA's), (Start: 103 @47386 has 1 MA's), (108, 47350), (119, 47293), (127, 47236), (134, 47194), (136, 47188), (141, 47131), (146, 47104), (147, 47086), (158, 46981), (171, 46891), (173, 46879), (176, 46858), (183, 46813), (193, 46750), (205, 46666), (209, 46651), (210, 46648), (211, 46645), (212, 46621), (215, 46603), (219, 46564), (224, 46516), (227, 46486), (231, 46462), (238, 46420), (264, 46342), (270, 46315), (277, 46264), (286, 46240), (301, 46192), (312, 46153), (325, 46111), (344, 46006), (352, 45964), (353, 45949),

Gene: BiggityBass\_45 Start: 41882, Stop: 40221, Start Num: 67

Candidate Starts for BiggityBass\_45:

(Start: 67 @41882 has 49 MA's), (86, 41816), (92, 41774), (Start: 103 @41696 has 1 MA's), (104, 41693), (108, 41660), (119, 41603), (145, 41417), (147, 41396), (161, 41282), (163, 41276), (167, 41243), (168, 41237), (173, 41195), (176, 41174), (180, 41156), (181, 41135), (199, 41036), (209, 40970), (212, 40940), (214, 40925), (219, 40883), (224, 40835), (227, 40805), (236, 40757), (266, 40655), (273, 40613), (285, 40565), (286, 40562), (301, 40523), (303, 40514), (322, 40451), (346, 40328), (352, 40292),

Gene: BirdsNest\_55 Start: 46706, Stop: 44940, Start Num: 74

Candidate Starts for BirdsNest\_55:

(Start: 74 @46706 has 2 MA's), (104, 46526), (108, 46493), (119, 46436), (145, 46250), (147, 46229), (151, 46190), (159, 46127), (163, 46109), (173, 46028), (196, 45887), (210, 45800), (212, 45773), (213, 45761), (214, 45758), (219, 45716), (224, 45668), (227, 45638), (232, 45611), (237, 45587), (263, 45449), (266, 45434), (279, 45359), (305, 45251), (315, 45224), (317, 45215), (322, 45197), (332, 45155), (352, 45041), (362, 44990),

Gene: Bishoperium\_51 Start: 46648, Stop: 44945, Start Num: 69

Candidate Starts for Bishoperium\_51:

(Start: 38 @46741 has 111 MA's), (Start: 69 @46648 has 103 MA's), (Start: 82 @46624 has 11 MA's), (Start: 87 @46567 has 1 MA's), (Start: 89 @46558 has 2 MA's), (104, 46468), (108, 46435), (119, 46378), (121, 46366), (123, 46342), (126, 46330), (127, 46321), (138, 46261), (147, 46171), (151, 46126), (158, 46066), (167, 46012), (173, 45964), (176, 45943), (198, 45811), (208, 45742), (210, 45736), (212, 45709), (214, 45694), (219, 45652), (224, 45604), (227, 45574), (232, 45547), (266, 45421), (268, 45415), (271, 45388), (281, 45343), (286, 45328), (288, 45322), (301, 45268), (303, 45259), (352, 45031), (358, 44995),

Gene: BlackStallion\_53 Start: 47201, Stop: 45405, Start Num: 38

Candidate Starts for BlackStallion\_53:

(Start: 38 @47201 has 111 MA's), (Start: 69 @47108 has 103 MA's), (Start: 82 @47084 has 11 MA's), (Start: 87 @47027 has 1 MA's), (Start: 89 @47018 has 2 MA's), (104, 46928), (108, 46895), (119, 46838), (121, 46826), (123, 46802), (126, 46790), (127, 46781), (138, 46721), (147, 46631), (151, 46586), (158, 46526), (173, 46424), (176, 46403), (198, 46271), (208, 46202), (210, 46196), (212, 46169), (214, 46154), (219, 46112), (224, 46064), (227, 46034), (232, 46007), (266, 45881), (268, 45875), (271, 45848), (280, 45806), (281, 45803), (286, 45788), (288, 45782), (301, 45728), (303, 45719), (352, 45491), (358, 45455),

Gene: Blocker23\_51 Start: 46691, Stop: 44976, Start Num: 67

Candidate Starts for Blocker23\_51:

(26, 46853), (55, 46757), (57, 46751), (Start: 67 @46691 has 49 MA's), (75, 46679), (102, 46508), (Start: 103 @46505 has 1 MA's), (108, 46469), (109, 46457), (111, 46448), (119, 46412), (120, 46409), (123, 46376), (134, 46313), (147, 46205), (151, 46166), (163, 46085), (167, 46052), (169, 46043), (173, 46004), (176, 45983), (177, 45980), (183, 45938), (185, 45923), (186, 45908), (193, 45878), (198, 45851), (203, 45803), (209, 45779), (210, 45776), (212, 45749), (213, 45737), (215, 45731), (219, 45692), (224, 45644), (227, 45614), (228, 45608), (237, 45563), (251, 45488), (253, 45476), (261, 45449), (262, 45446), (265, 45431), (275, 45365), (286, 45332), (309, 45254), (318, 45224), (319, 45221), (322, 45209), (331, 45170), (344, 45092), (352, 45050), (366, 44984),

Gene: BlueHusk\_52 Start: 46547, Stop: 44751, Start Num: 38

Candidate Starts for BlueHusk\_52:

(Start: 38 @46547 has 111 MA's), (Start: 69 @46454 has 103 MA's), (Start: 82 @46430 has 11 MA's), (Start: 87 @46373 has 1 MA's), (Start: 89 @46364 has 2 MA's), (104, 46274), (108, 46241), (119, 46184), (121, 46172), (123, 46148), (126, 46136), (127, 46127), (138, 46067), (147, 45977), (151, 45932), (158, 45872), (173, 45770), (176, 45749), (198, 45617), (208, 45548), (210, 45542), (212, 45515), (214, 45500), (219, 45458), (224, 45410), (227, 45380), (232, 45353), (266, 45227), (268, 45221), (271, 45194), (281, 45149), (286, 45134), (288, 45128), (301, 45074), (303, 45065), (352, 44837), (358, 44801),

Gene: Bluephacebaby\_51 Start: 46744, Stop: 44948, Start Num: 38

Candidate Starts for Bluephacebaby\_51:

(Start: 38 @46744 has 111 MA's), (Start: 69 @46651 has 103 MA's), (Start: 82 @46627 has 11 MA's), (Start: 87 @46570 has 1 MA's), (Start: 89 @46561 has 2 MA's), (104, 46471), (108, 46438), (119, 46381), (121, 46369), (123, 46345), (126, 46333), (127, 46324), (138, 46264), (147, 46174), (151, 46129), (158, 46069), (167, 46015), (173, 45967), (176, 45946), (198, 45814), (208, 45745), (210, 45739), (212, 45712), (214, 45697), (219, 45655), (224, 45607), (227, 45577), (232, 45550), (266, 45424), (268, 45418), (271, 45391), (281, 45346), (286, 45331), (288, 45325), (301, 45271), (303, 45262), (352, 45034), (358, 44998),

Gene: BobRoss2024\_45 Start: 40037, Stop: 38295, Start Num: 67

Candidate Starts for BobRoss2024\_45:

(28, 40190), (Start: 67 @40037 has 49 MA's), (Start: 82 @40004 has 11 MA's), (92, 39929), (Start: 103 @39851 has 1 MA's), (108, 39815), (113, 39785), (134, 39659), (145, 39572), (147, 39551), (172, 39350), (173, 39347), (176, 39326), (180, 39308), (183, 39281), (186, 39251), (198, 39194), (207, 39131), (208, 39125), (209, 39122), (210, 39119), (212, 39092), (214, 39077), (219, 39035), (227, 38957), (229, 38948), (232, 38930), (266, 38810), (275, 38750), (303, 38582), (352, 38360), (362, 38309),

Gene: BobbyK\_48 Start: 47417, Stop: 45708, Start Num: 69

Candidate Starts for BobbyK\_48:

(Start: 69 @47417 has 103 MA's), (102, 47234), (108, 47195), (111, 47174), (123, 47105), (138, 47024), (145, 46955), (147, 46934), (158, 46835), (163, 46814), (167, 46781), (169, 46772), (173, 46733), (177, 46709), (194, 46598), (196, 46592), (198, 46580), (208, 46511), (210, 46505), (212, 46478), (213, 46466), (214, 46463), (219, 46421), (224, 46373), (227, 46343), (237, 46292), (262, 46211), (265, 46196), (266, 46190), (267, 46187), (272, 46154), (273, 46148), (274, 46139), (280, 46112), (285, 46097), (286, 46094), (290, 46085), (295, 46067), (298, 46040), (303, 46019), (329, 45908), (352, 45785), (359, 45746), (362, 45734),

Gene: Boehler\_52 Start: 46924, Stop: 45254, Start Num: 68

Candidate Starts for Boehler\_52:

(Start: 68 @46924 has 66 MA's), (Start: 87 @46876 has 1 MA's), (Start: 89 @46867 has 2 MA's), (104, 46777), (108, 46744), (119, 46687), (121, 46675), (123, 46651), (126, 46639), (127, 46630), (138, 46570), (147, 46480), (151, 46435), (158, 46375), (173, 46273), (176, 46252), (198, 46120), (208, 46051), (210, 46045), (212, 46018), (214, 46003), (219, 45961), (224, 45913), (227, 45883), (232, 45856), (266, 45730), (268, 45724), (271, 45697), (280, 45655), (281, 45652), (286, 45637), (288, 45631), (301, 45577), (303, 45568), (352, 45340), (358, 45304),

Gene: Boilgate\_67 Start: 49300, Stop: 50931, Start Num: 77

Candidate Starts for Boilgate\_67:

(Start: 77 @49300 has 31 MA's), (93, 49399), (102, 49471), (108, 49510), (147, 49774), (157, 49870), (161, 49888), (173, 49975), (187, 50074), (188, 50083), (198, 50128), (204, 50179), (206, 50188), (210, 50203), (212, 50230), (214, 50245), (215, 50248), (219, 50287), (224, 50335), (230, 50374), (231, 50383), (233, 50395), (252, 50449), (265, 50485), (266, 50491), (292, 50602), (327, 50695), (328, 50698), (335, 50716), (352, 50818), (362, 50869), (372, 50920), (373, 50923),

Gene: Boyle\_51 Start: 46706, Stop: 44991, Start Num: 67

Candidate Starts for Boyle\_51:

(10, 47135), (12, 47099), (14, 47027), (16, 47012), (20, 46961), (Start: 67 @46706 has 49 MA's), (75, 46694), (102, 46523), (Start: 103 @46520 has 1 MA's), (108, 46484), (109, 46472), (111, 46463), (119, 46427), (120, 46424), (123, 46391), (134, 46328), (147, 46220), (151, 46181), (163, 46100), (167, 46067), (169, 46058), (173, 46019), (176, 45998), (177, 45995), (183, 45953), (185, 45938), (186, 45923), (193, 45893), (198, 45866), (203, 45818), (209, 45794), (210, 45791), (212, 45764), (213, 45752), (215, 45746), (219, 45707), (224, 45659), (227, 45629), (228, 45623), (237, 45578), (251, 45503), (253, 45491), (261, 45464), (262, 45461), (265, 45446), (275, 45380), (286, 45347), (309, 45269), (318, 45239), (319, 45236), (322, 45224), (331, 45185), (344, 45107), (352, 45065), (366, 44999),

Gene: Briakila\_52 Start: 47609, Stop: 45912, Start Num: 64

Candidate Starts for Briakila\_52:

(Start: 64 @47609 has 34 MA's), (Start: 103 @47411 has 1 MA's), (108, 47375), (119, 47318), (127, 47261), (134, 47219), (136, 47213), (141, 47156), (146, 47129), (147, 47111), (158, 47006), (171, 46916), (173, 46904), (176, 46883), (183, 46838), (193, 46775), (205, 46691), (209, 46676), (210, 46673), (211, 46670), (212, 46646), (215, 46628), (219, 46589), (224, 46541), (227, 46511), (231,

46487), (238, 46445), (264, 46367), (270, 46340), (275, 46298), (277, 46289), (286, 46265), (312, 46178), (325, 46136), (344, 46031), (352, 45989), (353, 45974), (356, 45956),

Gene: Brilliant\_52 Start: 46743, Stop: 44947, Start Num: 38

Candidate Starts for Brilliant\_52:

(Start: 38 @46743 has 111 MA's), (Start: 69 @46650 has 103 MA's), (Start: 82 @46626 has 11 MA's), (Start: 87 @46569 has 1 MA's), (Start: 89 @46560 has 2 MA's), (104, 46470), (108, 46437), (119, 46380), (121, 46368), (123, 46344), (126, 46332), (127, 46323), (138, 46263), (147, 46173), (151, 46128), (158, 46068), (167, 46014), (173, 45966), (176, 45945), (198, 45813), (208, 45744), (210, 45738), (212, 45711), (214, 45696), (219, 45654), (224, 45606), (227, 45576), (232, 45549), (266, 45423), (268, 45417), (271, 45390), (281, 45345), (286, 45330), (288, 45324), (301, 45270), (303, 45261), (352, 45033), (358, 44997),

Gene: BrownCNA\_49 Start: 47699, Stop: 45987, Start Num: 69

Candidate Starts for BrownCNA\_49:

(Start: 69 @47699 has 103 MA's), (102, 47516), (108, 47477), (111, 47456), (123, 47387), (138, 47306), (145, 47237), (147, 47216), (158, 47117), (163, 47096), (167, 47063), (169, 47054), (172, 47018), (173, 47015), (177, 46991), (194, 46880), (196, 46874), (198, 46862), (208, 46793), (210, 46787), (212, 46760), (213, 46748), (214, 46745), (215, 46742), (219, 46703), (224, 46655), (227, 46625), (237, 46574), (262, 46490), (265, 46475), (266, 46469), (267, 46466), (272, 46433), (273, 46427), (274, 46418), (280, 46391), (285, 46376), (286, 46373), (290, 46364), (295, 46346), (298, 46319), (303, 46298), (329, 46187), (349, 46079), (352, 46064), (359, 46025),

Gene: Brownie5\_51 Start: 46722, Stop: 45007, Start Num: 67

Candidate Starts for Brownie5\_51:

(10, 47151), (12, 47115), (14, 47043), (16, 47028), (20, 46977), (Start: 67 @46722 has 49 MA's), (75, 46710), (102, 46539), (Start: 103 @46536 has 1 MA's), (108, 46500), (109, 46488), (111, 46479), (119, 46443), (120, 46440), (123, 46407), (134, 46344), (147, 46236), (151, 46197), (163, 46116), (167, 46083), (169, 46074), (173, 46035), (176, 46014), (177, 46011), (183, 45969), (185, 45954), (186, 45939), (193, 45909), (198, 45882), (203, 45834), (209, 45810), (210, 45807), (212, 45780), (213, 45768), (215, 45762), (219, 45723), (224, 45675), (227, 45645), (228, 45639), (237, 45594), (251, 45519), (253, 45507), (261, 45480), (262, 45477), (265, 45462), (275, 45396), (286, 45363), (309, 45285), (318, 45255), (319, 45252), (322, 45240), (331, 45201), (344, 45123), (352, 45081), (366, 45015),

Gene: Buckeye\_52 Start: 46971, Stop: 45268, Start Num: 68

Candidate Starts for Buckeye\_52:

(13, 47304), (15, 47277), (Start: 68 @46971 has 66 MA's), (Start: 82 @46947 has 11 MA's), (Start: 87 @46890 has 1 MA's), (Start: 89 @46881 has 2 MA's), (104, 46791), (108, 46758), (119, 46701), (121, 46689), (123, 46665), (126, 46653), (127, 46644), (138, 46584), (147, 46494), (151, 46449), (158, 46389), (167, 46335), (173, 46287), (176, 46266), (198, 46134), (208, 46065), (210, 46059), (212, 46032), (214, 46017), (219, 45975), (224, 45927), (227, 45897), (232, 45870), (266, 45744), (268, 45738), (271, 45711), (281, 45666), (286, 45651), (288, 45645), (301, 45591), (303, 45582), (352, 45354), (358, 45318),

Gene: Burr\_51 Start: 46738, Stop: 44942, Start Num: 38

Candidate Starts for Burr\_51:

(Start: 38 @46738 has 111 MA's), (Start: 69 @46645 has 103 MA's), (Start: 82 @46621 has 11 MA's), (Start: 87 @46564 has 1 MA's), (Start: 89 @46555 has 2 MA's), (104, 46465), (108, 46432), (119, 46375), (121, 46363), (123, 46339), (126, 46327), (127, 46318), (138, 46258), (147, 46168), (151, 46123), (158, 46063), (167, 46009), (173, 45961), (176, 45940), (198, 45808), (208, 45739), (210, 45733), (212, 45706), (214, 45691), (219, 45649), (224, 45601), (227, 45571), (232, 45544), (266, 45418), (268, 45412), (271, 45385), (281, 45340), (286, 45325), (288, 45319), (301, 45265), (303,

45256), (352, 45028), (358, 44992),

Gene: CRB2\_54 Start: 50445, Stop: 48658, Start Num: 42

Candidate Starts for CRB2\_54:

(Start: 42 @50445 has 1 MA's), (Start: 70 @50361 has 10 MA's), (92, 50259), (95, 50229), (Start: 103 @50181 has 1 MA's), (108, 50145), (111, 50124), (119, 50088), (123, 50052), (145, 49902), (147, 49881), (148, 49860), (167, 49728), (172, 49683), (173, 49680), (177, 49656), (185, 49599), (196, 49539), (198, 49527), (210, 49452), (212, 49425), (213, 49413), (214, 49410), (219, 49368), (224, 49320), (227, 49290), (243, 49212), (262, 49161), (266, 49140), (275, 49080), (280, 49062), (286, 49044), (332, 48849), (352, 48735), (362, 48684),

Gene: CaiB\_49 Start: 42838, Stop: 41174, Start Num: 67

Candidate Starts for CaiB\_49:

(Start: 67 @42838 has 49 MA's), (92, 42733), (95, 42703), (102, 42658), (Start: 103 @42655 has 1 MA's), (108, 42619), (109, 42607), (145, 42373), (147, 42352), (158, 42250), (172, 42151), (173, 42148), (178, 42115), (196, 42007), (208, 41926), (209, 41923), (210, 41920), (212, 41893), (213, 41881), (214, 41878), (219, 41836), (227, 41758), (229, 41749), (235, 41716), (258, 41638), (266, 41608), (267, 41605), (275, 41548), (285, 41518), (286, 41515), (332, 41365), (352, 41248), (368, 41182),

Gene: Calamitous\_51 Start: 46572, Stop: 44857, Start Num: 67

Candidate Starts for Calamitous\_51:

(10, 47001), (12, 46965), (14, 46893), (20, 46827), (Start: 67 @46572 has 49 MA's), (75, 46560), (102, 46389), (Start: 103 @46386 has 1 MA's), (108, 46350), (109, 46338), (111, 46329), (119, 46293), (120, 46290), (123, 46257), (134, 46194), (147, 46086), (151, 46047), (163, 45966), (167, 45933), (169, 45924), (173, 45885), (176, 45864), (177, 45861), (183, 45819), (185, 45804), (186, 45789), (193, 45759), (198, 45732), (203, 45684), (209, 45660), (210, 45657), (212, 45630), (213, 45618), (215, 45612), (219, 45573), (224, 45525), (227, 45495), (228, 45489), (237, 45444), (251, 45369), (253, 45357), (261, 45330), (262, 45327), (265, 45312), (275, 45246), (286, 45213), (309, 45135), (318, 45105), (319, 45102), (322, 45090), (331, 45051), (344, 44973), (345, 44970), (352, 44931), (366, 44865),

Gene: CamL\_52 Start: 46940, Stop: 45237, Start Num: 69

Candidate Starts for CamL\_52:

(Start: 69 @46940 has 103 MA's), (Start: 82 @46916 has 11 MA's), (Start: 87 @46859 has 1 MA's), (Start: 89 @46850 has 2 MA's), (104, 46760), (108, 46727), (119, 46670), (121, 46658), (123, 46634), (126, 46622), (127, 46613), (138, 46553), (147, 46463), (151, 46418), (158, 46358), (167, 46304), (173, 46256), (176, 46235), (198, 46103), (208, 46034), (210, 46028), (212, 46001), (214, 45986), (219, 45944), (224, 45896), (227, 45866), (232, 45839), (266, 45713), (268, 45707), (271, 45680), (280, 45638), (281, 45635), (286, 45620), (288, 45614), (301, 45560), (303, 45551), (352, 45323), (358, 45287),

Gene: CampRoach\_53 Start: 47168, Stop: 45372, Start Num: 38

Candidate Starts for CampRoach\_53:

(Start: 38 @47168 has 111 MA's), (Start: 69 @47075 has 103 MA's), (Start: 82 @47051 has 11 MA's), (Start: 87 @46994 has 1 MA's), (Start: 89 @46985 has 2 MA's), (104, 46895), (108, 46862), (119, 46805), (121, 46793), (123, 46769), (126, 46757), (127, 46748), (138, 46688), (147, 46598), (151, 46553), (158, 46493), (167, 46439), (173, 46391), (176, 46370), (198, 46238), (208, 46169), (210, 46163), (212, 46136), (214, 46121), (219, 46079), (224, 46031), (227, 46001), (232, 45974), (266, 45848), (268, 45842), (271, 45815), (281, 45770), (286, 45755), (288, 45749), (301, 45695), (303, 45686), (352, 45458), (358, 45422),

Gene: Cannibal\_52 Start: 46923, Stop: 45220, Start Num: 69

Candidate Starts for Cannibal\_52:

(Start: 69 @46923 has 103 MA's), (Start: 82 @46899 has 11 MA's), (Start: 87 @46842 has 1 MA's), (Start: 89 @46833 has 2 MA's), (104, 46743), (108, 46710), (119, 46653), (121, 46641), (123, 46617), (126, 46605), (127, 46596), (138, 46536), (147, 46446), (151, 46401), (158, 46341), (167, 46287), (173, 46239), (176, 46218), (198, 46086), (208, 46017), (210, 46011), (212, 45984), (214, 45969), (219, 45927), (224, 45879), (227, 45849), (232, 45822), (266, 45696), (268, 45690), (271, 45663), (280, 45621), (281, 45618), (286, 45603), (288, 45597), (301, 45543), (303, 45534), (352, 45306), (358, 45270),

Gene: Carthage\_50 Start: 45870, Stop: 44167, Start Num: 69

Candidate Starts for Carthage\_50:

(Start: 69 @45870 has 103 MA's), (Start: 82 @45846 has 11 MA's), (Start: 87 @45789 has 1 MA's), (Start: 89 @45780 has 2 MA's), (104, 45690), (108, 45657), (119, 45600), (121, 45588), (123, 45564), (126, 45552), (127, 45543), (138, 45483), (147, 45393), (151, 45348), (158, 45288), (167, 45234), (173, 45186), (176, 45165), (198, 45033), (208, 44964), (210, 44958), (212, 44931), (214, 44916), (219, 44874), (224, 44826), (227, 44796), (232, 44769), (266, 44643), (268, 44637), (271, 44610), (281, 44565), (286, 44550), (288, 44544), (301, 44490), (303, 44481), (352, 44253), (358, 44217),

Gene: Casbah\_52 Start: 47468, Stop: 45771, Start Num: 64

Candidate Starts for Casbah\_52:

(Start: 64 @47468 has 34 MA's), (Start: 103 @47270 has 1 MA's), (108, 47234), (119, 47177), (127, 47120), (134, 47078), (136, 47072), (141, 47015), (146, 46988), (147, 46970), (158, 46865), (171, 46775), (173, 46763), (176, 46742), (183, 46697), (193, 46634), (205, 46550), (209, 46535), (210, 46532), (211, 46529), (212, 46505), (215, 46487), (219, 46448), (224, 46400), (227, 46370), (231, 46346), (238, 46304), (264, 46226), (270, 46199), (277, 46148), (286, 46124), (312, 46037), (325, 45995), (344, 45890), (352, 45848), (353, 45833),

Gene: ChaChing\_52 Start: 47170, Stop: 45473, Start Num: 64

Candidate Starts for ChaChing\_52:

(Start: 64 @47170 has 34 MA's), (Start: 103 @46972 has 1 MA's), (108, 46936), (119, 46879), (127, 46822), (134, 46780), (136, 46774), (141, 46717), (146, 46690), (147, 46672), (158, 46567), (171, 46477), (173, 46465), (176, 46444), (183, 46399), (193, 46336), (205, 46252), (209, 46237), (210, 46234), (211, 46231), (212, 46207), (215, 46189), (219, 46150), (224, 46102), (227, 46072), (231, 46048), (238, 46006), (264, 45928), (270, 45901), (277, 45850), (286, 45826), (301, 45778), (312, 45739), (325, 45697), (344, 45592), (352, 45550), (353, 45535),

Gene: Chaelin\_52 Start: 46739, Stop: 44943, Start Num: 38

Candidate Starts for Chaelin\_52:

(Start: 38 @46739 has 111 MA's), (Start: 69 @46646 has 103 MA's), (Start: 82 @46622 has 11 MA's), (Start: 87 @46565 has 1 MA's), (Start: 89 @46556 has 2 MA's), (104, 46466), (108, 46433), (119, 46376), (121, 46364), (123, 46340), (126, 46328), (127, 46319), (138, 46259), (147, 46169), (151, 46124), (158, 46064), (167, 46010), (173, 45962), (176, 45941), (198, 45809), (208, 45740), (210, 45734), (212, 45707), (214, 45692), (219, 45650), (224, 45602), (227, 45572), (232, 45545), (266, 45419), (268, 45413), (271, 45386), (281, 45341), (286, 45326), (288, 45320), (301, 45266), (303, 45257), (352, 45029), (358, 44993),

Gene: Chah\_54 Start: 47194, Stop: 45398, Start Num: 38

Candidate Starts for Chah\_54:

(Start: 38 @47194 has 111 MA's), (Start: 69 @47101 has 103 MA's), (Start: 82 @47077 has 11 MA's), (Start: 87 @47020 has 1 MA's), (Start: 89 @47011 has 2 MA's), (104, 46921), (108, 46888), (119, 46831), (121, 46819), (123, 46795), (126, 46783), (127, 46774), (138, 46714), (147, 46624), (151, 46579), (158, 46519), (173, 46417), (176, 46396), (198, 46264), (208, 46195), (210, 46189), (212, 46162), (214, 46147), (219, 46105), (224, 46057), (227, 46027), (232, 46000), (266, 45874), (268,



45868), (271, 45841), (280, 45799), (281, 45796), (286, 45781), (288, 45775), (301, 45721), (303, 45712), (352, 45484), (358, 45448),

Gene: Chandler\_52 Start: 48039, Stop: 46240, Start Num: 43

Candidate Starts for Chandler\_52:

(17, 48225), (19, 48204), (25, 48129), (Start: 43 @48039 has 7 MA's), (51, 48015), (Start: 54 @48009 has 3 MA's), (55, 48006), (Start: 64 @47937 has 34 MA's), (Start: 103 @47739 has 1 MA's), (108, 47703), (119, 47646), (127, 47589), (134, 47547), (136, 47541), (141, 47484), (146, 47457), (147, 47439), (158, 47334), (171, 47244), (173, 47232), (176, 47211), (183, 47166), (193, 47103), (205, 47019), (209, 47004), (210, 47001), (211, 46998), (212, 46974), (215, 46956), (219, 46917), (224, 46869), (227, 46839), (231, 46815), (238, 46773), (264, 46695), (270, 46668), (277, 46617), (286, 46593), (301, 46545), (312, 46506), (325, 46464), (344, 46359), (352, 46317), (353, 46302),

Gene: Charles1\_52 Start: 47024, Stop: 45228, Start Num: 38

Candidate Starts for Charles1\_52:

(Start: 38 @47024 has 111 MA's), (Start: 69 @46931 has 103 MA's), (Start: 82 @46907 has 11 MA's), (Start: 87 @46850 has 1 MA's), (Start: 89 @46841 has 2 MA's), (104, 46751), (108, 46718), (119, 46661), (121, 46649), (123, 46625), (126, 46613), (127, 46604), (138, 46544), (147, 46454), (151, 46409), (158, 46349), (167, 46295), (173, 46247), (176, 46226), (198, 46094), (208, 46025), (210, 46019), (212, 45992), (214, 45977), (219, 45935), (224, 45887), (227, 45857), (232, 45830), (266, 45704), (268, 45698), (271, 45671), (281, 45626), (286, 45611), (288, 45605), (301, 45551), (303, 45542), (352, 45314), (358, 45278),

Gene: CharlieGBrown\_51 Start: 46614, Stop: 44818, Start Num: 38

Candidate Starts for CharlieGBrown\_51:

(Start: 38 @46614 has 111 MA's), (Start: 69 @46521 has 103 MA's), (Start: 82 @46497 has 11 MA's), (Start: 87 @46440 has 1 MA's), (Start: 89 @46431 has 2 MA's), (104, 46341), (108, 46308), (119, 46251), (121, 46239), (123, 46215), (126, 46203), (127, 46194), (138, 46134), (147, 46044), (151, 45999), (158, 45939), (167, 45885), (173, 45837), (176, 45816), (198, 45684), (208, 45615), (210, 45609), (212, 45582), (214, 45567), (219, 45525), (224, 45477), (227, 45447), (232, 45420), (266, 45294), (268, 45288), (271, 45261), (281, 45216), (286, 45201), (288, 45195), (301, 45141), (303, 45132), (352, 44904), (358, 44868),

Gene: CharlottesWeb\_45 Start: 39483, Stop: 37816, Start Num: 67

Candidate Starts for CharlottesWeb\_45:

(Start: 65 @39486 has 1 MA's), (Start: 67 @39483 has 49 MA's), (86, 39420), (104, 39297), (105, 39294), (108, 39264), (109, 39252), (119, 39207), (134, 39108), (145, 39018), (147, 38997), (158, 38898), (163, 38877), (167, 38844), (173, 38796), (177, 38772), (181, 38736), (186, 38700), (207, 38580), (209, 38571), (212, 38541), (214, 38526), (219, 38484), (224, 38436), (227, 38406), (236, 38358), (256, 38289), (261, 38280), (266, 38256), (286, 38163), (301, 38124), (319, 38058), (322, 38052), (334, 38001), (340, 37974), (346, 37929), (352, 37893), (368, 37827),

Gene: CheetO\_52 Start: 46963, Stop: 45260, Start Num: 68

Candidate Starts for CheetO\_52:

(Start: 68 @46963 has 66 MA's), (Start: 82 @46939 has 11 MA's), (Start: 87 @46882 has 1 MA's), (Start: 89 @46873 has 2 MA's), (104, 46783), (108, 46750), (119, 46693), (121, 46681), (123, 46657), (126, 46645), (127, 46636), (138, 46576), (147, 46486), (151, 46441), (158, 46381), (167, 46327), (173, 46279), (176, 46258), (198, 46126), (208, 46057), (210, 46051), (212, 46024), (214, 46009), (219, 45967), (224, 45919), (227, 45889), (232, 45862), (266, 45736), (268, 45730), (271, 45703), (281, 45658), (286, 45643), (288, 45637), (301, 45583), (303, 45574), (352, 45346), (358, 45310),

Gene: Cher\_51 Start: 46761, Stop: 44965, Start Num: 38

Candidate Starts for Cher\_51:

(Start: 38 @46761 has 111 MA's), (Start: 69 @46668 has 103 MA's), (Start: 82 @46644 has 11 MA's), (Start: 87 @46587 has 1 MA's), (Start: 89 @46578 has 2 MA's), (104, 46488), (108, 46455), (119, 46398), (121, 46386), (123, 46362), (126, 46350), (127, 46341), (138, 46281), (147, 46191), (151, 46146), (158, 46086), (167, 46032), (173, 45984), (176, 45963), (198, 45831), (208, 45762), (210, 45756), (212, 45729), (214, 45714), (219, 45672), (224, 45624), (227, 45594), (232, 45567), (266, 45441), (268, 45435), (271, 45408), (281, 45363), (286, 45348), (288, 45342), (301, 45288), (303, 45279), (352, 45051), (358, 45015),

Gene: Childish\_51 Start: 46671, Stop: 44968, Start Num: 69

Candidate Starts for Childish\_51:

(Start: 69 @46671 has 103 MA's), (Start: 82 @46647 has 11 MA's), (Start: 87 @46590 has 1 MA's), (Start: 89 @46581 has 2 MA's), (104, 46491), (108, 46458), (119, 46401), (121, 46389), (123, 46365), (126, 46353), (127, 46344), (138, 46284), (147, 46194), (151, 46149), (158, 46089), (167, 46035), (173, 45987), (176, 45966), (198, 45834), (208, 45765), (210, 45759), (212, 45732), (214, 45717), (219, 45675), (224, 45627), (227, 45597), (232, 45570), (266, 45444), (268, 45438), (271, 45411), (281, 45366), (286, 45351), (288, 45345), (301, 45291), (303, 45282), (352, 45054), (358, 45018),

Gene: Chorkpop\_52 Start: 46679, Stop: 44976, Start Num: 69

Candidate Starts for Chorkpop\_52:

(Start: 69 @46679 has 103 MA's), (Start: 82 @46655 has 11 MA's), (Start: 87 @46598 has 1 MA's), (Start: 89 @46589 has 2 MA's), (104, 46499), (108, 46466), (119, 46409), (121, 46397), (123, 46373), (126, 46361), (127, 46352), (138, 46292), (147, 46202), (151, 46157), (158, 46097), (173, 45995), (176, 45974), (198, 45842), (208, 45773), (210, 45767), (212, 45740), (214, 45725), (219, 45683), (224, 45635), (227, 45605), (232, 45578), (266, 45452), (268, 45446), (271, 45419), (280, 45377), (281, 45374), (286, 45359), (288, 45353), (301, 45299), (303, 45290), (352, 45062), (358, 45026),

Gene: ChrisnMich\_47 Start: 46389, Stop: 44674, Start Num: 69

Candidate Starts for ChrisnMich\_47:

(Start: 69 @46389 has 103 MA's), (105, 46197), (108, 46167), (111, 46146), (119, 46110), (123, 46074), (125, 46065), (145, 45924), (147, 45903), (148, 45882), (158, 45804), (163, 45783), (167, 45750), (169, 45741), (172, 45705), (173, 45702), (177, 45678), (196, 45561), (198, 45549), (202, 45525), (208, 45480), (210, 45474), (212, 45447), (213, 45435), (214, 45432), (219, 45390), (224, 45342), (227, 45312), (237, 45261), (251, 45213), (262, 45177), (266, 45156), (267, 45153), (273, 45114), (280, 45078), (285, 45063), (286, 45060), (290, 45051), (295, 45033), (298, 45006), (303, 44985), (329, 44874), (352, 44751),

Gene: Chunky\_52 Start: 46967, Stop: 45264, Start Num: 68

Candidate Starts for Chunky\_52:

(Start: 68 @46967 has 66 MA's), (Start: 82 @46943 has 11 MA's), (Start: 87 @46886 has 1 MA's), (Start: 89 @46877 has 2 MA's), (104, 46787), (108, 46754), (119, 46697), (121, 46685), (123, 46661), (126, 46649), (127, 46640), (138, 46580), (147, 46490), (151, 46445), (158, 46385), (173, 46283), (176, 46262), (198, 46130), (208, 46061), (210, 46055), (212, 46028), (214, 46013), (219, 45971), (224, 45923), (227, 45893), (232, 45866), (266, 45740), (268, 45734), (271, 45707), (281, 45662), (286, 45647), (288, 45641), (301, 45587), (303, 45578), (352, 45350), (358, 45314),

Gene: Chute\_51 Start: 47085, Stop: 45289, Start Num: 38

Candidate Starts for Chute\_51:

(Start: 38 @47085 has 111 MA's), (Start: 69 @46992 has 103 MA's), (Start: 82 @46968 has 11 MA's), (Start: 87 @46911 has 1 MA's), (Start: 89 @46902 has 2 MA's), (104, 46812), (108, 46779), (119, 46722), (121, 46710), (123, 46686), (126, 46674), (127, 46665), (138, 46605), (147, 46515), (151, 46470), (158, 46410), (167, 46356), (173, 46308), (176, 46287), (198, 46155), (208, 46086), (210, 46080), (212, 46053), (214, 46038), (219, 45996), (224, 45948), (227, 45918), (232, 45891), (266, 45765), (268, 45759), (271, 45732), (281, 45687), (286, 45672), (288, 45666), (301, 45612), (303,

45603), (352, 45375), (358, 45339),

Gene: CloverMinnie\_48 Start: 41921, Stop: 40254, Start Num: 67

Candidate Starts for CloverMinnie\_48:

(Start: 67 @41921 has 49 MA's), (92, 41816), (95, 41786), (Start: 103 @41738 has 1 MA's), (108, 41702), (109, 41690), (145, 41456), (147, 41435), (158, 41333), (172, 41234), (173, 41231), (178, 41198), (196, 41090), (208, 41009), (209, 41006), (210, 41003), (212, 40976), (213, 40964), (214, 40961), (219, 40919), (227, 40841), (229, 40832), (235, 40799), (258, 40721), (266, 40691), (267, 40688), (275, 40631), (285, 40601), (286, 40598), (332, 40448), (352, 40331), (368, 40265),

Gene: Cobra\_52 Start: 46952, Stop: 45249, Start Num: 69

Candidate Starts for Cobra\_52:

(23, 47150), (24, 47144), (Start: 69 @46952 has 103 MA's), (Start: 82 @46928 has 11 MA's), (Start: 87 @46871 has 1 MA's), (Start: 89 @46862 has 2 MA's), (104, 46772), (108, 46739), (119, 46682), (121, 46670), (123, 46646), (126, 46634), (127, 46625), (138, 46565), (147, 46475), (151, 46430), (158, 46370), (173, 46268), (176, 46247), (198, 46115), (208, 46046), (210, 46040), (212, 46013), (214, 45998), (219, 45956), (224, 45908), (227, 45878), (232, 45851), (266, 45725), (268, 45719), (271, 45692), (281, 45647), (286, 45632), (288, 45626), (301, 45572), (303, 45563), (352, 45335), (358, 45299),

Gene: Coffee\_51 Start: 46681, Stop: 44966, Start Num: 67

Candidate Starts for Coffee\_51:

(10, 47110), (12, 47074), (14, 47002), (16, 46987), (20, 46936), (Start: 67 @46681 has 49 MA's), (75, 46669), (102, 46498), (Start: 103 @46495 has 1 MA's), (108, 46459), (109, 46447), (111, 46438), (119, 46402), (120, 46399), (123, 46366), (134, 46303), (147, 46195), (151, 46156), (163, 46075), (167, 46042), (169, 46033), (173, 45994), (176, 45973), (177, 45970), (183, 45928), (185, 45913), (186, 45898), (193, 45868), (198, 45841), (203, 45793), (209, 45769), (210, 45766), (212, 45739), (213, 45727), (215, 45721), (219, 45682), (224, 45634), (227, 45604), (228, 45598), (237, 45553), (251, 45478), (253, 45466), (261, 45439), (262, 45436), (265, 45421), (275, 45355), (286, 45322), (309, 45244), (318, 45214), (319, 45211), (322, 45199), (331, 45160), (344, 45082), (345, 45079), (352, 45040), (366, 44974),

Gene: Colbert\_52 Start: 46995, Stop: 45316, Start Num: 82

Candidate Starts for Colbert\_52:

(Start: 68 @47019 has 66 MA's), (Start: 82 @46995 has 11 MA's), (Start: 87 @46938 has 1 MA's), (Start: 89 @46929 has 2 MA's), (104, 46839), (108, 46806), (119, 46749), (121, 46737), (123, 46713), (126, 46701), (127, 46692), (138, 46632), (147, 46542), (151, 46497), (158, 46437), (173, 46335), (176, 46314), (198, 46182), (208, 46113), (210, 46107), (212, 46080), (214, 46065), (219, 46023), (224, 45975), (227, 45945), (232, 45918), (266, 45792), (268, 45786), (271, 45759), (280, 45717), (281, 45714), (286, 45699), (288, 45693), (301, 45639), (303, 45630), (352, 45402), (358, 45366),

Gene: Coldpizza\_47 Start: 43350, Stop: 41653, Start Num: 67

Candidate Starts for Coldpizza\_47:

(46, 43443), (47, 43440), (Start: 67 @43350 has 49 MA's), (Start: 103 @43170 has 1 MA's), (104, 43167), (108, 43134), (130, 42999), (134, 42978), (145, 42888), (147, 42867), (150, 42834), (151, 42825), (152, 42822), (173, 42663), (177, 42639), (181, 42603), (198, 42510), (209, 42438), (210, 42435), (212, 42408), (219, 42351), (221, 42336), (224, 42303), (227, 42273), (266, 42126), (280, 42051), (286, 42033), (333, 41850), (346, 41775), (350, 41751), (368, 41673), (371, 41664),

Gene: Coletti\_51 Start: 47085, Stop: 45289, Start Num: 38

Candidate Starts for Coletti\_51:

(Start: 38 @47085 has 111 MA's), (Start: 69 @46992 has 103 MA's), (Start: 82 @46968 has 11 MA's), (Start: 87 @46911 has 1 MA's), (Start: 89 @46902 has 2 MA's), (104, 46812), (108, 46779), (119,

46722), (121, 46710), (123, 46686), (126, 46674), (127, 46665), (138, 46605), (147, 46515), (151, 46470), (158, 46410), (167, 46356), (173, 46308), (176, 46287), (198, 46155), (208, 46086), (210, 46080), (212, 46053), (214, 46038), (219, 45996), (224, 45948), (227, 45918), (232, 45891), (266, 45765), (268, 45759), (271, 45732), (281, 45687), (286, 45672), (288, 45666), (301, 45612), (303, 45603), (352, 45375), (358, 45339),

Gene: Collard\_62 Start: 44024, Stop: 45736, Start Num: 77

Candidate Starts for Collard\_62:

(Start: 77 @44024 has 31 MA's), (92, 44117), (96, 44159), (Start: 103 @44195 has 1 MA's), (104, 44198), (107, 44222), (108, 44231), (116, 44270), (119, 44288), (127, 44345), (131, 44372), (132, 44375), (140, 44438), (147, 44498), (150, 44528), (151, 44537), (161, 44612), (162, 44615), (169, 44660), (171, 44687), (172, 44696), (173, 44699), (181, 44765), (182, 44768), (183, 44771), (185, 44786), (186, 44801), (196, 44846), (198, 44858), (211, 44936), (212, 44960), (213, 44972), (214, 44975), (215, 44978), (217, 44999), (219, 45017), (224, 45065), (230, 45104), (233, 45125), (253, 45209), (265, 45251), (270, 45275), (275, 45320), (276, 45323), (286, 45356), (300, 45380), (320, 45434), (322, 45440), (327, 45464), (352, 45581), (361, 45623), (364, 45647),

Gene: Compostia\_52 Start: 47657, Stop: 45888, Start Num: 54

Candidate Starts for Compostia\_52:

(3, 48170), (4, 48113), (5, 48047), (9, 48014), (17, 47873), (19, 47852), (25, 47777), (Start: 43 @47687 has 7 MA's), (51, 47663), (Start: 54 @47657 has 3 MA's), (55, 47654), (Start: 64 @47585 has 34 MA's), (Start: 103 @47387 has 1 MA's), (108, 47351), (119, 47294), (127, 47237), (134, 47195), (136, 47189), (141, 47132), (146, 47105), (147, 47087), (158, 46982), (171, 46892), (173, 46880), (176, 46859), (183, 46814), (193, 46751), (205, 46667), (209, 46652), (210, 46649), (211, 46646), (212, 46622), (215, 46604), (219, 46565), (224, 46517), (227, 46487), (231, 46463), (238, 46421), (264, 46343), (270, 46316), (277, 46265), (286, 46241), (301, 46193), (312, 46154), (325, 46112), (344, 46007), (352, 45965), (353, 45950),

Gene: Cooper\_48 Start: 46597, Stop: 44885, Start Num: 69

Candidate Starts for Cooper\_48:

(Start: 69 @46597 has 103 MA's), (102, 46414), (Start: 103 @46411 has 1 MA's), (108, 46375), (119, 46318), (121, 46306), (123, 46282), (138, 46201), (145, 46132), (147, 46111), (148, 46090), (158, 46012), (167, 45958), (173, 45910), (177, 45886), (196, 45769), (198, 45757), (202, 45733), (208, 45688), (210, 45682), (212, 45655), (213, 45643), (214, 45640), (219, 45598), (224, 45550), (227, 45520), (237, 45469), (261, 45388), (262, 45385), (265, 45370), (266, 45364), (267, 45361), (272, 45328), (273, 45322), (274, 45313), (280, 45286), (285, 45271), (286, 45268), (290, 45259), (295, 45241), (298, 45214), (303, 45193), (329, 45082), (349, 44974), (352, 44959),

Gene: Cornobble\_51 Start: 46509, Stop: 44806, Start Num: 69

Candidate Starts for Cornobble\_51:

(Start: 38 @46602 has 111 MA's), (Start: 69 @46509 has 103 MA's), (Start: 82 @46485 has 11 MA's), (Start: 87 @46428 has 1 MA's), (Start: 89 @46419 has 2 MA's), (104, 46329), (108, 46296), (119, 46239), (121, 46227), (123, 46203), (126, 46191), (127, 46182), (138, 46122), (147, 46032), (151, 45987), (158, 45927), (167, 45873), (173, 45825), (176, 45804), (198, 45672), (208, 45603), (210, 45597), (212, 45570), (214, 45555), (219, 45513), (224, 45465), (227, 45435), (232, 45408), (266, 45282), (268, 45276), (271, 45249), (281, 45204), (286, 45189), (288, 45183), (301, 45129), (303, 45120), (352, 44892), (358, 44856),

Gene: Corofin\_52 Start: 47252, Stop: 45483, Start Num: 54

Candidate Starts for Corofin\_52:

(17, 47468), (19, 47447), (25, 47372), (Start: 43 @47282 has 7 MA's), (51, 47258), (Start: 54 @47252 has 3 MA's), (55, 47249), (Start: 64 @47180 has 34 MA's), (Start: 103 @46982 has 1 MA's), (108, 46946), (119, 46889), (127, 46832), (134, 46790), (136, 46784), (141, 46727), (146, 46700), (147,

46682), (158, 46577), (171, 46487), (173, 46475), (176, 46454), (183, 46409), (193, 46346), (205, 46262), (209, 46247), (210, 46244), (211, 46241), (212, 46217), (215, 46199), (219, 46160), (224, 46112), (227, 46082), (231, 46058), (238, 46016), (264, 45938), (270, 45911), (277, 45860), (286, 45836), (301, 45788), (312, 45749), (325, 45707), (344, 45602), (352, 45560), (353, 45545),

Gene: Cosmolli16\_52 Start: 46886, Stop: 45183, Start Num: 69

Candidate Starts for Cosmolli16\_52:

(Start: 38 @46979 has 111 MA's), (Start: 69 @46886 has 103 MA's), (Start: 82 @46862 has 11 MA's), (Start: 87 @46805 has 1 MA's), (Start: 89 @46796 has 2 MA's), (104, 46706), (108, 46673), (119, 46616), (121, 46604), (123, 46580), (126, 46568), (127, 46559), (138, 46499), (147, 46409), (151, 46364), (158, 46304), (167, 46250), (173, 46202), (176, 46181), (198, 46049), (208, 45980), (210, 45974), (212, 45947), (214, 45932), (219, 45890), (224, 45842), (227, 45812), (232, 45785), (266, 45659), (268, 45653), (271, 45626), (281, 45581), (286, 45566), (288, 45560), (301, 45506), (303, 45497), (352, 45269), (358, 45233),

Gene: Craff\_53 Start: 47180, Stop: 45384, Start Num: 38

Candidate Starts for Craff\_53:

(Start: 38 @47180 has 111 MA's), (Start: 69 @47087 has 103 MA's), (Start: 82 @47063 has 11 MA's), (Start: 87 @47006 has 1 MA's), (Start: 89 @46997 has 2 MA's), (104, 46907), (108, 46874), (119, 46817), (121, 46805), (123, 46781), (126, 46769), (127, 46760), (138, 46700), (147, 46610), (151, 46565), (158, 46505), (167, 46451), (173, 46403), (176, 46382), (198, 46250), (208, 46181), (210, 46175), (212, 46148), (214, 46133), (219, 46091), (224, 46043), (227, 46013), (232, 45986), (266, 45860), (268, 45854), (271, 45827), (281, 45782), (286, 45767), (288, 45761), (301, 45707), (303, 45698), (352, 45470), (358, 45434),

Gene: Crownjwl\_53 Start: 47051, Stop: 45252, Start Num: 38

Candidate Starts for Crownjwl\_53:

(Start: 38 @47051 has 111 MA's), (Start: 69 @46955 has 103 MA's), (Start: 82 @46931 has 11 MA's), (Start: 87 @46874 has 1 MA's), (Start: 89 @46865 has 2 MA's), (104, 46775), (108, 46742), (119, 46685), (121, 46673), (123, 46649), (126, 46637), (127, 46628), (138, 46568), (147, 46478), (151, 46433), (158, 46373), (167, 46319), (173, 46271), (176, 46250), (198, 46118), (208, 46049), (210, 46043), (212, 46016), (214, 46001), (219, 45959), (224, 45911), (227, 45881), (232, 45854), (266, 45728), (268, 45722), (271, 45695), (281, 45650), (286, 45635), (288, 45629), (301, 45575), (303, 45566), (352, 45338), (358, 45302),

Gene: DaddyDaniels\_52 Start: 46640, Stop: 44937, Start Num: 69

Candidate Starts for DaddyDaniels\_52:

(Start: 69 @46640 has 103 MA's), (Start: 82 @46616 has 11 MA's), (Start: 87 @46559 has 1 MA's), (Start: 89 @46550 has 2 MA's), (104, 46460), (108, 46427), (119, 46370), (121, 46358), (123, 46334), (126, 46322), (127, 46313), (138, 46253), (147, 46163), (151, 46118), (158, 46058), (167, 46004), (173, 45956), (176, 45935), (198, 45803), (208, 45734), (210, 45728), (212, 45701), (214, 45686), (219, 45644), (224, 45596), (227, 45566), (232, 45539), (266, 45413), (268, 45407), (271, 45380), (280, 45338), (281, 45335), (286, 45320), (288, 45314), (301, 45260), (303, 45251), (352, 45023), (358, 44987),

Gene: Dadosky\_66 Start: 44392, Stop: 46107, Start Num: 77

Candidate Starts for Dadosky\_66:

(Start: 77 @44392 has 31 MA's), (92, 44485), (96, 44527), (Start: 103 @44563 has 1 MA's), (104, 44566), (107, 44590), (108, 44599), (116, 44638), (119, 44656), (127, 44713), (131, 44740), (132, 44743), (140, 44806), (147, 44866), (150, 44896), (151, 44905), (161, 44980), (162, 44983), (171, 45055), (172, 45064), (173, 45067), (181, 45133), (182, 45136), (183, 45139), (185, 45154), (186, 45169), (189, 45184), (196, 45214), (198, 45226), (212, 45328), (213, 45340), (214, 45343), (215, 45346), (217, 45367), (219, 45385), (224, 45433), (229, 45466), (233, 45493), (265, 45622), (270,

45646), (275, 45691), (276, 45694), (286, 45727), (300, 45751), (320, 45805), (322, 45811), (327, 45835), (352, 45952), (353, 45967), (361, 45994), (364, 46018),

Gene: Daffy\_52 Start: 46665, Stop: 44962, Start Num: 69

Candidate Starts for Daffy\_52:

(Start: 69 @46665 has 103 MA's), (Start: 82 @46641 has 11 MA's), (Start: 87 @46584 has 1 MA's), (Start: 89 @46575 has 2 MA's), (104, 46485), (108, 46452), (119, 46395), (121, 46383), (123, 46359), (126, 46347), (127, 46338), (138, 46278), (147, 46188), (151, 46143), (158, 46083), (167, 46029), (173, 45981), (176, 45960), (198, 45828), (208, 45759), (210, 45753), (212, 45726), (214, 45711), (219, 45669), (224, 45621), (227, 45591), (232, 45564), (266, 45438), (268, 45432), (271, 45405), (280, 45363), (281, 45360), (286, 45345), (288, 45339), (301, 45285), (303, 45276), (352, 45048), (358, 45012),

Gene: Daisy\_52 Start: 47182, Stop: 45485, Start Num: 64

Candidate Starts for Daisy\_52:

(Start: 64 @47182 has 34 MA's), (Start: 103 @46984 has 1 MA's), (108, 46948), (119, 46891), (127, 46834), (134, 46792), (136, 46786), (141, 46729), (146, 46702), (147, 46684), (158, 46579), (171, 46489), (173, 46477), (176, 46456), (183, 46411), (193, 46348), (205, 46264), (209, 46249), (210, 46246), (211, 46243), (212, 46219), (215, 46201), (219, 46162), (224, 46114), (227, 46084), (231, 46060), (238, 46018), (264, 45940), (270, 45913), (277, 45862), (286, 45838), (301, 45790), (312, 45751), (325, 45709), (344, 45604), (347, 45589), (352, 45562), (353, 45547),

Gene: Daka\_53 Start: 46944, Stop: 45241, Start Num: 69

Candidate Starts for Daka\_53:

(Start: 69 @46944 has 103 MA's), (Start: 82 @46920 has 11 MA's), (Start: 87 @46863 has 1 MA's), (Start: 89 @46854 has 2 MA's), (104, 46764), (108, 46731), (119, 46674), (121, 46662), (123, 46638), (126, 46626), (127, 46617), (138, 46557), (147, 46467), (151, 46422), (158, 46362), (167, 46308), (173, 46260), (176, 46239), (198, 46107), (208, 46038), (210, 46032), (212, 46005), (214, 45990), (219, 45948), (224, 45900), (227, 45870), (232, 45843), (266, 45717), (268, 45711), (271, 45684), (281, 45639), (286, 45624), (288, 45618), (301, 45564), (303, 45555), (352, 45327), (358, 45291),

Gene: Dati\_52 Start: 46668, Stop: 44965, Start Num: 69

Candidate Starts for Dati\_52:

(Start: 69 @46668 has 103 MA's), (Start: 82 @46644 has 11 MA's), (Start: 87 @46587 has 1 MA's), (Start: 89 @46578 has 2 MA's), (104, 46488), (108, 46455), (119, 46398), (121, 46386), (123, 46362), (126, 46350), (127, 46341), (138, 46281), (147, 46191), (151, 46146), (158, 46086), (167, 46032), (173, 45984), (176, 45963), (198, 45831), (208, 45762), (210, 45756), (212, 45729), (214, 45714), (219, 45672), (224, 45624), (227, 45594), (232, 45567), (266, 45441), (268, 45435), (271, 45408), (281, 45363), (286, 45348), (288, 45342), (301, 45288), (303, 45279), (352, 45051), (358, 45015),

Gene: Deenasa\_51 Start: 47601, Stop: 45904, Start Num: 64

Candidate Starts for Deenasa\_51:

(Start: 64 @47601 has 34 MA's), (Start: 103 @47403 has 1 MA's), (108, 47367), (119, 47310), (127, 47253), (134, 47211), (136, 47205), (141, 47148), (146, 47121), (147, 47103), (158, 46998), (171, 46908), (173, 46896), (176, 46875), (183, 46830), (193, 46767), (205, 46683), (209, 46668), (210, 46665), (211, 46662), (212, 46638), (215, 46620), (219, 46581), (224, 46533), (227, 46503), (231, 46479), (238, 46437), (264, 46359), (270, 46332), (275, 46290), (277, 46281), (286, 46257), (312, 46170), (325, 46128), (344, 46023), (352, 45981), (353, 45966), (356, 45948),

Gene: DelRivs\_51 Start: 46765, Stop: 44969, Start Num: 38

Candidate Starts for DelRivs\_51:

(Start: 38 @46765 has 111 MA's), (Start: 69 @46672 has 103 MA's), (Start: 82 @46648 has 11 MA's), (Start: 87 @46591 has 1 MA's), (Start: 89 @46582 has 2 MA's), (104, 46492), (108, 46459), (119,

46402), (121, 46390), (123, 46366), (126, 46354), (127, 46345), (138, 46285), (147, 46195), (151, 46150), (158, 46090), (173, 45988), (176, 45967), (198, 45835), (208, 45766), (210, 45760), (212, 45733), (214, 45718), (219, 45676), (224, 45628), (227, 45598), (232, 45571), (266, 45445), (268, 45439), (271, 45412), (280, 45370), (281, 45367), (286, 45352), (288, 45346), (301, 45292), (303, 45283), (352, 45055), (358, 45019),

Gene: Derpp\_51 Start: 46603, Stop: 44807, Start Num: 38

Candidate Starts for Derpp\_51:

(Start: 38 @46603 has 111 MA's), (Start: 69 @46510 has 103 MA's), (Start: 82 @46486 has 11 MA's), (Start: 87 @46429 has 1 MA's), (Start: 89 @46420 has 2 MA's), (104, 46330), (108, 46297), (119, 46240), (121, 46228), (123, 46204), (126, 46192), (127, 46183), (138, 46123), (147, 46033), (151, 45988), (158, 45928), (167, 45874), (173, 45826), (176, 45805), (198, 45673), (208, 45604), (210, 45598), (212, 45571), (214, 45556), (219, 45514), (224, 45466), (227, 45436), (232, 45409), (266, 45283), (268, 45277), (271, 45250), (281, 45205), (286, 45190), (288, 45184), (301, 45130), (303, 45121), (352, 44893), (358, 44857),

Gene: Devonte\_51 Start: 46829, Stop: 45132, Start Num: 64

Candidate Starts for Devonte\_51:

(Start: 64 @46829 has 34 MA's), (Start: 103 @46631 has 1 MA's), (108, 46595), (119, 46538), (127, 46481), (134, 46439), (141, 46376), (146, 46349), (147, 46331), (158, 46226), (171, 46136), (173, 46124), (176, 46103), (183, 46058), (193, 45995), (205, 45911), (209, 45896), (210, 45893), (211, 45890), (212, 45866), (215, 45848), (219, 45809), (224, 45761), (227, 45731), (231, 45707), (238, 45665), (264, 45587), (270, 45560), (275, 45518), (277, 45509), (286, 45485), (312, 45398), (325, 45356), (344, 45251), (352, 45209), (353, 45194), (356, 45176),

Gene: Dice\_51 Start: 46729, Stop: 44933, Start Num: 38

Candidate Starts for Dice\_51:

(Start: 38 @46729 has 111 MA's), (Start: 69 @46636 has 103 MA's), (Start: 82 @46612 has 11 MA's), (Start: 87 @46555 has 1 MA's), (Start: 89 @46546 has 2 MA's), (104, 46456), (108, 46423), (119, 46366), (121, 46354), (123, 46330), (126, 46318), (127, 46309), (138, 46249), (147, 46159), (151, 46114), (158, 46054), (173, 45952), (176, 45931), (198, 45799), (208, 45730), (210, 45724), (212, 45697), (214, 45682), (219, 45640), (224, 45592), (227, 45562), (232, 45535), (266, 45409), (268, 45403), (271, 45376), (280, 45334), (281, 45331), (286, 45316), (288, 45310), (301, 45256), (303, 45247), (352, 45019), (358, 44983),

Gene: DigitDog\_52 Start: 47830, Stop: 46136, Start Num: 70

Candidate Starts for DigitDog\_52:

(Start: 70 @47830 has 10 MA's), (Start: 82 @47803 has 11 MA's), (91, 47731), (108, 47614), (123, 47524), (126, 47512), (134, 47461), (138, 47443), (145, 47374), (147, 47353), (157, 47257), (163, 47233), (167, 47200), (173, 47152), (176, 47131), (196, 47011), (202, 46975), (207, 46936), (208, 46930), (210, 46924), (212, 46897), (213, 46885), (214, 46882), (219, 46840), (227, 46762), (259, 46639), (262, 46627), (266, 46606), (267, 46603), (273, 46564), (275, 46546), (280, 46528), (286, 46510), (337, 46309), (352, 46213),

Gene: Dingo\_52 Start: 46935, Stop: 45232, Start Num: 69

Candidate Starts for Dingo\_52:

(Start: 38 @47031 has 111 MA's), (Start: 69 @46935 has 103 MA's), (Start: 82 @46911 has 11 MA's), (Start: 87 @46854 has 1 MA's), (Start: 89 @46845 has 2 MA's), (104, 46755), (108, 46722), (119, 46665), (121, 46653), (123, 46629), (126, 46617), (127, 46608), (138, 46548), (147, 46458), (151, 46413), (158, 46353), (173, 46251), (176, 46230), (198, 46098), (208, 46029), (210, 46023), (212, 45996), (214, 45981), (219, 45939), (224, 45891), (227, 45861), (232, 45834), (266, 45708), (268, 45702), (271, 45675), (281, 45630), (286, 45615), (288, 45609), (301, 45555), (303, 45546), (352, 45318), (358, 45282),

Gene: Dione\_51 Start: 46644, Stop: 44941, Start Num: 68

Candidate Starts for Dione\_51:

(Start: 68 @46644 has 66 MA's), (Start: 82 @46620 has 11 MA's), (Start: 87 @46563 has 1 MA's), (Start: 89 @46554 has 2 MA's), (104, 46464), (108, 46431), (119, 46374), (121, 46362), (123, 46338), (126, 46326), (127, 46317), (138, 46257), (147, 46167), (151, 46122), (158, 46062), (167, 46008), (173, 45960), (176, 45939), (198, 45807), (208, 45738), (210, 45732), (212, 45705), (214, 45690), (219, 45648), (224, 45600), (227, 45570), (232, 45543), (266, 45417), (268, 45411), (271, 45384), (281, 45339), (286, 45324), (288, 45318), (301, 45264), (303, 45255), (352, 45027), (358, 44991),

Gene: DirtJuice\_52 Start: 46934, Stop: 45231, Start Num: 69

Candidate Starts for DirtJuice\_52:

(Start: 69 @46934 has 103 MA's), (Start: 82 @46910 has 11 MA's), (Start: 87 @46853 has 1 MA's), (Start: 89 @46844 has 2 MA's), (104, 46754), (108, 46721), (119, 46664), (121, 46652), (123, 46628), (126, 46616), (127, 46607), (138, 46547), (147, 46457), (151, 46412), (173, 46250), (176, 46229), (198, 46097), (208, 46028), (210, 46022), (212, 45995), (214, 45980), (219, 45938), (224, 45890), (227, 45860), (232, 45833), (266, 45707), (268, 45701), (271, 45674), (281, 45629), (286, 45614), (288, 45608), (301, 45554), (303, 45545), (352, 45317), (358, 45281),

Gene: Doddsville\_52 Start: 46664, Stop: 44961, Start Num: 69

Candidate Starts for Doddsville\_52:

(Start: 69 @46664 has 103 MA's), (Start: 82 @46640 has 11 MA's), (Start: 87 @46583 has 1 MA's), (Start: 89 @46574 has 2 MA's), (104, 46484), (108, 46451), (119, 46394), (121, 46382), (123, 46358), (126, 46346), (127, 46337), (138, 46277), (147, 46187), (151, 46142), (158, 46082), (167, 46028), (173, 45980), (176, 45959), (198, 45827), (208, 45758), (210, 45752), (212, 45725), (214, 45710), (219, 45668), (224, 45620), (227, 45590), (232, 45563), (266, 45437), (268, 45431), (271, 45404), (281, 45359), (286, 45344), (288, 45338), (301, 45284), (303, 45275), (352, 45047), (358, 45011),

Gene: DoesntMatter\_51 Start: 46937, Stop: 45234, Start Num: 68

Candidate Starts for DoesntMatter\_51:

(Start: 68 @46937 has 66 MA's), (Start: 82 @46913 has 11 MA's), (Start: 87 @46856 has 1 MA's), (Start: 89 @46847 has 2 MA's), (104, 46757), (108, 46724), (119, 46667), (121, 46655), (123, 46631), (126, 46619), (127, 46610), (138, 46550), (147, 46460), (151, 46415), (158, 46355), (167, 46301), (173, 46253), (176, 46232), (198, 46100), (208, 46031), (210, 46025), (212, 45998), (214, 45983), (219, 45941), (224, 45893), (227, 45863), (232, 45836), (266, 45710), (268, 45704), (271, 45677), (281, 45632), (286, 45617), (288, 45611), (301, 45557), (303, 45548), (352, 45320), (358, 45284),

Gene: DonSanchon\_51 Start: 46647, Stop: 44944, Start Num: 68

Candidate Starts for DonSanchon\_51:

(13, 46980), (15, 46953), (Start: 68 @46647 has 66 MA's), (Start: 82 @46623 has 11 MA's), (Start: 87 @46566 has 1 MA's), (Start: 89 @46557 has 2 MA's), (104, 46467), (108, 46434), (119, 46377), (121, 46365), (123, 46341), (126, 46329), (127, 46320), (138, 46260), (147, 46170), (151, 46125), (158, 46065), (173, 45963), (176, 45942), (198, 45810), (208, 45741), (210, 45735), (212, 45708), (214, 45693), (219, 45651), (224, 45603), (227, 45573), (232, 45546), (266, 45420), (268, 45414), (271, 45387), (280, 45345), (281, 45342), (286, 45327), (288, 45321), (301, 45267), (303, 45258), (352, 45030), (358, 44994),

Gene: Donny\_53 Start: 48116, Stop: 46422, Start Num: 70

Candidate Starts for Donny\_53:

(Start: 52 @48194 has 1 MA's), (Start: 70 @48116 has 10 MA's), (Start: 82 @48089 has 11 MA's), (92, 48014), (108, 47900), (123, 47810), (134, 47747), (138, 47729), (145, 47660), (147, 47639), (158, 47540), (173, 47438), (176, 47417), (196, 47297), (202, 47261), (208, 47216), (210, 47210), (211, 47207), (212, 47183), (213, 47171), (214, 47168), (219, 47126), (224, 47078), (227, 47048), (259,



46925), (266, 46892), (267, 46889), (273, 46850), (280, 46814), (286, 46796), (337, 46595), (352, 46499),

Gene: DuchessDung\_51 Start: 46026, Stop: 44230, Start Num: 38

Candidate Starts for DuchessDung\_51:

(Start: 38 @46026 has 111 MA's), (Start: 69 @45933 has 103 MA's), (Start: 82 @45909 has 11 MA's), (Start: 87 @45852 has 1 MA's), (Start: 89 @45843 has 2 MA's), (104, 45753), (108, 45720), (119, 45663), (121, 45651), (123, 45627), (126, 45615), (127, 45606), (138, 45546), (147, 45456), (151, 45411), (158, 45351), (167, 45297), (173, 45249), (176, 45228), (198, 45096), (208, 45027), (210, 45021), (212, 44994), (214, 44979), (219, 44937), (224, 44889), (227, 44859), (232, 44832), (266, 44706), (268, 44700), (271, 44673), (281, 44628), (286, 44613), (288, 44607), (301, 44553), (303, 44544), (352, 44316), (358, 44280),

Gene: Duggie\_51 Start: 46756, Stop: 44960, Start Num: 38

Candidate Starts for Duggie\_51:

(Start: 38 @46756 has 111 MA's), (Start: 69 @46663 has 103 MA's), (Start: 82 @46639 has 11 MA's), (Start: 87 @46582 has 1 MA's), (Start: 89 @46573 has 2 MA's), (104, 46483), (108, 46450), (119, 46393), (121, 46381), (123, 46357), (126, 46345), (127, 46336), (138, 46276), (147, 46186), (151, 46141), (158, 46081), (167, 46027), (173, 45979), (176, 45958), (198, 45826), (208, 45757), (210, 45751), (212, 45724), (214, 45709), (219, 45667), (224, 45619), (227, 45589), (232, 45562), (266, 45436), (268, 45430), (271, 45403), (281, 45358), (286, 45343), (288, 45337), (301, 45283), (303, 45274), (352, 45046), (358, 45010),

Gene: Durga\_53 Start: 47102, Stop: 45399, Start Num: 69

Candidate Starts for Durga\_53:

(Start: 38 @47195 has 111 MA's), (Start: 69 @47102 has 103 MA's), (Start: 82 @47078 has 11 MA's), (Start: 87 @47021 has 1 MA's), (Start: 89 @47012 has 2 MA's), (104, 46922), (108, 46889), (119, 46832), (121, 46820), (123, 46796), (126, 46784), (127, 46775), (138, 46715), (147, 46625), (151, 46580), (158, 46520), (167, 46466), (173, 46418), (176, 46397), (198, 46265), (208, 46196), (210, 46190), (212, 46163), (214, 46148), (219, 46106), (224, 46058), (227, 46028), (232, 46001), (266, 45875), (268, 45869), (271, 45842), (281, 45797), (286, 45782), (288, 45776), (301, 45722), (303, 45713), (352, 45485), (358, 45449),

Gene: Eaglehorse\_51 Start: 46607, Stop: 44892, Start Num: 67

Candidate Starts for Eaglehorse\_51:

(10, 47036), (12, 47000), (14, 46928), (16, 46913), (20, 46862), (Start: 67 @46607 has 49 MA's), (75, 46595), (102, 46424), (Start: 103 @46421 has 1 MA's), (108, 46385), (109, 46373), (111, 46364), (119, 46328), (120, 46325), (123, 46292), (134, 46229), (147, 46121), (151, 46082), (163, 46001), (167, 45968), (169, 45959), (173, 45920), (176, 45899), (177, 45896), (183, 45854), (185, 45839), (186, 45824), (193, 45794), (198, 45767), (203, 45719), (209, 45695), (210, 45692), (212, 45665), (213, 45653), (215, 45647), (219, 45608), (224, 45560), (227, 45530), (228, 45524), (237, 45479), (250, 45407), (251, 45404), (253, 45392), (261, 45365), (262, 45362), (265, 45347), (275, 45281), (286, 45248), (309, 45170), (318, 45140), (319, 45137), (322, 45125), (331, 45086), (344, 45008), (345, 45005), (352, 44966), (366, 44900),

Gene: EastView9101\_51 Start: 47766, Stop: 46072, Start Num: 70

Candidate Starts for EastView9101\_51:

(Start: 70 @47766 has 10 MA's), (Start: 82 @47739 has 11 MA's), (92, 47664), (108, 47550), (123, 47460), (134, 47397), (138, 47379), (145, 47310), (147, 47289), (163, 47169), (173, 47088), (176, 47067), (196, 46947), (202, 46911), (208, 46866), (210, 46860), (211, 46857), (212, 46833), (213, 46821), (214, 46818), (219, 46776), (224, 46728), (227, 46698), (259, 46575), (262, 46563), (266, 46542), (267, 46539), (273, 46500), (280, 46464), (286, 46446), (337, 46245), (352, 46149),

Gene: Edugator\_63 Start: 45810, Stop: 47525, Start Num: 77

Candidate Starts for Edugator\_63:

(Start: 77 @45810 has 31 MA's), (92, 45903), (96, 45945), (Start: 103 @45981 has 1 MA's), (104, 45984), (107, 46008), (108, 46017), (116, 46056), (119, 46074), (127, 46131), (131, 46158), (132, 46161), (140, 46224), (147, 46284), (150, 46314), (151, 46323), (161, 46398), (162, 46401), (171, 46473), (172, 46482), (173, 46485), (181, 46551), (182, 46554), (183, 46557), (185, 46572), (186, 46587), (189, 46602), (196, 46632), (198, 46644), (212, 46746), (213, 46758), (214, 46761), (215, 46764), (217, 46785), (219, 46803), (224, 46851), (229, 46884), (233, 46911), (265, 47040), (270, 47064), (275, 47109), (276, 47112), (286, 47145), (300, 47169), (320, 47223), (322, 47229), (327, 47253), (352, 47370), (353, 47385), (361, 47412), (364, 47436),

Gene: EmiRose\_31 Start: 25621, Stop: 24032, Start Num: 79

Candidate Starts for EmiRose\_31:

(Start: 79 @25621 has 7 MA's), (Start: 82 @25603 has 11 MA's), (86, 25570), (90, 25528), (93, 25519), (95, 25492), (100, 25459), (101, 25453), (102, 25447), (104, 25441), (108, 25408), (111, 25387), (127, 25300), (135, 25255), (139, 25228), (163, 25036), (165, 25030), (167, 25003), (173, 24955), (176, 24934), (189, 24844), (198, 24802), (206, 24742), (208, 24733), (212, 24700), (213, 24688), (219, 24643), (237, 24514), (265, 24436), (275, 24370), (289, 24337), (304, 24301), (306, 24295), (325, 24238), (336, 24199), (346, 24139), (359, 24064),

Gene: Emiris\_53 Start: 47070, Stop: 45367, Start Num: 69

Candidate Starts for Emiris\_53:

(Start: 38 @47163 has 111 MA's), (Start: 69 @47070 has 103 MA's), (Start: 82 @47046 has 11 MA's), (Start: 87 @46989 has 1 MA's), (Start: 89 @46980 has 2 MA's), (104, 46890), (108, 46857), (119, 46800), (121, 46788), (123, 46764), (126, 46752), (127, 46743), (138, 46683), (147, 46593), (151, 46548), (158, 46488), (167, 46434), (173, 46386), (176, 46365), (198, 46233), (208, 46164), (210, 46158), (212, 46131), (214, 46116), (219, 46074), (224, 46026), (227, 45996), (232, 45969), (266, 45843), (268, 45837), (271, 45810), (281, 45765), (286, 45750), (288, 45744), (301, 45690), (303, 45681), (352, 45453), (358, 45417),

Gene: EmpTee\_52 Start: 46950, Stop: 45247, Start Num: 68

Candidate Starts for EmpTee\_52:

(Start: 68 @46950 has 66 MA's), (Start: 82 @46926 has 11 MA's), (Start: 87 @46869 has 1 MA's), (Start: 89 @46860 has 2 MA's), (104, 46770), (108, 46737), (119, 46680), (121, 46668), (123, 46644), (126, 46632), (127, 46623), (138, 46563), (147, 46473), (151, 46428), (158, 46368), (167, 46314), (173, 46266), (176, 46245), (198, 46113), (208, 46044), (210, 46038), (212, 46011), (214, 45996), (219, 45954), (224, 45906), (227, 45876), (232, 45849), (266, 45723), (268, 45717), (271, 45690), (280, 45648), (281, 45645), (286, 45630), (288, 45624), (301, 45570), (303, 45561), (352, 45333), (358, 45297),

Gene: Epah\_46 Start: 46387, Stop: 44672, Start Num: 69

Candidate Starts for Epah\_46:

(Start: 69 @46387 has 103 MA's), (105, 46195), (108, 46165), (111, 46144), (119, 46108), (123, 46072), (125, 46063), (145, 45922), (147, 45901), (148, 45880), (158, 45802), (163, 45781), (167, 45748), (169, 45739), (172, 45703), (173, 45700), (177, 45676), (196, 45559), (198, 45547), (202, 45523), (208, 45478), (210, 45472), (212, 45445), (213, 45433), (214, 45430), (219, 45388), (224, 45340), (227, 45310), (237, 45259), (251, 45211), (262, 45175), (266, 45154), (267, 45151), (273, 45112), (280, 45076), (285, 45061), (286, 45058), (290, 45049), (295, 45031), (298, 45004), (303, 44983), (329, 44872), (352, 44749),

Gene: Eremos\_52 Start: 46943, Stop: 45240, Start Num: 68

Candidate Starts for Eremos\_52:

(Start: 68 @46943 has 66 MA's), (Start: 82 @46919 has 11 MA's), (Start: 87 @46862 has 1 MA's), (Start: 89 @46853 has 2 MA's), (104, 46763), (108, 46730), (119, 46673), (121, 46661), (123, 46637), (126, 46625), (127, 46616), (138, 46556), (147, 46466), (151, 46421), (158, 46361), (167, 46307), (173, 46259), (176, 46238), (198, 46106), (208, 46037), (210, 46031), (212, 46004), (214, 45989), (219, 45947), (224, 45899), (227, 45869), (232, 45842), (266, 45716), (268, 45710), (271, 45683), (281, 45638), (286, 45623), (288, 45617), (301, 45563), (303, 45554), (352, 45326), (358, 45290),

Gene: Etaye\_52 Start: 46937, Stop: 45234, Start Num: 69

Candidate Starts for Etaye\_52:

(Start: 69 @46937 has 103 MA's), (Start: 82 @46913 has 11 MA's), (Start: 87 @46856 has 1 MA's), (Start: 89 @46847 has 2 MA's), (104, 46757), (108, 46724), (119, 46667), (121, 46655), (123, 46631), (126, 46619), (127, 46610), (138, 46550), (147, 46460), (151, 46415), (158, 46355), (167, 46301), (173, 46253), (176, 46232), (198, 46100), (208, 46031), (210, 46025), (212, 45998), (214, 45983), (219, 45941), (224, 45893), (227, 45863), (232, 45836), (266, 45710), (268, 45704), (271, 45677), (281, 45632), (286, 45617), (288, 45611), (301, 45557), (303, 45548), (352, 45320), (358, 45284),

Gene: Eugenia\_52 Start: 47040, Stop: 45244, Start Num: 38

Candidate Starts for Eugenia\_52:

(Start: 38 @47040 has 111 MA's), (Start: 69 @46947 has 103 MA's), (Start: 82 @46923 has 11 MA's), (Start: 87 @46866 has 1 MA's), (Start: 89 @46857 has 2 MA's), (104, 46767), (108, 46734), (119, 46677), (121, 46665), (123, 46641), (126, 46629), (127, 46620), (138, 46560), (147, 46470), (151, 46425), (158, 46365), (167, 46311), (173, 46263), (176, 46242), (198, 46110), (208, 46041), (210, 46035), (212, 46008), (214, 45993), (219, 45951), (224, 45903), (227, 45873), (232, 45846), (266, 45720), (268, 45714), (271, 45687), (281, 45642), (286, 45627), (288, 45621), (301, 45567), (303, 45558), (352, 45330), (358, 45294),

Gene: Evaa\_45 Start: 40446, Stop: 38749, Start Num: 67

Candidate Starts for Evaa\_45:

(Start: 67 @40446 has 49 MA's), (95, 40311), (102, 40266), (Start: 103 @40263 has 1 MA's), (104, 40260), (108, 40227), (118, 40173), (134, 40071), (145, 39981), (147, 39960), (152, 39915), (163, 39837), (165, 39831), (167, 39804), (173, 39756), (181, 39696), (183, 39690), (198, 39603), (209, 39531), (212, 39501), (214, 39486), (219, 39444), (224, 39396), (227, 39366), (237, 39315), (266, 39225), (275, 39165), (277, 39156), (322, 38991), (346, 38868), (350, 38844), (353, 38817), (362, 38781), (368, 38766),

Gene: Fanaw\_46 Start: 47077, Stop: 45368, Start Num: 69

Candidate Starts for Fanaw\_46:

(Start: 69 @47077 has 103 MA's), (102, 46894), (105, 46885), (108, 46855), (123, 46765), (138, 46684), (145, 46615), (147, 46594), (158, 46495), (163, 46474), (167, 46441), (169, 46432), (172, 46396), (173, 46393), (177, 46369), (194, 46258), (196, 46252), (198, 46240), (208, 46171), (210, 46165), (212, 46138), (213, 46126), (214, 46123), (219, 46081), (224, 46033), (227, 46003), (237, 45952), (262, 45871), (265, 45856), (266, 45850), (267, 45847), (272, 45814), (273, 45808), (274, 45799), (280, 45772), (285, 45757), (286, 45754), (290, 45745), (295, 45727), (298, 45700), (303, 45679), (329, 45568), (352, 45445), (359, 45406), (362, 45394),

Gene: Fang\_53 Start: 47188, Stop: 45392, Start Num: 38

Candidate Starts for Fang\_53:

(Start: 38 @47188 has 111 MA's), (Start: 69 @47095 has 103 MA's), (Start: 82 @47071 has 11 MA's), (Start: 87 @47014 has 1 MA's), (Start: 89 @47005 has 2 MA's), (104, 46915), (108, 46882), (119, 46825), (121, 46813), (123, 46789), (126, 46777), (127, 46768), (138, 46708), (147, 46618), (151, 46573), (158, 46513), (167, 46459), (173, 46411), (176, 46390), (198, 46258), (208, 46189), (210, 46183), (212, 46156), (214, 46141), (219, 46099), (224, 46051), (227, 46021), (232, 45994), (266, 45868), (268, 45862), (271, 45835), (280, 45793), (281, 45790), (286, 45775), (288, 45769), (301,

45715), (303, 45706), (352, 45478), (358, 45442),

Gene: Faze9\_50 Start: 46701, Stop: 44986, Start Num: 67

Candidate Starts for Faze9\_50:

(10, 47130), (12, 47094), (14, 47022), (16, 47007), (20, 46956), (Start: 67 @46701 has 49 MA's), (75, 46689), (102, 46518), (Start: 103 @46515 has 1 MA's), (108, 46479), (109, 46467), (111, 46458), (119, 46422), (120, 46419), (123, 46386), (134, 46323), (147, 46215), (151, 46176), (163, 46095), (167, 46062), (169, 46053), (173, 46014), (176, 45993), (177, 45990), (183, 45948), (185, 45933), (186, 45918), (193, 45888), (198, 45861), (203, 45813), (209, 45789), (210, 45786), (212, 45759), (213, 45747), (215, 45741), (219, 45702), (224, 45654), (227, 45624), (228, 45618), (237, 45573), (251, 45498), (253, 45486), (261, 45459), (262, 45456), (265, 45441), (275, 45375), (286, 45342), (309, 45264), (318, 45234), (319, 45231), (322, 45219), (331, 45180), (344, 45102), (345, 45099), (352, 45060), (366, 44994),

Gene: Feyre\_67 Start: 47791, Stop: 49500, Start Num: 77

Candidate Starts for Feyre\_67:

(Start: 77 @47791 has 31 MA's), (92, 47884), (Start: 103 @47962 has 1 MA's), (104, 47965), (107, 47989), (108, 47998), (116, 48037), (119, 48055), (127, 48112), (131, 48139), (132, 48142), (140, 48205), (147, 48265), (150, 48295), (151, 48304), (161, 48379), (162, 48382), (168, 48424), (169, 48427), (172, 48463), (173, 48466), (181, 48532), (182, 48535), (183, 48538), (185, 48553), (186, 48568), (189, 48583), (196, 48613), (198, 48625), (212, 48727), (213, 48739), (214, 48742), (215, 48745), (217, 48766), (219, 48784), (223, 48829), (224, 48832), (230, 48871), (233, 48892), (265, 49021), (275, 49090), (276, 49093), (286, 49126), (287, 49129), (288, 49132), (313, 49195), (320, 49204), (322, 49210), (327, 49234), (339, 49267), (352, 49351), (353, 49366), (361, 49393), (362, 49402), (364, 49417),

Gene: FluffyNinja\_53 Start: 47202, Stop: 45406, Start Num: 38

Candidate Starts for FluffyNinja\_53:

(Start: 38 @47202 has 111 MA's), (Start: 69 @47109 has 103 MA's), (Start: 82 @47085 has 11 MA's), (Start: 87 @47028 has 1 MA's), (Start: 89 @47019 has 2 MA's), (104, 46929), (108, 46896), (119, 46839), (121, 46827), (123, 46803), (126, 46791), (127, 46782), (138, 46722), (147, 46632), (151, 46587), (158, 46527), (173, 46425), (176, 46404), (198, 46272), (208, 46203), (210, 46197), (212, 46170), (214, 46155), (219, 46113), (224, 46065), (227, 46035), (232, 46008), (266, 45882), (268, 45876), (271, 45849), (280, 45807), (281, 45804), (286, 45789), (288, 45783), (301, 45729), (303, 45720), (352, 45492), (358, 45456),

Gene: Fortunato\_48 Start: 47438, Stop: 45729, Start Num: 69

Candidate Starts for Fortunato\_48:

(Start: 69 @47438 has 103 MA's), (102, 47255), (108, 47216), (111, 47195), (123, 47126), (138, 47045), (145, 46976), (147, 46955), (158, 46856), (163, 46835), (167, 46802), (169, 46793), (172, 46757), (173, 46754), (177, 46730), (194, 46619), (196, 46613), (198, 46601), (208, 46532), (210, 46526), (212, 46499), (213, 46487), (214, 46484), (219, 46442), (224, 46394), (227, 46364), (237, 46313), (262, 46232), (265, 46217), (266, 46211), (267, 46208), (272, 46175), (273, 46169), (274, 46160), (280, 46133), (285, 46118), (286, 46115), (290, 46106), (295, 46088), (298, 46061), (303, 46040), (329, 45929), (352, 45806), (359, 45767), (362, 45755),

Gene: Fozzie\_51 Start: 46972, Stop: 45269, Start Num: 68

Candidate Starts for Fozzie\_51:

(Start: 68 @46972 has 66 MA's), (Start: 82 @46948 has 11 MA's), (Start: 87 @46891 has 1 MA's), (Start: 89 @46882 has 2 MA's), (104, 46792), (108, 46759), (119, 46702), (121, 46690), (123, 46666), (126, 46654), (127, 46645), (138, 46585), (147, 46495), (151, 46450), (158, 46390), (167, 46336), (173, 46288), (176, 46267), (198, 46135), (208, 46066), (210, 46060), (212, 46033), (214, 46018), (219, 45976), (224, 45928), (227, 45898), (232, 45871), (266, 45745), (268, 45739), (271, 45712),

(281, 45667), (286, 45652), (288, 45646), (301, 45592), (303, 45583), (352, 45355), (358, 45319),

Gene: Frankicide\_52 Start: 46974, Stop: 45271, Start Num: 68

Candidate Starts for Frankicide\_52:

(Start: 68 @46974 has 66 MA's), (Start: 82 @46950 has 11 MA's), (Start: 87 @46893 has 1 MA's), (Start: 89 @46884 has 2 MA's), (104, 46794), (108, 46761), (119, 46704), (121, 46692), (123, 46668), (126, 46656), (127, 46647), (138, 46587), (147, 46497), (151, 46452), (173, 46290), (176, 46269), (198, 46137), (208, 46068), (210, 46062), (212, 46035), (214, 46020), (219, 45978), (224, 45930), (227, 45900), (232, 45873), (266, 45747), (268, 45741), (271, 45714), (281, 45669), (286, 45654), (288, 45648), (301, 45594), (303, 45585), (352, 45357), (358, 45321),

Gene: Frederick\_48 Start: 47414, Stop: 45702, Start Num: 69

Candidate Starts for Frederick\_48:

(Start: 69 @47414 has 103 MA's), (102, 47231), (108, 47192), (111, 47171), (123, 47102), (138, 47021), (145, 46952), (147, 46931), (158, 46832), (163, 46811), (167, 46778), (169, 46769), (173, 46730), (177, 46706), (194, 46595), (196, 46589), (198, 46577), (208, 46508), (210, 46502), (212, 46475), (213, 46463), (214, 46460), (219, 46418), (224, 46370), (227, 46340), (237, 46289), (262, 46205), (265, 46190), (266, 46184), (267, 46181), (272, 46148), (273, 46142), (274, 46133), (280, 46106), (285, 46091), (286, 46088), (290, 46079), (295, 46061), (298, 46034), (303, 46013), (329, 45902), (349, 45794), (352, 45779), (359, 45740),

Gene: FrenchFry\_51 Start: 46680, Stop: 44965, Start Num: 67

Candidate Starts for FrenchFry\_51:

(10, 47109), (12, 47073), (14, 47001), (16, 46986), (20, 46935), (Start: 67 @46680 has 49 MA's), (75, 46668), (102, 46497), (Start: 103 @46494 has 1 MA's), (108, 46458), (109, 46446), (111, 46437), (119, 46401), (120, 46398), (123, 46365), (134, 46302), (147, 46194), (151, 46155), (163, 46074), (167, 46041), (169, 46032), (173, 45993), (176, 45972), (177, 45969), (183, 45927), (185, 45912), (186, 45897), (193, 45867), (198, 45840), (203, 45792), (209, 45768), (210, 45765), (212, 45738), (213, 45726), (215, 45720), (219, 45681), (224, 45633), (227, 45603), (228, 45597), (237, 45552), (251, 45477), (253, 45465), (261, 45438), (262, 45435), (265, 45420), (275, 45354), (286, 45321), (309, 45243), (318, 45213), (319, 45210), (322, 45198), (331, 45159), (352, 45039), (366, 44973),

Gene: Fresco\_46 Start: 40113, Stop: 38449, Start Num: 67

Candidate Starts for Fresco\_46:

(36, 40215), (Start: 65 @40116 has 1 MA's), (Start: 67 @40113 has 49 MA's), (101, 39939), (102, 39933), (104, 39927), (108, 39894), (109, 39882), (119, 39837), (145, 39651), (147, 39630), (158, 39531), (163, 39510), (167, 39477), (173, 39429), (181, 39369), (207, 39213), (209, 39204), (212, 39174), (214, 39159), (219, 39117), (224, 39069), (227, 39039), (229, 39030), (286, 38796), (301, 38757), (303, 38748), (322, 38685), (346, 38562), (352, 38526), (368, 38460),

Gene: Freya\_51 Start: 46635, Stop: 44932, Start Num: 68

Candidate Starts for Freya\_51:

(Start: 68 @46635 has 66 MA's), (Start: 82 @46611 has 11 MA's), (Start: 87 @46554 has 1 MA's), (Start: 89 @46545 has 2 MA's), (104, 46455), (108, 46422), (119, 46365), (121, 46353), (123, 46329), (126, 46317), (127, 46308), (138, 46248), (147, 46158), (151, 46113), (158, 46053), (167, 45999), (173, 45951), (176, 45930), (198, 45798), (208, 45729), (210, 45723), (212, 45696), (214, 45681), (219, 45639), (224, 45591), (227, 45561), (232, 45534), (266, 45408), (268, 45402), (271, 45375), (281, 45330), (286, 45315), (288, 45309), (301, 45255), (303, 45246), (352, 45018), (358, 44982),

Gene: FriarPreacher\_51 Start: 47079, Stop: 45283, Start Num: 38

Candidate Starts for FriarPreacher\_51:

(Start: 38 @47079 has 111 MA's), (Start: 69 @46986 has 103 MA's), (Start: 82 @46962 has 11 MA's), (Start: 87 @46905 has 1 MA's), (Start: 89 @46896 has 2 MA's), (104, 46806), (108, 46773), (119,

46716), (121, 46704), (123, 46680), (126, 46668), (127, 46659), (138, 46599), (147, 46509), (151, 46464), (158, 46404), (173, 46302), (176, 46281), (198, 46149), (208, 46080), (210, 46074), (212, 46047), (214, 46032), (219, 45990), (224, 45942), (227, 45912), (232, 45885), (266, 45759), (268, 45753), (271, 45726), (280, 45684), (281, 45681), (286, 45666), (288, 45660), (301, 45606), (303, 45597), (352, 45369), (358, 45333),

Gene: Fringe\_53 Start: 47071, Stop: 45368, Start Num: 69

Candidate Starts for Fringe\_53:

(Start: 38 @47164 has 111 MA's), (Start: 69 @47071 has 103 MA's), (Start: 82 @47047 has 11 MA's), (Start: 87 @46990 has 1 MA's), (Start: 89 @46981 has 2 MA's), (104, 46891), (108, 46858), (119, 46801), (121, 46789), (123, 46765), (126, 46753), (127, 46744), (138, 46684), (147, 46594), (151, 46549), (158, 46489), (173, 46387), (176, 46366), (198, 46234), (208, 46165), (210, 46159), (212, 46132), (214, 46117), (219, 46075), (224, 46027), (227, 45997), (232, 45970), (266, 45844), (268, 45838), (271, 45811), (280, 45769), (281, 45766), (286, 45751), (288, 45745), (301, 45691), (303, 45682), (352, 45454), (358, 45418),

Gene: FugateOSU\_51 Start: 46742, Stop: 44946, Start Num: 38

Candidate Starts for FugateOSU\_51:

(Start: 38 @46742 has 111 MA's), (Start: 69 @46649 has 103 MA's), (Start: 82 @46625 has 11 MA's), (Start: 87 @46568 has 1 MA's), (Start: 89 @46559 has 2 MA's), (104, 46469), (108, 46436), (119, 46379), (121, 46367), (123, 46343), (126, 46331), (127, 46322), (138, 46262), (147, 46172), (151, 46127), (158, 46067), (167, 46013), (173, 45965), (176, 45944), (198, 45812), (208, 45743), (210, 45737), (212, 45710), (214, 45695), (219, 45653), (224, 45605), (227, 45575), (232, 45548), (266, 45422), (268, 45416), (271, 45389), (281, 45344), (286, 45329), (288, 45323), (301, 45269), (303, 45260), (352, 45032), (358, 44996),

Gene: Funsized\_55 Start: 50181, Stop: 48472, Start Num: 69

Candidate Starts for Funsized\_55:

(Start: 39 @50262 has 1 MA's), (45, 50253), (Start: 69 @50181 has 103 MA's), (92, 50082), (98, 50025), (Start: 103 @50004 has 1 MA's), (108, 49968), (119, 49914), (122, 49881), (123, 49878), (134, 49815), (138, 49797), (145, 49728), (147, 49707), (148, 49686), (156, 49620), (167, 49554), (169, 49545), (172, 49509), (173, 49506), (176, 49485), (177, 49482), (185, 49425), (196, 49365), (198, 49353), (208, 49284), (210, 49278), (212, 49251), (213, 49239), (214, 49236), (219, 49194), (221, 49179), (224, 49146), (227, 49116), (237, 49065), (262, 48984), (266, 48963), (275, 48903), (280, 48885), (286, 48867), (303, 48777), (329, 48672), (332, 48663), (344, 48591), (352, 48549), (361, 48507),

Gene: Gadget\_53 Start: 47587, Stop: 45788, Start Num: 43

Candidate Starts for Gadget\_53:

(7, 47935), (17, 47773), (19, 47752), (25, 47677), (Start: 43 @47587 has 7 MA's), (51, 47563), (Start: 54 @47557 has 3 MA's), (55, 47554), (Start: 64 @47485 has 34 MA's), (Start: 103 @47287 has 1 MA's), (108, 47251), (119, 47194), (127, 47137), (134, 47095), (136, 47089), (141, 47032), (146, 47005), (147, 46987), (158, 46882), (161, 46867), (171, 46792), (173, 46780), (176, 46759), (183, 46714), (193, 46651), (205, 46567), (209, 46552), (210, 46549), (211, 46546), (212, 46522), (215, 46504), (219, 46465), (224, 46417), (227, 46387), (231, 46363), (238, 46321), (264, 46243), (270, 46216), (277, 46165), (286, 46141), (312, 46054), (325, 46012), (344, 45907), (347, 45892), (352, 45865), (353, 45850), (356, 45832),

Gene: Gareth\_51 Start: 46736, Stop: 44940, Start Num: 38

Candidate Starts for Gareth\_51:

(Start: 38 @46736 has 111 MA's), (Start: 69 @46643 has 103 MA's), (Start: 82 @46619 has 11 MA's), (Start: 87 @46562 has 1 MA's), (Start: 89 @46553 has 2 MA's), (104, 46463), (108, 46430), (119, 46373), (121, 46361), (123, 46337), (126, 46325), (127, 46316), (138, 46256), (147, 46166), (151,

46121), (158, 46061), (167, 46007), (173, 45959), (176, 45938), (198, 45806), (208, 45737), (210, 45731), (212, 45704), (214, 45689), (219, 45647), (224, 45599), (227, 45569), (232, 45542), (266, 45416), (268, 45410), (271, 45383), (281, 45338), (286, 45323), (288, 45317), (301, 45263), (303, 45254), (352, 45026), (358, 44990),

Gene: GeneCoco\_52 Start: 47051, Stop: 45255, Start Num: 38

Candidate Starts for GeneCoco\_52:

(Start: 38 @47051 has 111 MA's), (Start: 69 @46958 has 103 MA's), (Start: 82 @46934 has 11 MA's), (Start: 87 @46877 has 1 MA's), (Start: 89 @46868 has 2 MA's), (104, 46778), (108, 46745), (119, 46688), (121, 46676), (123, 46652), (126, 46640), (127, 46631), (138, 46571), (147, 46481), (151, 46436), (158, 46376), (167, 46322), (173, 46274), (176, 46253), (198, 46121), (208, 46052), (210, 46046), (212, 46019), (214, 46004), (219, 45962), (224, 45914), (227, 45884), (232, 45857), (266, 45731), (268, 45725), (271, 45698), (281, 45653), (286, 45638), (288, 45632), (301, 45578), (303, 45569), (352, 45341), (358, 45305),

Gene: Gengar\_64 Start: 45778, Stop: 47487, Start Num: 77

Candidate Starts for Gengar\_64:

(Start: 77 @45778 has 31 MA's), (92, 45871), (96, 45913), (Start: 103 @45949 has 1 MA's), (104, 45952), (107, 45976), (108, 45985), (116, 46024), (119, 46042), (127, 46099), (131, 46126), (132, 46129), (140, 46192), (147, 46252), (150, 46282), (151, 46291), (158, 46351), (161, 46366), (162, 46369), (168, 46411), (169, 46414), (172, 46450), (173, 46453), (181, 46519), (182, 46522), (183, 46525), (185, 46540), (186, 46555), (189, 46570), (196, 46600), (198, 46612), (212, 46714), (213, 46726), (214, 46729), (215, 46732), (217, 46753), (219, 46771), (223, 46816), (224, 46819), (230, 46858), (233, 46879), (265, 47008), (275, 47077), (276, 47080), (286, 47113), (287, 47116), (288, 47119), (313, 47182), (320, 47191), (322, 47197), (327, 47221), (339, 47254), (348, 47317), (352, 47338), (353, 47353), (361, 47380), (362, 47389), (364, 47404),

Gene: Gervas\_53 Start: 47597, Stop: 45900, Start Num: 64

Candidate Starts for Gervas\_53:

(Start: 64 @47597 has 34 MA's), (Start: 103 @47399 has 1 MA's), (108, 47363), (119, 47306), (127, 47249), (134, 47207), (136, 47201), (141, 47144), (146, 47117), (147, 47099), (158, 46994), (171, 46904), (173, 46892), (176, 46871), (183, 46826), (193, 46763), (205, 46679), (209, 46664), (210, 46661), (211, 46658), (212, 46634), (215, 46616), (219, 46577), (224, 46529), (227, 46499), (231, 46475), (238, 46433), (264, 46355), (270, 46328), (277, 46277), (286, 46253), (301, 46205), (312, 46166), (325, 46124), (344, 46019), (352, 45977), (353, 45962),

Gene: GinPorsche\_46 Start: 46387, Stop: 44672, Start Num: 69

Candidate Starts for GinPorsche\_46:

(Start: 69 @46387 has 103 MA's), (105, 46195), (108, 46165), (111, 46144), (119, 46108), (123, 46072), (125, 46063), (145, 45922), (147, 45901), (148, 45880), (158, 45802), (163, 45781), (167, 45748), (169, 45739), (172, 45703), (173, 45700), (177, 45676), (196, 45559), (198, 45547), (202, 45523), (208, 45478), (210, 45472), (212, 45445), (213, 45433), (214, 45430), (219, 45388), (224, 45340), (227, 45310), (237, 45259), (251, 45211), (262, 45175), (266, 45154), (267, 45151), (273, 45112), (280, 45076), (285, 45061), (286, 45058), (290, 45049), (295, 45031), (298, 45004), (303, 44983), (329, 44872), (352, 44749),

Gene: Giraffe\_52 Start: 46760, Stop: 44964, Start Num: 38

Candidate Starts for Giraffe\_52:

(Start: 38 @46760 has 111 MA's), (Start: 69 @46667 has 103 MA's), (Start: 82 @46643 has 11 MA's), (Start: 87 @46586 has 1 MA's), (Start: 89 @46577 has 2 MA's), (104, 46487), (108, 46454), (119, 46397), (121, 46385), (123, 46361), (126, 46349), (127, 46340), (138, 46280), (147, 46190), (151, 46145), (158, 46085), (167, 46031), (173, 45983), (176, 45962), (198, 45830), (208, 45761), (210, 45755), (212, 45728), (214, 45713), (219, 45671), (224, 45623), (227, 45593), (232, 45566), (266,

45440), (268, 45434), (271, 45407), (281, 45362), (286, 45347), (288, 45341), (301, 45287), (303, 45278), (352, 45050), (358, 45014),

Gene: Glass\_51 Start: 46685, Stop: 44970, Start Num: 67

Candidate Starts for Glass\_51:

(Start: 67 @46685 has 49 MA's), (102, 46502), (Start: 103 @46499 has 1 MA's), (108, 46463), (109, 46451), (111, 46442), (119, 46406), (120, 46403), (123, 46370), (134, 46307), (147, 46199), (151, 46160), (163, 46079), (167, 46046), (169, 46037), (173, 45998), (176, 45977), (177, 45974), (183, 45932), (185, 45917), (186, 45902), (193, 45872), (198, 45845), (202, 45821), (203, 45797), (209, 45773), (210, 45770), (212, 45743), (213, 45731), (215, 45725), (219, 45686), (224, 45638), (227, 45608), (237, 45557), (240, 45530), (251, 45482), (253, 45470), (261, 45443), (262, 45440), (265, 45425), (275, 45359), (286, 45326), (309, 45248), (318, 45218), (319, 45215), (322, 45203), (331, 45164), (352, 45044), (366, 44978),

Gene: GlenHope\_53 Start: 47220, Stop: 45451, Start Num: 54

Candidate Starts for GlenHope\_53:

(7, 47598), (17, 47436), (19, 47415), (25, 47340), (Start: 43 @47250 has 7 MA's), (51, 47226), (Start: 54 @47220 has 3 MA's), (55, 47217), (Start: 64 @47148 has 34 MA's), (Start: 103 @46950 has 1 MA's), (108, 46914), (119, 46857), (127, 46800), (134, 46758), (136, 46752), (141, 46695), (146, 46668), (147, 46650), (158, 46545), (171, 46455), (173, 46443), (176, 46422), (183, 46377), (193, 46314), (205, 46230), (209, 46215), (210, 46212), (211, 46209), (212, 46185), (215, 46167), (219, 46128), (224, 46080), (227, 46050), (231, 46026), (238, 45984), (264, 45906), (270, 45879), (277, 45828), (286, 45804), (301, 45756), (312, 45717), (325, 45675), (344, 45570), (352, 45528), (353, 45513),

Gene: Godines\_51 Start: 46637, Stop: 44922, Start Num: 67

Candidate Starts for Godines\_51:

(Start: 67 @46637 has 49 MA's), (75, 46625), (96, 46487), (102, 46454), (Start: 103 @46451 has 1 MA's), (108, 46415), (109, 46403), (111, 46394), (119, 46358), (120, 46355), (123, 46322), (134, 46259), (147, 46151), (151, 46112), (163, 46031), (167, 45998), (169, 45989), (173, 45950), (176, 45929), (177, 45926), (183, 45884), (185, 45869), (186, 45854), (193, 45824), (198, 45797), (202, 45773), (203, 45749), (209, 45725), (210, 45722), (212, 45695), (213, 45683), (215, 45677), (219, 45638), (224, 45590), (227, 45560), (237, 45509), (240, 45482), (251, 45434), (253, 45422), (261, 45395), (262, 45392), (265, 45377), (275, 45311), (286, 45278), (309, 45200), (318, 45170), (319, 45167), (322, 45155), (331, 45116), (344, 45038), (352, 44996), (366, 44930),

Gene: Gophee\_52 Start: 46917, Stop: 45238, Start Num: 82

Candidate Starts for Gophee\_52:

(Start: 38 @47034 has 111 MA's), (Start: 69 @46941 has 103 MA's), (Start: 82 @46917 has 11 MA's), (Start: 87 @46860 has 1 MA's), (Start: 89 @46851 has 2 MA's), (104, 46761), (108, 46728), (119, 46671), (121, 46659), (123, 46635), (126, 46623), (127, 46614), (138, 46554), (147, 46464), (151, 46419), (158, 46359), (167, 46305), (173, 46257), (176, 46236), (198, 46104), (208, 46035), (210, 46029), (212, 46002), (214, 45987), (219, 45945), (224, 45897), (227, 45867), (232, 45840), (266, 45714), (268, 45708), (271, 45681), (280, 45639), (281, 45636), (286, 45621), (288, 45615), (301, 45561), (303, 45552), (352, 45324), (358, 45288),

Gene: Grand2040\_51 Start: 46754, Stop: 44958, Start Num: 38

Candidate Starts for Grand2040\_51:

(Start: 38 @46754 has 111 MA's), (Start: 69 @46661 has 103 MA's), (Start: 82 @46637 has 11 MA's), (Start: 87 @46580 has 1 MA's), (Start: 89 @46571 has 2 MA's), (104, 46481), (108, 46448), (119, 46391), (121, 46379), (123, 46355), (126, 46343), (127, 46334), (138, 46274), (147, 46184), (151, 46139), (158, 46079), (167, 46025), (173, 45977), (176, 45956), (198, 45824), (208, 45755), (210, 45749), (212, 45722), (214, 45707), (219, 45665), (224, 45617), (227, 45587), (232, 45560), (266,



45434), (268, 45428), (271, 45401), (281, 45356), (286, 45341), (288, 45335), (301, 45281), (303, 45272), (352, 45044), (358, 45008),

Gene: Guillsminger\_65 Start: 45720, Stop: 47429, Start Num: 77

Candidate Starts for Guillsminger\_65:

(Start: 77 @45720 has 31 MA's), (92, 45813), (96, 45855), (Start: 103 @45891 has 1 MA's), (104, 45894), (107, 45918), (108, 45927), (116, 45966), (119, 45984), (127, 46041), (131, 46068), (132, 46071), (140, 46134), (147, 46194), (150, 46224), (151, 46233), (158, 46293), (161, 46308), (162, 46311), (168, 46353), (169, 46356), (172, 46392), (173, 46395), (181, 46461), (182, 46464), (183, 46467), (185, 46482), (186, 46497), (189, 46512), (196, 46542), (198, 46554), (212, 46656), (213, 46668), (214, 46671), (215, 46674), (217, 46695), (219, 46713), (223, 46758), (224, 46761), (230, 46800), (233, 46821), (265, 46950), (275, 47019), (276, 47022), (286, 47055), (287, 47058), (288, 47061), (313, 47124), (320, 47133), (322, 47139), (327, 47163), (339, 47196), (348, 47259), (352, 47280), (353, 47295), (361, 47322), (362, 47331), (364, 47346),

Gene: Gustav\_35 Start: 27998, Stop: 26355, Start Num: 79

Candidate Starts for Gustav\_35:

(26, 28190), (29, 28175), (32, 28163), (33, 28160), (Start: 39 @28133 has 1 MA's), (Start: 79 @27998 has 7 MA's), (84, 27956), (88, 27920), (92, 27902), (97, 27854), (104, 27821), (108, 27788), (111, 27767), (127, 27680), (129, 27662), (131, 27653), (133, 27647), (134, 27638), (137, 27629), (142, 27554), (147, 27527), (153, 27482), (163, 27413), (165, 27407), (169, 27371), (173, 27332), (175, 27320), (177, 27308), (181, 27272), (183, 27266), (185, 27251), (194, 27197), (206, 27119), (214, 27062), (215, 27059), (219, 27020), (223, 26975), (227, 26942), (229, 26933), (239, 26873), (241, 26870), (244, 26855), (250, 26834), (270, 26771), (273, 26747), (286, 26699), (352, 26420),

Gene: Gwilliam\_53 Start: 47040, Stop: 45244, Start Num: 38

Candidate Starts for Gwilliam\_53:

(Start: 38 @47040 has 111 MA's), (Start: 69 @46947 has 103 MA's), (Start: 82 @46923 has 11 MA's), (Start: 87 @46866 has 1 MA's), (Start: 89 @46857 has 2 MA's), (104, 46767), (108, 46734), (119, 46677), (121, 46665), (123, 46641), (126, 46629), (127, 46620), (138, 46560), (147, 46470), (151, 46425), (158, 46365), (167, 46311), (173, 46263), (176, 46242), (198, 46110), (208, 46041), (210, 46035), (212, 46008), (214, 45993), (219, 45951), (224, 45903), (227, 45873), (232, 45846), (266, 45720), (268, 45714), (271, 45687), (281, 45642), (286, 45627), (288, 45621), (301, 45567), (303, 45558), (352, 45330), (358, 45294),

Gene: Gyarad\_0052 Start: 46961, Stop: 45258, Start Num: 68

Candidate Starts for Gyarad\_0052:

(13, 47294), (15, 47267), (Start: 68 @46961 has 66 MA's), (Start: 82 @46937 has 11 MA's), (Start: 87 @46880 has 1 MA's), (Start: 89 @46871 has 2 MA's), (104, 46781), (108, 46748), (119, 46691), (121, 46679), (123, 46655), (126, 46643), (127, 46634), (138, 46574), (147, 46484), (151, 46439), (173, 46277), (176, 46256), (198, 46124), (208, 46055), (210, 46049), (212, 46022), (214, 46007), (219, 45965), (224, 45917), (227, 45887), (232, 45860), (266, 45734), (268, 45728), (271, 45701), (281, 45656), (286, 45641), (288, 45635), (301, 45581), (303, 45572), (352, 45344), (358, 45308),

Gene: HSavage\_52 Start: 46953, Stop: 45250, Start Num: 68

Candidate Starts for HSavage\_52:

(Start: 68 @46953 has 66 MA's), (Start: 82 @46929 has 11 MA's), (Start: 87 @46872 has 1 MA's), (Start: 89 @46863 has 2 MA's), (104, 46773), (108, 46740), (119, 46683), (121, 46671), (123, 46647), (126, 46635), (127, 46626), (138, 46566), (147, 46476), (151, 46431), (173, 46269), (176, 46248), (198, 46116), (208, 46047), (210, 46041), (212, 46014), (214, 45999), (219, 45957), (224, 45909), (227, 45879), (232, 45852), (266, 45726), (268, 45720), (271, 45693), (281, 45648), (286, 45633), (288, 45627), (301, 45573), (303, 45564), (352, 45336), (358, 45300),

Gene: Haimas\_52 Start: 46947, Stop: 45244, Start Num: 68

Candidate Starts for Haimas\_52:

(13, 47280), (15, 47253), (Start: 68 @46947 has 66 MA's), (Start: 82 @46923 has 11 MA's), (Start: 87 @46866 has 1 MA's), (Start: 89 @46857 has 2 MA's), (104, 46767), (108, 46734), (119, 46677), (121, 46665), (123, 46641), (126, 46629), (127, 46620), (138, 46560), (147, 46470), (151, 46425), (158, 46365), (173, 46263), (176, 46242), (198, 46110), (208, 46041), (210, 46035), (212, 46008), (214, 45993), (219, 45951), (224, 45903), (227, 45873), (232, 45846), (266, 45720), (268, 45714), (271, 45687), (281, 45642), (286, 45627), (288, 45621), (301, 45567), (303, 45558), (352, 45330), (358, 45294),

Gene: Haleema\_51 Start: 46661, Stop: 44958, Start Num: 69

Candidate Starts for Haleema\_51:

(Start: 69 @46661 has 103 MA's), (Start: 82 @46637 has 11 MA's), (Start: 87 @46580 has 1 MA's), (Start: 89 @46571 has 2 MA's), (104, 46481), (108, 46448), (119, 46391), (121, 46379), (123, 46355), (126, 46343), (127, 46334), (138, 46274), (147, 46184), (151, 46139), (158, 46079), (167, 46025), (173, 45977), (176, 45956), (198, 45824), (208, 45755), (210, 45749), (212, 45722), (214, 45707), (219, 45665), (224, 45617), (227, 45587), (232, 45560), (266, 45434), (268, 45428), (271, 45401), (280, 45359), (281, 45356), (286, 45341), (288, 45335), (301, 45281), (303, 45272), (352, 45044), (358, 45008),

Gene: Halfpint\_51 Start: 46973, Stop: 45276, Start Num: 64

Candidate Starts for Halfpint\_51:

(Start: 64 @46973 has 34 MA's), (Start: 103 @46775 has 1 MA's), (108, 46739), (119, 46682), (127, 46625), (134, 46583), (136, 46577), (141, 46520), (146, 46493), (147, 46475), (158, 46370), (171, 46280), (173, 46268), (176, 46247), (183, 46202), (193, 46139), (205, 46055), (209, 46040), (210, 46037), (211, 46034), (212, 46010), (215, 45992), (219, 45953), (224, 45905), (227, 45875), (231, 45851), (238, 45809), (264, 45731), (270, 45704), (277, 45653), (286, 45629), (301, 45581), (312, 45542), (325, 45500), (344, 45395), (352, 45353), (353, 45338),

Gene: Hally898\_46 Start: 46399, Stop: 44684, Start Num: 69

Candidate Starts for Hally898\_46:

(Start: 69 @46399 has 103 MA's), (105, 46207), (108, 46177), (111, 46156), (119, 46120), (123, 46084), (125, 46075), (145, 45934), (147, 45913), (148, 45892), (158, 45814), (163, 45793), (167, 45760), (169, 45751), (172, 45715), (173, 45712), (177, 45688), (196, 45571), (198, 45559), (202, 45535), (208, 45490), (210, 45484), (212, 45457), (213, 45445), (214, 45442), (219, 45400), (224, 45352), (227, 45322), (237, 45271), (251, 45223), (262, 45187), (266, 45166), (267, 45163), (273, 45124), (280, 45088), (285, 45073), (286, 45070), (290, 45061), (295, 45043), (298, 45016), (303, 44995), (329, 44884), (352, 44761),

Gene: Hamish\_52 Start: 46940, Stop: 45237, Start Num: 68

Candidate Starts for Hamish\_52:

(13, 47273), (15, 47246), (Start: 68 @46940 has 66 MA's), (Start: 82 @46916 has 11 MA's), (Start: 87 @46859 has 1 MA's), (Start: 89 @46850 has 2 MA's), (104, 46760), (108, 46727), (119, 46670), (121, 46658), (123, 46634), (126, 46622), (127, 46613), (138, 46553), (147, 46463), (151, 46418), (158, 46358), (173, 46256), (176, 46235), (198, 46103), (208, 46034), (210, 46028), (212, 46001), (214, 45986), (219, 45944), (224, 45896), (227, 45866), (232, 45839), (266, 45713), (268, 45707), (271, 45680), (281, 45635), (286, 45620), (288, 45614), (301, 45560), (303, 45551), (352, 45323), (358, 45287),

Gene: Hangman\_47 Start: 47517, Stop: 45808, Start Num: 69

Candidate Starts for Hangman\_47:

(Start: 69 @47517 has 103 MA's), (102, 47334), (108, 47295), (111, 47274), (123, 47205), (138, 47124), (145, 47055), (147, 47034), (158, 46935), (163, 46914), (167, 46881), (169, 46872), (172,

46836), (173, 46833), (177, 46809), (194, 46698), (196, 46692), (198, 46680), (208, 46611), (210, 46605), (212, 46578), (213, 46566), (214, 46563), (219, 46521), (224, 46473), (227, 46443), (237, 46392), (262, 46311), (265, 46296), (266, 46290), (267, 46287), (272, 46254), (273, 46248), (274, 46239), (280, 46212), (285, 46197), (286, 46194), (290, 46185), (295, 46167), (298, 46140), (303, 46119), (329, 46008), (352, 45885), (359, 45846),

Gene: Hartsy\_52 Start: 47083, Stop: 45287, Start Num: 38

Candidate Starts for Hartsy\_52:

(Start: 38 @47083 has 111 MA's), (Start: 69 @46990 has 103 MA's), (Start: 82 @46966 has 11 MA's), (Start: 87 @46909 has 1 MA's), (Start: 89 @46900 has 2 MA's), (104, 46810), (108, 46777), (119, 46720), (121, 46708), (123, 46684), (126, 46672), (127, 46663), (138, 46603), (147, 46513), (151, 46468), (158, 46408), (167, 46354), (173, 46306), (176, 46285), (198, 46153), (208, 46084), (210, 46078), (212, 46051), (214, 46036), (219, 45994), (224, 45946), (227, 45916), (232, 45889), (266, 45763), (268, 45757), (271, 45730), (281, 45685), (286, 45670), (288, 45664), (301, 45610), (303, 45601), (352, 45373), (358, 45337),

Gene: Harvey\_52 Start: 46977, Stop: 45274, Start Num: 68

Candidate Starts for Harvey\_52:

(13, 47310), (15, 47283), (Start: 68 @46977 has 66 MA's), (Start: 82 @46953 has 11 MA's), (Start: 87 @46896 has 1 MA's), (Start: 89 @46887 has 2 MA's), (104, 46797), (108, 46764), (119, 46707), (121, 46695), (123, 46671), (126, 46659), (127, 46650), (138, 46590), (147, 46500), (151, 46455), (158, 46395), (173, 46293), (176, 46272), (198, 46140), (208, 46071), (210, 46065), (212, 46038), (214, 46023), (219, 45981), (224, 45933), (227, 45903), (232, 45876), (266, 45750), (268, 45744), (271, 45717), (280, 45675), (281, 45672), (286, 45657), (288, 45651), (301, 45597), (303, 45588), (352, 45360), (358, 45324),

Gene: HarveySr\_51 Start: 46825, Stop: 45128, Start Num: 64

Candidate Starts for HarveySr\_51:

(Start: 64 @46825 has 34 MA's), (Start: 103 @46627 has 1 MA's), (108, 46591), (119, 46534), (127, 46477), (134, 46435), (141, 46372), (146, 46345), (147, 46327), (158, 46222), (171, 46132), (173, 46120), (176, 46099), (183, 46054), (193, 45991), (205, 45907), (209, 45892), (210, 45889), (211, 45886), (212, 45862), (215, 45844), (219, 45805), (224, 45757), (227, 45727), (231, 45703), (238, 45661), (264, 45583), (270, 45556), (275, 45514), (277, 45505), (286, 45481), (312, 45394), (325, 45352), (344, 45247), (352, 45205), (353, 45190), (356, 45172),

Gene: Hashim76\_56 Start: 47369, Stop: 45522, Start Num: 44

Candidate Starts for Hashim76\_56:

(44, 47369), (Start: 74 @47282 has 2 MA's), (104, 47102), (108, 47069), (119, 47012), (145, 46826), (147, 46805), (151, 46766), (158, 46706), (159, 46703), (163, 46685), (173, 46604), (177, 46580), (196, 46463), (210, 46376), (212, 46349), (213, 46337), (214, 46334), (219, 46292), (224, 46244), (227, 46214), (232, 46187), (237, 46163), (263, 46031), (266, 46016), (305, 45833), (315, 45806), (317, 45797), (322, 45779), (332, 45737), (343, 45674), (352, 45623), (360, 45581),

Gene: Heath\_46 Start: 47028, Stop: 45316, Start Num: 69

Candidate Starts for Heath\_46:

(Start: 69 @47028 has 103 MA's), (105, 46836), (108, 46806), (111, 46785), (119, 46749), (123, 46713), (125, 46704), (145, 46563), (147, 46542), (148, 46521), (158, 46443), (163, 46422), (167, 46389), (169, 46380), (172, 46344), (173, 46341), (177, 46317), (194, 46206), (196, 46200), (198, 46188), (208, 46119), (210, 46113), (212, 46086), (213, 46074), (214, 46071), (219, 46029), (224, 45981), (227, 45951), (237, 45900), (262, 45819), (265, 45804), (266, 45798), (267, 45795), (272, 45762), (273, 45756), (274, 45747), (280, 45720), (285, 45705), (286, 45702), (290, 45693), (295, 45675), (298, 45648), (303, 45627), (329, 45516), (352, 45393), (359, 45354),

Gene: Heathcliff\_52 Start: 47119, Stop: 45422, Start Num: 64

Candidate Starts for Heathcliff\_52:

(Start: 64 @47119 has 34 MA's), (Start: 103 @46921 has 1 MA's), (108, 46885), (119, 46828), (127, 46771), (134, 46729), (136, 46723), (141, 46666), (146, 46639), (147, 46621), (158, 46516), (171, 46426), (173, 46414), (176, 46393), (183, 46348), (193, 46285), (205, 46201), (209, 46186), (210, 46183), (211, 46180), (212, 46156), (215, 46138), (219, 46099), (224, 46051), (227, 46021), (231, 45997), (238, 45955), (264, 45877), (270, 45850), (277, 45799), (286, 45775), (301, 45727), (312, 45688), (325, 45646), (344, 45541), (352, 45499), (353, 45484),

Gene: Hedgerow\_51 Start: 46694, Stop: 44979, Start Num: 67

Candidate Starts for Hedgerow\_51:

(10, 47123), (12, 47087), (14, 47015), (16, 47000), (20, 46949), (Start: 67 @46694 has 49 MA's), (75, 46682), (102, 46511), (Start: 103 @46508 has 1 MA's), (108, 46472), (109, 46460), (111, 46451), (119, 46415), (120, 46412), (123, 46379), (134, 46316), (147, 46208), (151, 46169), (163, 46088), (167, 46055), (169, 46046), (173, 46007), (176, 45986), (177, 45983), (183, 45941), (185, 45926), (186, 45911), (193, 45881), (198, 45854), (203, 45806), (209, 45782), (210, 45779), (212, 45752), (213, 45740), (215, 45734), (219, 45695), (224, 45647), (227, 45617), (228, 45611), (237, 45566), (251, 45491), (253, 45479), (261, 45452), (262, 45449), (265, 45434), (275, 45368), (286, 45335), (309, 45257), (318, 45227), (319, 45224), (322, 45212), (331, 45173), (344, 45095), (352, 45053), (366, 44987),

Gene: Heftyboy\_65 Start: 46099, Stop: 47808, Start Num: 77

Candidate Starts for Heftyboy\_65:

(Start: 77 @46099 has 31 MA's), (92, 46192), (Start: 103 @46270 has 1 MA's), (104, 46273), (107, 46297), (108, 46306), (116, 46345), (119, 46363), (127, 46420), (131, 46447), (132, 46450), (140, 46513), (147, 46573), (150, 46603), (151, 46612), (161, 46687), (162, 46690), (168, 46732), (169, 46735), (172, 46771), (173, 46774), (181, 46840), (182, 46843), (183, 46846), (185, 46861), (186, 46876), (189, 46891), (196, 46921), (198, 46933), (212, 47035), (213, 47047), (214, 47050), (215, 47053), (217, 47074), (219, 47092), (223, 47137), (224, 47140), (230, 47179), (233, 47200), (265, 47329), (275, 47398), (276, 47401), (286, 47434), (287, 47437), (288, 47440), (313, 47503), (320, 47512), (322, 47518), (327, 47542), (339, 47575), (348, 47638), (352, 47659), (353, 47674), (361, 47701), (362, 47710), (364, 47725),

Gene: Held\_52 Start: 46666, Stop: 44963, Start Num: 69

Candidate Starts for Held\_52:

(Start: 69 @46666 has 103 MA's), (Start: 82 @46642 has 11 MA's), (Start: 87 @46585 has 1 MA's), (Start: 89 @46576 has 2 MA's), (104, 46486), (108, 46453), (119, 46396), (121, 46384), (123, 46360), (126, 46348), (127, 46339), (138, 46279), (147, 46189), (151, 46144), (158, 46084), (167, 46030), (173, 45982), (176, 45961), (198, 45829), (208, 45760), (210, 45754), (212, 45727), (214, 45712), (219, 45670), (224, 45622), (227, 45592), (232, 45565), (266, 45439), (268, 45433), (271, 45406), (280, 45364), (281, 45361), (286, 45346), (288, 45340), (301, 45286), (303, 45277), (352, 45049), (358, 45013),

Gene: HenryJackson\_51 Start: 46754, Stop: 44958, Start Num: 38

Candidate Starts for HenryJackson\_51:

(Start: 38 @46754 has 111 MA's), (Start: 69 @46661 has 103 MA's), (Start: 82 @46637 has 11 MA's), (Start: 87 @46580 has 1 MA's), (Start: 89 @46571 has 2 MA's), (104, 46481), (108, 46448), (119, 46391), (121, 46379), (123, 46355), (126, 46343), (127, 46334), (138, 46274), (147, 46184), (151, 46139), (158, 46079), (167, 46025), (173, 45977), (176, 45956), (198, 45824), (208, 45755), (210, 45749), (212, 45722), (214, 45707), (219, 45665), (224, 45617), (227, 45587), (232, 45560), (266, 45434), (268, 45428), (271, 45401), (281, 45356), (286, 45341), (288, 45335), (301, 45281), (303, 45272), (352, 45044), (358, 45008),

Gene: Hertubise\_52 Start: 46961, Stop: 45258, Start Num: 68

Candidate Starts for Hertubise\_52:

(Start: 68 @46961 has 66 MA's), (Start: 82 @46937 has 11 MA's), (Start: 87 @46880 has 1 MA's), (Start: 89 @46871 has 2 MA's), (104, 46781), (108, 46748), (119, 46691), (121, 46679), (123, 46655), (126, 46643), (127, 46634), (138, 46574), (147, 46484), (151, 46439), (158, 46379), (173, 46277), (176, 46256), (198, 46124), (208, 46055), (210, 46049), (212, 46022), (214, 46007), (219, 45965), (224, 45917), (227, 45887), (232, 45860), (266, 45734), (268, 45728), (271, 45701), (280, 45659), (281, 45656), (286, 45641), (288, 45635), (301, 45581), (303, 45572), (352, 45344), (358, 45308),

Gene: Hetaeria\_52 Start: 46978, Stop: 45275, Start Num: 68

Candidate Starts for Hetaeria\_52:

(13, 47311), (15, 47284), (Start: 68 @46978 has 66 MA's), (Start: 82 @46954 has 11 MA's), (Start: 87 @46897 has 1 MA's), (Start: 89 @46888 has 2 MA's), (104, 46798), (108, 46765), (119, 46708), (121, 46696), (123, 46672), (126, 46660), (127, 46651), (138, 46591), (147, 46501), (151, 46456), (158, 46396), (173, 46294), (176, 46273), (198, 46141), (208, 46072), (210, 46066), (212, 46039), (214, 46024), (219, 45982), (224, 45934), (227, 45904), (232, 45877), (266, 45751), (268, 45745), (271, 45718), (280, 45676), (281, 45673), (286, 45658), (288, 45652), (301, 45598), (303, 45589), (352, 45361), (358, 45325),

Gene: HighStump\_52 Start: 46881, Stop: 45085, Start Num: 38

Candidate Starts for HighStump\_52:

(Start: 38 @46881 has 111 MA's), (Start: 69 @46788 has 103 MA's), (Start: 82 @46764 has 11 MA's), (Start: 87 @46707 has 1 MA's), (Start: 89 @46698 has 2 MA's), (104, 46608), (108, 46575), (119, 46518), (121, 46506), (123, 46482), (126, 46470), (127, 46461), (138, 46401), (147, 46311), (151, 46266), (158, 46206), (167, 46152), (173, 46104), (176, 46083), (198, 45951), (208, 45882), (210, 45876), (212, 45849), (214, 45834), (219, 45792), (224, 45744), (227, 45714), (232, 45687), (266, 45561), (268, 45555), (271, 45528), (281, 45483), (286, 45468), (288, 45462), (301, 45408), (303, 45399), (352, 45171), (358, 45135),

Gene: Hocus\_51 Start: 46740, Stop: 44944, Start Num: 38

Candidate Starts for Hocus\_51:

(Start: 38 @46740 has 111 MA's), (Start: 69 @46647 has 103 MA's), (Start: 82 @46623 has 11 MA's), (Start: 87 @46566 has 1 MA's), (Start: 89 @46557 has 2 MA's), (104, 46467), (108, 46434), (119, 46377), (121, 46365), (123, 46341), (126, 46329), (127, 46320), (138, 46260), (147, 46170), (151, 46125), (158, 46065), (167, 46011), (173, 45963), (176, 45942), (198, 45810), (208, 45741), (210, 45735), (212, 45708), (214, 45693), (219, 45651), (224, 45603), (227, 45573), (232, 45546), (266, 45420), (268, 45414), (271, 45387), (281, 45342), (286, 45327), (288, 45321), (301, 45267), (303, 45258), (352, 45030), (358, 44994),

Gene: Holeinone\_51 Start: 46545, Stop: 44830, Start Num: 67

Candidate Starts for Holeinone\_51:

(10, 46974), (12, 46938), (14, 46866), (20, 46800), (Start: 67 @46545 has 49 MA's), (102, 46362), (Start: 103 @46359 has 1 MA's), (108, 46323), (109, 46311), (111, 46302), (119, 46266), (120, 46263), (123, 46230), (134, 46167), (147, 46059), (151, 46020), (163, 45939), (167, 45906), (169, 45897), (173, 45858), (176, 45837), (177, 45834), (183, 45792), (185, 45777), (186, 45762), (193, 45732), (198, 45705), (203, 45657), (209, 45633), (210, 45630), (212, 45603), (213, 45591), (215, 45585), (219, 45546), (224, 45498), (227, 45468), (228, 45462), (237, 45417), (251, 45342), (253, 45330), (261, 45303), (262, 45300), (265, 45285), (275, 45219), (286, 45186), (309, 45108), (318, 45078), (319, 45075), (322, 45063), (331, 45024), (344, 44946), (352, 44904), (366, 44838),

Gene: Horchata\_52 Start: 46953, Stop: 45250, Start Num: 68

Candidate Starts for Horchata\_52:

(Start: 68 @46953 has 66 MA's), (Start: 82 @46929 has 11 MA's), (Start: 87 @46872 has 1 MA's), (Start: 89 @46863 has 2 MA's), (104, 46773), (108, 46740), (119, 46683), (121, 46671), (123, 46647), (126, 46635), (127, 46626), (138, 46566), (147, 46476), (151, 46431), (158, 46371), (167, 46317), (173, 46269), (176, 46248), (198, 46116), (208, 46047), (210, 46041), (212, 46014), (214, 45999), (219, 45957), (224, 45909), (227, 45879), (232, 45852), (266, 45726), (268, 45720), (271, 45693), (281, 45648), (286, 45633), (288, 45627), (301, 45573), (303, 45564), (352, 45336), (358, 45300),

Gene: Hosp\_044 Start: 43731, Stop: 41992, Start Num: 69

Candidate Starts for Hosp\_044:

(50, 43812), (Start: 69 @43731 has 103 MA's), (106, 43530), (108, 43518), (122, 43431), (123, 43428), (127, 43407), (138, 43347), (145, 43278), (147, 43257), (148, 43236), (151, 43218), (153, 43206), (156, 43170), (163, 43137), (167, 43104), (169, 43095), (172, 43059), (173, 43056), (176, 43035), (196, 42915), (198, 42903), (207, 42840), (210, 42828), (212, 42801), (213, 42789), (219, 42744), (220, 42741), (224, 42696), (227, 42666), (237, 42615), (245, 42567), (249, 42537), (273, 42423), (275, 42405), (280, 42387), (285, 42375), (286, 42372), (288, 42366), (294, 42348), (295, 42345), (298, 42318), (308, 42273), (311, 42264), (322, 42222), (352, 42066),

Gene: Hydro\_47 Start: 47456, Stop: 45744, Start Num: 69

Candidate Starts for Hydro\_47:

(Start: 69 @47456 has 103 MA's), (102, 47273), (108, 47234), (111, 47213), (123, 47144), (138, 47063), (145, 46994), (147, 46973), (158, 46874), (163, 46853), (167, 46820), (169, 46811), (172, 46775), (173, 46772), (177, 46748), (194, 46637), (196, 46631), (198, 46619), (208, 46550), (210, 46544), (212, 46517), (213, 46505), (214, 46502), (219, 46460), (224, 46412), (227, 46382), (237, 46331), (251, 46283), (262, 46247), (265, 46232), (266, 46226), (267, 46223), (272, 46190), (273, 46184), (274, 46175), (280, 46148), (285, 46133), (286, 46130), (290, 46121), (295, 46103), (298, 46076), (303, 46055), (329, 45944), (352, 45821), (359, 45782),

Gene: ImtiyazSitla\_52 Start: 46729, Stop: 44933, Start Num: 38

Candidate Starts for ImtiyazSitla\_52:

(Start: 38 @46729 has 111 MA's), (Start: 69 @46636 has 103 MA's), (Start: 82 @46612 has 11 MA's), (Start: 87 @46555 has 1 MA's), (Start: 89 @46546 has 2 MA's), (104, 46456), (108, 46423), (119, 46366), (121, 46354), (123, 46330), (126, 46318), (127, 46309), (138, 46249), (147, 46159), (151, 46114), (158, 46054), (167, 46000), (173, 45952), (176, 45931), (198, 45799), (208, 45730), (210, 45724), (212, 45697), (214, 45682), (219, 45640), (224, 45592), (227, 45562), (232, 45535), (266, 45409), (268, 45403), (271, 45376), (281, 45331), (286, 45316), (288, 45310), (301, 45256), (303, 45247), (352, 45019), (358, 44983),

Gene: Imvubu\_47 Start: 45228, Stop: 43504, Start Num: 69

Candidate Starts for Imvubu\_47:

(63, 45246), (Start: 69 @45228 has 103 MA's), (91, 45126), (102, 45048), (Start: 103 @45045 has 1 MA's), (108, 45009), (115, 44976), (119, 44955), (123, 44919), (145, 44769), (147, 44748), (158, 44649), (163, 44628), (165, 44622), (167, 44595), (173, 44547), (177, 44523), (185, 44466), (194, 44412), (196, 44406), (198, 44394), (210, 44319), (212, 44292), (213, 44280), (214, 44277), (219, 44235), (220, 44232), (224, 44187), (227, 44157), (237, 44106), (248, 44064), (253, 44046), (261, 44019), (262, 44016), (266, 43995), (275, 43935), (280, 43917), (286, 43899), (322, 43737), (329, 43704), (332, 43695), (352, 43581),

Gene: Inchworm\_53 Start: 47167, Stop: 45371, Start Num: 38

Candidate Starts for Inchworm\_53:

(Start: 38 @47167 has 111 MA's), (Start: 69 @47074 has 103 MA's), (Start: 82 @47050 has 11 MA's), (Start: 87 @46993 has 1 MA's), (Start: 89 @46984 has 2 MA's), (104, 46894), (108, 46861), (119, 46804), (121, 46792), (123, 46768), (126, 46756), (127, 46747), (138, 46687), (147, 46597), (151, 46552), (158, 46492), (167, 46438), (173, 46390), (176, 46369), (198, 46237), (208, 46168), (210,

46162), (212, 46135), (214, 46120), (219, 46078), (224, 46030), (227, 46000), (232, 45973), (266, 45847), (268, 45841), (271, 45814), (281, 45769), (286, 45754), (288, 45748), (301, 45694), (303, 45685), (352, 45457), (358, 45421),

Gene: Indlovu\_51 Start: 47709, Stop: 46000, Start Num: 69

Candidate Starts for Indlovu\_51:

(Start: 69 @47709 has 103 MA's), (92, 47604), (Start: 103 @47526 has 1 MA's), (108, 47490), (116, 47451), (119, 47433), (123, 47397), (126, 47385), (145, 47247), (147, 47226), (148, 47205), (154, 47157), (167, 47073), (172, 47028), (173, 47025), (176, 47004), (177, 47001), (196, 46884), (207, 46809), (210, 46797), (212, 46770), (213, 46758), (214, 46755), (219, 46713), (224, 46665), (227, 46635), (233, 46599), (263, 46509), (265, 46500), (266, 46494), (267, 46491), (275, 46434), (280, 46416), (286, 46398), (297, 46341), (332, 46191), (352, 46077), (362, 46026),

Gene: Inverness\_52 Start: 46962, Stop: 45259, Start Num: 68

Candidate Starts for Inverness\_52:

(Start: 68 @46962 has 66 MA's), (Start: 82 @46938 has 11 MA's), (Start: 87 @46881 has 1 MA's), (Start: 89 @46872 has 2 MA's), (104, 46782), (108, 46749), (119, 46692), (121, 46680), (123, 46656), (126, 46644), (127, 46635), (138, 46575), (147, 46485), (151, 46440), (158, 46380), (167, 46326), (173, 46278), (176, 46257), (198, 46125), (208, 46056), (210, 46050), (212, 46023), (214, 46008), (219, 45966), (224, 45918), (227, 45888), (232, 45861), (266, 45735), (268, 45729), (271, 45702), (280, 45660), (281, 45657), (286, 45642), (288, 45636), (301, 45582), (303, 45573), (352, 45345), (358, 45309),

Gene: InvictusManeo\_62 Start: 44067, Stop: 45779, Start Num: 77

Candidate Starts for InvictusManeo\_62:

(Start: 77 @44067 has 31 MA's), (92, 44160), (96, 44202), (Start: 103 @44238 has 1 MA's), (104, 44241), (107, 44265), (108, 44274), (116, 44313), (119, 44331), (127, 44388), (131, 44415), (132, 44418), (140, 44481), (147, 44541), (150, 44571), (151, 44580), (161, 44655), (162, 44658), (169, 44703), (171, 44730), (172, 44739), (173, 44742), (181, 44808), (182, 44811), (183, 44814), (185, 44829), (186, 44844), (196, 44889), (198, 44901), (211, 44979), (212, 45003), (213, 45015), (214, 45018), (215, 45021), (217, 45042), (219, 45060), (224, 45108), (230, 45147), (233, 45168), (253, 45252), (265, 45294), (270, 45318), (275, 45363), (276, 45366), (286, 45399), (300, 45423), (320, 45477), (322, 45483), (327, 45507), (352, 45624), (361, 45666), (364, 45690),

Gene: Iridoclysis\_52 Start: 47026, Stop: 45230, Start Num: 38

Candidate Starts for Iridoclysis\_52:

(Start: 38 @47026 has 111 MA's), (Start: 69 @46933 has 103 MA's), (Start: 82 @46909 has 11 MA's), (Start: 87 @46852 has 1 MA's), (Start: 89 @46843 has 2 MA's), (104, 46753), (108, 46720), (119, 46663), (121, 46651), (123, 46627), (126, 46615), (127, 46606), (138, 46546), (147, 46456), (151, 46411), (158, 46351), (167, 46297), (173, 46249), (176, 46228), (198, 46096), (208, 46027), (210, 46021), (212, 45994), (214, 45979), (219, 45937), (224, 45889), (227, 45859), (232, 45832), (266, 45706), (268, 45700), (271, 45673), (281, 45628), (286, 45613), (288, 45607), (301, 45553), (303, 45544), (352, 45316), (358, 45280),

Gene: IsaacEli\_53 Start: 47185, Stop: 45389, Start Num: 38

Candidate Starts for IsaacEli\_53:

(Start: 38 @47185 has 111 MA's), (Start: 69 @47092 has 103 MA's), (Start: 82 @47068 has 11 MA's), (Start: 87 @47011 has 1 MA's), (Start: 89 @47002 has 2 MA's), (104, 46912), (108, 46879), (119, 46822), (121, 46810), (123, 46786), (126, 46774), (127, 46765), (138, 46705), (147, 46615), (151, 46570), (158, 46510), (173, 46408), (176, 46387), (198, 46255), (208, 46186), (210, 46180), (212, 46153), (214, 46138), (219, 46096), (224, 46048), (227, 46018), (232, 45991), (266, 45865), (268, 45859), (271, 45832), (281, 45787), (286, 45772), (288, 45766), (301, 45712), (303, 45703), (352, 45475), (358, 45439),

Gene: ItsyBitsy1\_51 Start: 46562, Stop: 44847, Start Num: 67

Candidate Starts for ItsyBitsy1\_51:

(Start: 67 @46562 has 49 MA's), (102, 46379), (Start: 103 @46376 has 1 MA's), (108, 46340), (109, 46328), (111, 46319), (119, 46283), (120, 46280), (123, 46247), (127, 46226), (134, 46184), (147, 46076), (151, 46037), (163, 45956), (167, 45923), (169, 45914), (173, 45875), (176, 45854), (177, 45851), (183, 45809), (185, 45794), (186, 45779), (193, 45749), (198, 45722), (203, 45674), (209, 45650), (210, 45647), (212, 45620), (213, 45608), (215, 45602), (219, 45563), (224, 45515), (227, 45485), (228, 45479), (237, 45434), (251, 45359), (253, 45347), (261, 45320), (262, 45317), (265, 45302), (275, 45236), (286, 45203), (309, 45125), (318, 45095), (319, 45092), (322, 45080), (331, 45041), (352, 44921), (366, 44855),

Gene: JAMaL\_47 Start: 47593, Stop: 45878, Start Num: 69

Candidate Starts for JAMaL\_47:

(Start: 69 @47593 has 103 MA's), (105, 47401), (108, 47371), (111, 47350), (119, 47314), (123, 47278), (125, 47269), (127, 47257), (145, 47128), (147, 47107), (148, 47086), (158, 47008), (163, 46987), (167, 46954), (169, 46945), (172, 46909), (173, 46906), (177, 46882), (196, 46765), (198, 46753), (202, 46729), (208, 46684), (210, 46678), (212, 46651), (213, 46639), (214, 46636), (219, 46594), (224, 46546), (227, 46516), (237, 46465), (251, 46417), (262, 46381), (266, 46360), (267, 46357), (273, 46318), (280, 46282), (285, 46267), (286, 46264), (290, 46255), (295, 46237), (298, 46210), (303, 46189), (329, 46078), (338, 46045), (352, 45955), (359, 45916),

Gene: JDog\_51 Start: 46760, Stop: 44964, Start Num: 38

Candidate Starts for JDog\_51:

(Start: 38 @46760 has 111 MA's), (Start: 69 @46667 has 103 MA's), (Start: 82 @46643 has 11 MA's), (Start: 87 @46586 has 1 MA's), (Start: 89 @46577 has 2 MA's), (104, 46487), (108, 46454), (119, 46397), (121, 46385), (123, 46361), (126, 46349), (127, 46340), (138, 46280), (147, 46190), (151, 46145), (158, 46085), (167, 46031), (173, 45983), (176, 45962), (198, 45830), (208, 45761), (210, 45755), (212, 45728), (214, 45713), (219, 45671), (224, 45623), (227, 45593), (232, 45566), (266, 45440), (268, 45434), (271, 45407), (281, 45362), (286, 45347), (288, 45341), (301, 45287), (303, 45278), (352, 45050), (358, 45014),

Gene: JacAttac\_53 Start: 47167, Stop: 45371, Start Num: 38

Candidate Starts for JacAttac\_53:

(Start: 38 @47167 has 111 MA's), (Start: 69 @47074 has 103 MA's), (Start: 82 @47050 has 11 MA's), (Start: 87 @46993 has 1 MA's), (Start: 89 @46984 has 2 MA's), (104, 46894), (108, 46861), (119, 46804), (121, 46792), (123, 46768), (126, 46756), (127, 46747), (138, 46687), (147, 46597), (151, 46552), (158, 46492), (167, 46438), (173, 46390), (176, 46369), (198, 46237), (208, 46168), (210, 46162), (212, 46135), (214, 46120), (219, 46078), (224, 46030), (227, 46000), (232, 45973), (266, 45847), (268, 45841), (271, 45814), (280, 45772), (281, 45769), (286, 45754), (288, 45748), (301, 45694), (303, 45685), (352, 45457), (358, 45421),

Gene: Jackstina\_48 Start: 47078, Stop: 45381, Start Num: 64

Candidate Starts for Jackstina\_48:

(Start: 64 @47078 has 34 MA's), (Start: 103 @46880 has 1 MA's), (108, 46844), (119, 46787), (127, 46730), (134, 46688), (136, 46682), (141, 46625), (146, 46598), (147, 46580), (158, 46475), (171, 46385), (173, 46373), (176, 46352), (183, 46307), (193, 46244), (205, 46160), (209, 46145), (210, 46142), (211, 46139), (212, 46115), (215, 46097), (219, 46058), (224, 46010), (227, 45980), (231, 45956), (238, 45914), (264, 45836), (270, 45809), (277, 45758), (286, 45734), (301, 45686), (312, 45647), (325, 45605), (344, 45500), (352, 45458), (353, 45443),

Gene: JaguarMi\_49 Start: 48522, Stop: 46810, Start Num: 69

Candidate Starts for JaguarMi\_49:



(Start: 69 @48522 has 103 MA's), (102, 48339), (108, 48300), (111, 48279), (123, 48210), (145, 48060), (147, 48039), (158, 47940), (163, 47919), (167, 47886), (169, 47877), (173, 47838), (176, 47817), (177, 47814), (180, 47799), (194, 47703), (196, 47697), (198, 47685), (208, 47616), (210, 47610), (212, 47583), (213, 47571), (214, 47568), (219, 47526), (224, 47478), (227, 47448), (237, 47397), (262, 47313), (265, 47298), (266, 47292), (272, 47256), (273, 47250), (280, 47214), (285, 47199), (286, 47196), (290, 47187), (295, 47169), (298, 47142), (303, 47121), (329, 47010), (338, 46977), (352, 46887), (359, 46848),

Gene: JakeO\_51 Start: 46666, Stop: 44963, Start Num: 69

Candidate Starts for JakeO\_51:

(Start: 38 @46759 has 111 MA's), (Start: 69 @46666 has 103 MA's), (Start: 82 @46642 has 11 MA's), (Start: 87 @46585 has 1 MA's), (Start: 89 @46576 has 2 MA's), (104, 46486), (108, 46453), (119, 46396), (121, 46384), (123, 46360), (126, 46348), (127, 46339), (138, 46279), (147, 46189), (151, 46144), (158, 46084), (167, 46030), (173, 45982), (176, 45961), (198, 45829), (208, 45760), (210, 45754), (212, 45727), (214, 45712), (219, 45670), (224, 45622), (227, 45592), (232, 45565), (266, 45439), (268, 45433), (271, 45406), (281, 45361), (286, 45346), (288, 45340), (301, 45286), (303, 45277), (352, 45049), (358, 45013),

Gene: JangoPhett\_52 Start: 47037, Stop: 45241, Start Num: 38

Candidate Starts for JangoPhett\_52:

(Start: 38 @47037 has 111 MA's), (Start: 69 @46944 has 103 MA's), (Start: 82 @46920 has 11 MA's), (Start: 87 @46863 has 1 MA's), (Start: 89 @46854 has 2 MA's), (104, 46764), (108, 46731), (119, 46674), (121, 46662), (123, 46638), (126, 46626), (127, 46617), (138, 46557), (147, 46467), (151, 46422), (158, 46362), (167, 46308), (173, 46260), (176, 46239), (198, 46107), (208, 46038), (210, 46032), (212, 46005), (214, 45990), (219, 45948), (224, 45900), (227, 45870), (232, 45843), (266, 45717), (268, 45711), (271, 45684), (281, 45639), (286, 45624), (288, 45618), (301, 45564), (303, 45555), (352, 45327), (358, 45291),

Gene: Jillium\_51 Start: 46663, Stop: 44960, Start Num: 69

Candidate Starts for Jillium\_51:

(Start: 38 @46756 has 111 MA's), (Start: 69 @46663 has 103 MA's), (Start: 82 @46639 has 11 MA's), (Start: 87 @46582 has 1 MA's), (Start: 89 @46573 has 2 MA's), (104, 46483), (108, 46450), (119, 46393), (121, 46381), (123, 46357), (126, 46345), (127, 46336), (138, 46276), (147, 46186), (151, 46141), (158, 46081), (173, 45979), (176, 45958), (198, 45826), (208, 45757), (210, 45751), (212, 45724), (214, 45709), (219, 45667), (224, 45619), (227, 45589), (232, 45562), (266, 45436), (268, 45430), (271, 45403), (280, 45361), (281, 45358), (286, 45343), (288, 45337), (301, 45283), (303, 45274), (352, 45046), (358, 45010),

Gene: Jiminy\_51 Start: 46501, Stop: 44798, Start Num: 69

Candidate Starts for Jiminy\_51:

(Start: 38 @46594 has 111 MA's), (Start: 69 @46501 has 103 MA's), (Start: 82 @46477 has 11 MA's), (Start: 87 @46420 has 1 MA's), (Start: 89 @46411 has 2 MA's), (104, 46321), (108, 46288), (119, 46231), (121, 46219), (123, 46195), (126, 46183), (127, 46174), (138, 46114), (147, 46024), (151, 45979), (158, 45919), (167, 45865), (173, 45817), (176, 45796), (198, 45664), (208, 45595), (210, 45589), (212, 45562), (214, 45547), (219, 45505), (224, 45457), (227, 45427), (232, 45400), (266, 45274), (268, 45268), (271, 45241), (281, 45196), (286, 45181), (288, 45175), (301, 45121), (303, 45112), (352, 44884), (358, 44848),

Gene: Jiraiya\_54 Start: 46630, Stop: 44951, Start Num: 82

Candidate Starts for Jiraiya\_54:

(Start: 38 @46747 has 111 MA's), (Start: 69 @46654 has 103 MA's), (Start: 82 @46630 has 11 MA's), (Start: 87 @46573 has 1 MA's), (Start: 89 @46564 has 2 MA's), (104, 46474), (108, 46441), (119, 46384), (121, 46372), (123, 46348), (126, 46336), (127, 46327), (138, 46267), (147, 46177), (151,

46132), (158, 46072), (167, 46018), (173, 45970), (176, 45949), (198, 45817), (208, 45748), (210, 45742), (212, 45715), (214, 45700), (219, 45658), (224, 45610), (227, 45580), (232, 45553), (266, 45427), (268, 45421), (271, 45394), (281, 45349), (286, 45334), (288, 45328), (301, 45274), (303, 45265), (352, 45037), (358, 45001),

Gene: Jolie1\_046 Start: 45511, Stop: 43766, Start Num: 69

Candidate Starts for Jolie1\_046:

(45, 45613), (Start: 69 @45511 has 103 MA's), (108, 45292), (122, 45205), (123, 45202), (127, 45181), (145, 45052), (147, 45031), (148, 45010), (151, 44992), (153, 44980), (156, 44944), (163, 44911), (167, 44878), (169, 44869), (172, 44833), (173, 44830), (176, 44809), (196, 44689), (198, 44677), (202, 44653), (207, 44614), (210, 44602), (212, 44575), (213, 44563), (219, 44518), (220, 44515), (224, 44470), (227, 44440), (237, 44389), (245, 44341), (262, 44260), (267, 44236), (273, 44197), (275, 44179), (280, 44161), (285, 44149), (294, 44122), (295, 44119), (298, 44092), (308, 44047), (311, 44038), (322, 43996), (352, 43840),

Gene: KLucky39\_52 Start: 46960, Stop: 45257, Start Num: 68

Candidate Starts for KLucky39\_52:

(13, 47293), (15, 47266), (Start: 68 @46960 has 66 MA's), (Start: 82 @46936 has 11 MA's), (Start: 87 @46879 has 1 MA's), (Start: 89 @46870 has 2 MA's), (104, 46780), (108, 46747), (119, 46690), (121, 46678), (123, 46654), (126, 46642), (127, 46633), (138, 46573), (147, 46483), (151, 46438), (173, 46276), (176, 46255), (198, 46123), (208, 46054), (210, 46048), (212, 46021), (214, 46006), (219, 45964), (224, 45916), (227, 45886), (232, 45859), (266, 45733), (268, 45727), (271, 45700), (281, 45655), (286, 45640), (288, 45634), (301, 45580), (303, 45571), (352, 45343), (358, 45307),

Gene: Kahve\_51 Start: 46751, Stop: 44955, Start Num: 38

Candidate Starts for Kahve\_51:

(Start: 38 @46751 has 111 MA's), (Start: 69 @46658 has 103 MA's), (Start: 82 @46634 has 11 MA's), (Start: 87 @46577 has 1 MA's), (Start: 89 @46568 has 2 MA's), (104, 46478), (108, 46445), (119, 46388), (121, 46376), (123, 46352), (126, 46340), (127, 46331), (138, 46271), (147, 46181), (151, 46136), (158, 46076), (167, 46022), (173, 45974), (176, 45953), (198, 45821), (208, 45752), (210, 45746), (212, 45719), (214, 45704), (219, 45662), (224, 45614), (227, 45584), (232, 45557), (266, 45431), (268, 45425), (271, 45398), (281, 45353), (286, 45338), (288, 45332), (301, 45278), (303, 45269), (352, 45041), (358, 45005),

Gene: Kailash\_52 Start: 47113, Stop: 45317, Start Num: 38

Candidate Starts for Kailash\_52:

(Start: 38 @47113 has 111 MA's), (Start: 69 @47020 has 103 MA's), (Start: 82 @46996 has 11 MA's), (Start: 87 @46939 has 1 MA's), (Start: 89 @46930 has 2 MA's), (104, 46840), (108, 46807), (119, 46750), (121, 46738), (123, 46714), (126, 46702), (127, 46693), (138, 46633), (147, 46543), (151, 46498), (158, 46438), (167, 46384), (173, 46336), (176, 46315), (198, 46183), (208, 46114), (210, 46108), (212, 46081), (214, 46066), (219, 46024), (224, 45976), (227, 45946), (232, 45919), (266, 45793), (268, 45787), (271, 45760), (281, 45715), (286, 45700), (288, 45694), (301, 45640), (303, 45631), (352, 45403), (358, 45367),

Gene: Kaleb\_51 Start: 46709, Stop: 44994, Start Num: 67

Candidate Starts for Kaleb\_51:

(10, 47138), (12, 47102), (14, 47030), (16, 47015), (20, 46964), (Start: 67 @46709 has 49 MA's), (75, 46697), (102, 46526), (Start: 103 @46523 has 1 MA's), (108, 46487), (109, 46475), (111, 46466), (119, 46430), (120, 46427), (123, 46394), (134, 46331), (147, 46223), (151, 46184), (163, 46103), (167, 46070), (169, 46061), (173, 46022), (176, 46001), (177, 45998), (183, 45956), (185, 45941), (186, 45926), (193, 45896), (198, 45869), (203, 45821), (209, 45797), (210, 45794), (212, 45767), (213, 45755), (215, 45749), (219, 45710), (224, 45662), (227, 45632), (228, 45626), (237, 45581), (251, 45506), (253, 45494), (261, 45467), (262, 45464), (265, 45449), (275, 45383), (286, 45350),

(309, 45272), (318, 45242), (319, 45239), (322, 45227), (331, 45188), (344, 45110), (345, 45107), (352, 45068), (366, 45002),

Gene: Kamiyu\_52 Start: 47228, Stop: 45429, Start Num: 43

Candidate Starts for Kamiyu\_52:

(17, 47414), (19, 47393), (25, 47318), (Start: 43 @47228 has 7 MA's), (51, 47204), (Start: 54 @47198 has 3 MA's), (55, 47195), (Start: 64 @47126 has 34 MA's), (Start: 103 @46928 has 1 MA's), (108, 46892), (119, 46835), (127, 46778), (134, 46736), (136, 46730), (141, 46673), (146, 46646), (147, 46628), (158, 46523), (171, 46433), (173, 46421), (176, 46400), (183, 46355), (193, 46292), (205, 46208), (209, 46193), (210, 46190), (211, 46187), (212, 46163), (215, 46145), (219, 46106), (224, 46058), (227, 46028), (231, 46004), (238, 45962), (264, 45884), (270, 45857), (277, 45806), (286, 45782), (312, 45695), (325, 45653), (344, 45548), (347, 45533), (352, 45506), (353, 45491),

Gene: KarasumaRum\_52 Start: 47981, Stop: 46287, Start Num: 70

Candidate Starts for KarasumaRum\_52:

(Start: 70 @47981 has 10 MA's), (Start: 82 @47954 has 11 MA's), (91, 47882), (108, 47765), (123, 47675), (126, 47663), (134, 47612), (138, 47594), (145, 47525), (147, 47504), (157, 47408), (163, 47384), (167, 47351), (173, 47303), (176, 47282), (196, 47162), (202, 47126), (207, 47087), (208, 47081), (210, 47075), (212, 47048), (213, 47036), (214, 47033), (219, 46991), (224, 46943), (227, 46913), (259, 46790), (266, 46757), (267, 46754), (272, 46721), (273, 46715), (275, 46697), (280, 46679), (286, 46661), (337, 46460), (352, 46364),

Gene: Katniss\_53 Start: 47077, Stop: 45398, Start Num: 82

Candidate Starts for Katniss\_53:

(Start: 38 @47194 has 111 MA's), (Start: 69 @47101 has 103 MA's), (Start: 82 @47077 has 11 MA's), (Start: 87 @47020 has 1 MA's), (Start: 89 @47011 has 2 MA's), (104, 46921), (108, 46888), (119, 46831), (121, 46819), (123, 46795), (126, 46783), (127, 46774), (138, 46714), (147, 46624), (151, 46579), (158, 46519), (173, 46417), (176, 46396), (198, 46264), (208, 46195), (210, 46189), (212, 46162), (214, 46147), (219, 46105), (224, 46057), (227, 46027), (232, 46000), (266, 45874), (268, 45868), (271, 45841), (280, 45799), (281, 45796), (286, 45781), (288, 45775), (301, 45721), (303, 45712), (352, 45484), (358, 45448),

Gene: KayaCho\_45 Start: 45298, Stop: 43550, Start Num: 69

Candidate Starts for KayaCho\_45:

(Start: 69 @45298 has 103 MA's), (91, 45196), (95, 45163), (108, 45079), (123, 44986), (127, 44965), (145, 44836), (147, 44815), (148, 44794), (156, 44728), (163, 44695), (169, 44653), (172, 44617), (173, 44614), (176, 44593), (185, 44533), (196, 44473), (198, 44461), (202, 44437), (207, 44398), (210, 44386), (212, 44359), (213, 44347), (219, 44302), (220, 44299), (224, 44254), (227, 44224), (237, 44173), (245, 44125), (267, 44020), (273, 43981), (275, 43963), (280, 43945), (285, 43933), (286, 43930), (295, 43903), (298, 43876), (308, 43831), (311, 43822), (332, 43738), (352, 43624),

Gene: Keitherie\_52 Start: 47001, Stop: 45298, Start Num: 69

Candidate Starts for Keitherie\_52:

(Start: 38 @47094 has 111 MA's), (Start: 69 @47001 has 103 MA's), (Start: 82 @46977 has 11 MA's), (Start: 87 @46920 has 1 MA's), (Start: 89 @46911 has 2 MA's), (104, 46821), (108, 46788), (119, 46731), (121, 46719), (123, 46695), (126, 46683), (127, 46674), (138, 46614), (147, 46524), (151, 46479), (158, 46419), (167, 46365), (173, 46317), (176, 46296), (198, 46164), (208, 46095), (210, 46089), (212, 46062), (214, 46047), (219, 46005), (224, 45957), (227, 45927), (232, 45900), (266, 45774), (268, 45768), (271, 45741), (281, 45696), (286, 45681), (288, 45675), (301, 45621), (303, 45612), (352, 45384), (358, 45348),

Gene: Kheth\_51 Start: 46598, Stop: 44883, Start Num: 67

Candidate Starts for Kheth\_51:

(10, 47027), (12, 46991), (14, 46919), (20, 46853), (Start: 67 @46598 has 49 MA's), (75, 46586), (102, 46415), (Start: 103 @46412 has 1 MA's), (108, 46376), (109, 46364), (111, 46355), (119, 46319), (120, 46316), (123, 46283), (134, 46220), (147, 46112), (151, 46073), (163, 45992), (167, 45959), (169, 45950), (173, 45911), (176, 45890), (177, 45887), (183, 45845), (185, 45830), (186, 45815), (193, 45785), (198, 45758), (203, 45710), (209, 45686), (210, 45683), (212, 45656), (213, 45644), (215, 45638), (219, 45599), (224, 45551), (227, 45521), (228, 45515), (237, 45470), (251, 45395), (253, 45383), (261, 45356), (262, 45353), (265, 45338), (275, 45272), (286, 45239), (309, 45161), (318, 45131), (319, 45128), (322, 45116), (331, 45077), (344, 44999), (352, 44957), (366, 44891),

Gene: Kikipoo\_53 Start: 47185, Stop: 45389, Start Num: 38

Candidate Starts for Kikipoo\_53:

(Start: 38 @47185 has 111 MA's), (Start: 69 @47092 has 103 MA's), (Start: 82 @47068 has 11 MA's), (Start: 87 @47011 has 1 MA's), (Start: 89 @47002 has 2 MA's), (104, 46912), (108, 46879), (119, 46822), (121, 46810), (123, 46786), (126, 46774), (127, 46765), (138, 46705), (147, 46615), (151, 46570), (158, 46510), (173, 46408), (176, 46387), (198, 46255), (208, 46186), (210, 46180), (212, 46153), (214, 46138), (219, 46096), (224, 46048), (227, 46018), (232, 45991), (266, 45865), (268, 45859), (271, 45832), (281, 45787), (286, 45772), (288, 45766), (301, 45712), (303, 45703), (352, 45475), (358, 45439),

Gene: Kimbrough\_52 Start: 46665, Stop: 44962, Start Num: 69

Candidate Starts for Kimbrough\_52:

(23, 46848), (24, 46842), (Start: 69 @46665 has 103 MA's), (Start: 82 @46641 has 11 MA's), (Start: 87 @46584 has 1 MA's), (Start: 89 @46575 has 2 MA's), (104, 46485), (108, 46452), (119, 46395), (121, 46383), (123, 46359), (126, 46347), (127, 46338), (138, 46278), (147, 46188), (151, 46143), (158, 46083), (167, 46029), (173, 45981), (176, 45960), (198, 45828), (208, 45759), (210, 45753), (212, 45726), (214, 45711), (219, 45669), (224, 45621), (227, 45591), (232, 45564), (266, 45438), (268, 45432), (271, 45405), (281, 45360), (286, 45345), (288, 45339), (301, 45285), (303, 45276), (352, 45048), (358, 45012),

Gene: KingTut\_43 Start: 42421, Stop: 40625, Start Num: 38

Candidate Starts for KingTut\_43:

(Start: 38 @42421 has 111 MA's), (Start: 69 @42328 has 103 MA's), (Start: 82 @42304 has 11 MA's), (Start: 87 @42247 has 1 MA's), (Start: 89 @42238 has 2 MA's), (104, 42148), (108, 42115), (119, 42058), (121, 42046), (123, 42022), (126, 42010), (127, 42001), (138, 41941), (147, 41851), (151, 41806), (158, 41746), (167, 41692), (173, 41644), (176, 41623), (198, 41491), (208, 41422), (210, 41416), (212, 41389), (214, 41374), (219, 41332), (224, 41284), (227, 41254), (232, 41227), (266, 41101), (268, 41095), (271, 41068), (281, 41023), (286, 41008), (288, 41002), (301, 40948), (303, 40939), (352, 40711), (358, 40675),

Gene: KingVeVeVe\_52 Start: 46936, Stop: 45233, Start Num: 68

Candidate Starts for KingVeVeVe\_52:

(Start: 68 @46936 has 66 MA's), (Start: 82 @46912 has 11 MA's), (Start: 87 @46855 has 1 MA's), (Start: 89 @46846 has 2 MA's), (104, 46756), (108, 46723), (119, 46666), (121, 46654), (123, 46630), (126, 46618), (127, 46609), (138, 46549), (147, 46459), (151, 46414), (158, 46354), (173, 46252), (176, 46231), (198, 46099), (208, 46030), (210, 46024), (212, 45997), (214, 45982), (219, 45940), (224, 45892), (227, 45862), (232, 45835), (266, 45709), (268, 45703), (271, 45676), (281, 45631), (286, 45616), (288, 45610), (301, 45556), (303, 45547), (352, 45319), (358, 45283),

Gene: KlimbOn\_52 Start: 46954, Stop: 45251, Start Num: 68

Candidate Starts for KlimbOn\_52:

(Start: 68 @46954 has 66 MA's), (Start: 82 @46930 has 11 MA's), (Start: 87 @46873 has 1 MA's), (Start: 89 @46864 has 2 MA's), (104, 46774), (108, 46741), (119, 46684), (121, 46672), (123, 46648), (126, 46636), (127, 46627), (138, 46567), (147, 46477), (151, 46432), (158, 46372), (167, 46318),

(173, 46270), (176, 46249), (198, 46117), (208, 46048), (210, 46042), (212, 46015), (214, 46000), (219, 45958), (224, 45910), (227, 45880), (232, 45853), (266, 45727), (268, 45721), (271, 45694), (280, 45652), (281, 45649), (286, 45634), (288, 45628), (301, 45574), (303, 45565), (352, 45337), (358, 45301),

Gene: Kloppinator\_53 Start: 47367, Stop: 45664, Start Num: 68

Candidate Starts for Kloppinator\_53:

(Start: 68 @47367 has 66 MA's), (Start: 82 @47343 has 11 MA's), (Start: 87 @47286 has 1 MA's), (Start: 89 @47277 has 2 MA's), (104, 47187), (108, 47154), (119, 47097), (121, 47085), (123, 47061), (126, 47049), (127, 47040), (138, 46980), (147, 46890), (151, 46845), (158, 46785), (167, 46731), (173, 46683), (176, 46662), (198, 46530), (208, 46461), (210, 46455), (212, 46428), (214, 46413), (219, 46371), (224, 46323), (227, 46293), (232, 46266), (266, 46140), (268, 46134), (271, 46107), (280, 46065), (281, 46062), (286, 46047), (288, 46041), (301, 45987), (303, 45978), (352, 45750), (358, 45714),

Gene: Klocker\_54 Start: 49679, Stop: 47895, Start Num: 49

Candidate Starts for Klocker\_54:

(Start: 49 @49679 has 1 MA's), (Start: 69 @49610 has 103 MA's), (92, 49505), (99, 49445), (108, 49391), (115, 49358), (119, 49337), (123, 49301), (126, 49289), (127, 49280), (131, 49253), (141, 49175), (145, 49151), (147, 49130), (156, 49043), (167, 48977), (169, 48968), (171, 48941), (172, 48932), (173, 48929), (177, 48905), (180, 48890), (183, 48863), (196, 48788), (198, 48776), (208, 48707), (210, 48701), (212, 48674), (213, 48662), (219, 48617), (221, 48602), (227, 48539), (229, 48530), (237, 48488), (238, 48473), (241, 48467), (246, 48455), (251, 48440), (261, 48410), (262, 48407), (265, 48392), (266, 48386), (267, 48383), (273, 48344), (275, 48326), (280, 48308), (286, 48290), (307, 48179), (329, 48095), (332, 48086), (337, 48068), (352, 47972), (361, 47930), (365, 47909),

Gene: Kratio\_62 Start: 43803, Stop: 45518, Start Num: 77

Candidate Starts for Kratio\_62:

(Start: 77 @43803 has 31 MA's), (92, 43896), (96, 43938), (Start: 103 @43974 has 1 MA's), (104, 43977), (107, 44001), (108, 44010), (116, 44049), (119, 44067), (127, 44124), (131, 44151), (132, 44154), (140, 44217), (147, 44277), (150, 44307), (151, 44316), (161, 44391), (162, 44394), (171, 44466), (172, 44475), (173, 44478), (181, 44544), (182, 44547), (183, 44550), (185, 44565), (186, 44580), (189, 44595), (196, 44625), (198, 44637), (212, 44739), (213, 44751), (214, 44754), (215, 44757), (217, 44778), (219, 44796), (224, 44844), (229, 44877), (233, 44904), (265, 45033), (270, 45057), (275, 45102), (276, 45105), (286, 45138), (300, 45162), (320, 45216), (322, 45222), (327, 45246), (352, 45363), (361, 45405), (364, 45429),

Gene: Kronus\_52 Start: 48200, Stop: 46503, Start Num: 64

Candidate Starts for Kronus\_52:

(Start: 64 @48200 has 34 MA's), (Start: 103 @48002 has 1 MA's), (108, 47966), (119, 47909), (127, 47852), (134, 47810), (136, 47804), (141, 47747), (146, 47720), (147, 47702), (158, 47597), (171, 47507), (173, 47495), (176, 47474), (183, 47429), (193, 47366), (205, 47282), (209, 47267), (210, 47264), (211, 47261), (212, 47237), (215, 47219), (219, 47180), (224, 47132), (227, 47102), (231, 47078), (238, 47036), (264, 46958), (270, 46931), (277, 46880), (286, 46856), (312, 46769), (325, 46727), (344, 46622), (352, 46580), (353, 46565),

Gene: Kwadwo\_51 Start: 46640, Stop: 44937, Start Num: 69

Candidate Starts for Kwadwo\_51:

(Start: 69 @46640 has 103 MA's), (Start: 82 @46616 has 11 MA's), (Start: 87 @46559 has 1 MA's), (Start: 89 @46550 has 2 MA's), (104, 46460), (108, 46427), (119, 46370), (121, 46358), (123, 46334), (126, 46322), (127, 46313), (138, 46253), (147, 46163), (151, 46118), (158, 46058), (167, 46004), (173, 45956), (176, 45935), (198, 45803), (208, 45734), (210, 45728), (212, 45701), (214, 45686),

(219, 45644), (224, 45596), (227, 45566), (232, 45539), (266, 45413), (268, 45407), (271, 45380), (280, 45338), (281, 45335), (286, 45320), (288, 45314), (301, 45260), (303, 45251), (352, 45023), (358, 44987),

Gene: Kwksand96\_51 Start: 46608, Stop: 44812, Start Num: 38

Candidate Starts for Kwksand96\_51:

(Start: 38 @46608 has 111 MA's), (Start: 69 @46515 has 103 MA's), (Start: 82 @46491 has 11 MA's), (Start: 87 @46434 has 1 MA's), (Start: 89 @46425 has 2 MA's), (104, 46335), (108, 46302), (119, 46245), (121, 46233), (123, 46209), (126, 46197), (127, 46188), (138, 46128), (147, 46038), (151, 45993), (158, 45933), (167, 45879), (173, 45831), (176, 45810), (198, 45678), (208, 45609), (210, 45603), (212, 45576), (214, 45561), (219, 45519), (224, 45471), (227, 45441), (232, 45414), (266, 45288), (268, 45282), (271, 45255), (281, 45210), (286, 45195), (288, 45189), (301, 45135), (303, 45126), (352, 44898), (358, 44862),

Gene: Labeouficaum\_51 Start: 46603, Stop: 44807, Start Num: 38

Candidate Starts for Labeouficaum\_51:

(Start: 38 @46603 has 111 MA's), (Start: 69 @46510 has 103 MA's), (Start: 82 @46486 has 11 MA's), (Start: 87 @46429 has 1 MA's), (Start: 89 @46420 has 2 MA's), (104, 46330), (108, 46297), (119, 46240), (121, 46228), (123, 46204), (126, 46192), (127, 46183), (138, 46123), (147, 46033), (151, 45988), (158, 45928), (167, 45874), (173, 45826), (176, 45805), (198, 45673), (208, 45604), (210, 45598), (212, 45571), (214, 45556), (219, 45514), (224, 45466), (227, 45436), (232, 45409), (266, 45283), (268, 45277), (271, 45250), (281, 45205), (286, 45190), (288, 45184), (301, 45130), (303, 45121), (352, 44893), (358, 44857),

Gene: Lambano\_46 Start: 46399, Stop: 44684, Start Num: 69

Candidate Starts for Lambano\_46:

(Start: 69 @46399 has 103 MA's), (105, 46207), (108, 46177), (111, 46156), (119, 46120), (123, 46084), (125, 46075), (145, 45934), (147, 45913), (148, 45892), (158, 45814), (163, 45793), (167, 45760), (169, 45751), (172, 45715), (173, 45712), (177, 45688), (196, 45571), (198, 45559), (202, 45535), (208, 45490), (210, 45484), (212, 45457), (213, 45445), (214, 45442), (219, 45400), (224, 45352), (227, 45322), (237, 45271), (251, 45223), (262, 45187), (266, 45166), (267, 45163), (273, 45124), (280, 45088), (285, 45073), (286, 45070), (290, 45061), (295, 45043), (298, 45016), (303, 44995), (329, 44884), (352, 44761),

Gene: Lars\_51 Start: 46669, Stop: 44954, Start Num: 67

Candidate Starts for Lars\_51:

(Start: 67 @46669 has 49 MA's), (102, 46486), (Start: 103 @46483 has 1 MA's), (108, 46447), (109, 46435), (111, 46426), (119, 46390), (120, 46387), (123, 46354), (134, 46291), (147, 46183), (151, 46144), (163, 46063), (167, 46030), (169, 46021), (173, 45982), (176, 45961), (177, 45958), (183, 45916), (185, 45901), (186, 45886), (193, 45856), (198, 45829), (202, 45805), (203, 45781), (209, 45757), (210, 45754), (212, 45727), (213, 45715), (215, 45709), (219, 45670), (224, 45622), (227, 45592), (237, 45541), (240, 45514), (251, 45466), (253, 45454), (261, 45427), (262, 45424), (265, 45409), (275, 45343), (286, 45310), (309, 45232), (318, 45202), (319, 45199), (322, 45187), (331, 45148), (344, 45070), (352, 45028), (366, 44962),

Gene: Larva\_65 Start: 45264, Stop: 46979, Start Num: 77

Candidate Starts for Larva\_65:

(Start: 77 @45264 has 31 MA's), (92, 45357), (96, 45399), (Start: 103 @45435 has 1 MA's), (104, 45438), (107, 45462), (108, 45471), (116, 45510), (119, 45528), (127, 45585), (131, 45612), (132, 45615), (140, 45678), (147, 45738), (150, 45768), (151, 45777), (161, 45852), (162, 45855), (171, 45927), (172, 45936), (173, 45939), (181, 46005), (182, 46008), (183, 46011), (185, 46026), (186, 46041), (189, 46056), (196, 46086), (198, 46098), (212, 46200), (213, 46212), (214, 46215), (215, 46218), (217, 46239), (219, 46257), (224, 46305), (229, 46338), (233, 46365), (265, 46494), (270,

46518), (275, 46563), (276, 46566), (286, 46599), (300, 46623), (320, 46677), (322, 46683), (327, 46707), (352, 46824), (353, 46839), (361, 46866), (364, 46890),

Gene: LasagnaCat\_53 Start: 47179, Stop: 45383, Start Num: 38

Candidate Starts for LasagnaCat\_53:

(Start: 38 @47179 has 111 MA's), (Start: 69 @47086 has 103 MA's), (Start: 82 @47062 has 11 MA's), (Start: 87 @47005 has 1 MA's), (Start: 89 @46996 has 2 MA's), (104, 46906), (108, 46873), (119, 46816), (121, 46804), (123, 46780), (126, 46768), (127, 46759), (138, 46699), (147, 46609), (151, 46564), (158, 46504), (167, 46450), (173, 46402), (176, 46381), (198, 46249), (208, 46180), (210, 46174), (212, 46147), (214, 46132), (219, 46090), (224, 46042), (227, 46012), (232, 45985), (266, 45859), (268, 45853), (271, 45826), (281, 45781), (286, 45766), (288, 45760), (301, 45706), (303, 45697), (352, 45469), (358, 45433),

Gene: Lasso\_52 Start: 46915, Stop: 45212, Start Num: 69

Candidate Starts for Lasso\_52:

(Start: 69 @46915 has 103 MA's), (Start: 82 @46891 has 11 MA's), (Start: 87 @46834 has 1 MA's), (Start: 89 @46825 has 2 MA's), (104, 46735), (108, 46702), (119, 46645), (121, 46633), (123, 46609), (126, 46597), (127, 46588), (138, 46528), (147, 46438), (151, 46393), (158, 46333), (167, 46279), (173, 46231), (176, 46210), (198, 46078), (208, 46009), (210, 46003), (212, 45976), (214, 45961), (219, 45919), (224, 45871), (227, 45841), (232, 45814), (266, 45688), (268, 45682), (271, 45655), (280, 45613), (281, 45610), (286, 45595), (288, 45589), (301, 45535), (303, 45526), (352, 45298), (358, 45262),

Gene: Laurie\_50 Start: 46054, Stop: 44342, Start Num: 67

Candidate Starts for Laurie\_50:

(Start: 67 @46054 has 49 MA's), (75, 46042), (102, 45871), (Start: 103 @45868 has 1 MA's), (108, 45832), (109, 45820), (111, 45811), (119, 45775), (120, 45772), (123, 45739), (134, 45676), (147, 45568), (151, 45529), (163, 45448), (167, 45415), (169, 45406), (173, 45367), (176, 45346), (177, 45343), (183, 45301), (185, 45286), (186, 45271), (193, 45241), (198, 45214), (202, 45190), (203, 45166), (209, 45142), (210, 45139), (212, 45112), (213, 45100), (215, 45094), (219, 45055), (224, 45007), (227, 44977), (237, 44926), (240, 44899), (251, 44851), (253, 44839), (261, 44815), (262, 44812), (265, 44797), (275, 44731), (286, 44698), (309, 44620), (318, 44590), (319, 44587), (322, 44575), (331, 44536), (344, 44458), (352, 44416), (366, 44350),

Gene: LeeLot\_52 Start: 46943, Stop: 45264, Start Num: 82

Candidate Starts for LeeLot\_52:

(Start: 68 @46967 has 66 MA's), (Start: 82 @46943 has 11 MA's), (Start: 87 @46886 has 1 MA's), (Start: 89 @46877 has 2 MA's), (104, 46787), (108, 46754), (119, 46697), (121, 46685), (123, 46661), (126, 46649), (127, 46640), (138, 46580), (147, 46490), (151, 46445), (158, 46385), (167, 46331), (173, 46283), (176, 46262), (198, 46130), (208, 46061), (210, 46055), (212, 46028), (214, 46013), (219, 45971), (224, 45923), (227, 45893), (232, 45866), (266, 45740), (268, 45734), (271, 45707), (281, 45662), (286, 45647), (288, 45641), (301, 45587), (303, 45578), (352, 45350), (358, 45314),

Gene: Lego3393\_51 Start: 47188, Stop: 45392, Start Num: 38

Candidate Starts for Lego3393\_51:

(Start: 38 @47188 has 111 MA's), (Start: 69 @47095 has 103 MA's), (Start: 82 @47071 has 11 MA's), (Start: 87 @47014 has 1 MA's), (Start: 89 @47005 has 2 MA's), (104, 46915), (108, 46882), (119, 46825), (121, 46813), (123, 46789), (126, 46777), (127, 46768), (138, 46708), (147, 46618), (151, 46573), (158, 46513), (167, 46459), (173, 46411), (176, 46390), (198, 46258), (208, 46189), (210, 46183), (212, 46156), (214, 46141), (219, 46099), (224, 46051), (227, 46021), (232, 45994), (266, 45868), (268, 45862), (271, 45835), (281, 45790), (286, 45775), (288, 45769), (301, 45715), (303, 45706), (352, 45478), (358, 45442),

Gene: Legolas\_52 Start: 46685, Stop: 44982, Start Num: 69

Candidate Starts for Legolas\_52:

(Start: 38 @46778 has 111 MA's), (Start: 69 @46685 has 103 MA's), (Start: 82 @46661 has 11 MA's), (Start: 87 @46604 has 1 MA's), (Start: 89 @46595 has 2 MA's), (104, 46505), (108, 46472), (119, 46415), (121, 46403), (123, 46379), (126, 46367), (127, 46358), (138, 46298), (147, 46208), (151, 46163), (158, 46103), (167, 46049), (173, 46001), (176, 45980), (198, 45848), (208, 45779), (210, 45773), (212, 45746), (214, 45731), (219, 45689), (224, 45641), (227, 45611), (232, 45584), (266, 45458), (268, 45452), (271, 45425), (280, 45383), (281, 45380), (286, 45365), (288, 45359), (301, 45305), (303, 45296), (352, 45068), (358, 45032),

Gene: LeiMonet\_53 Start: 46740, Stop: 44944, Start Num: 38

Candidate Starts for LeiMonet\_53:

(Start: 38 @46740 has 111 MA's), (Start: 69 @46647 has 103 MA's), (Start: 82 @46623 has 11 MA's), (Start: 87 @46566 has 1 MA's), (Start: 89 @46557 has 2 MA's), (104, 46467), (108, 46434), (119, 46377), (121, 46365), (123, 46341), (126, 46329), (127, 46320), (138, 46260), (147, 46170), (151, 46125), (158, 46065), (167, 46011), (173, 45963), (176, 45942), (198, 45810), (208, 45741), (210, 45735), (212, 45708), (214, 45693), (219, 45651), (224, 45603), (227, 45573), (232, 45546), (266, 45420), (268, 45414), (271, 45387), (281, 45342), (286, 45327), (288, 45321), (301, 45267), (303, 45258), (352, 45030), (358, 44994),

Gene: LemonSlice\_52 Start: 46745, Stop: 44949, Start Num: 38

Candidate Starts for LemonSlice\_52:

(Start: 38 @46745 has 111 MA's), (Start: 69 @46652 has 103 MA's), (Start: 82 @46628 has 11 MA's), (Start: 87 @46571 has 1 MA's), (Start: 89 @46562 has 2 MA's), (104, 46472), (108, 46439), (119, 46382), (121, 46370), (123, 46346), (126, 46334), (127, 46325), (138, 46265), (147, 46175), (151, 46130), (158, 46070), (167, 46016), (173, 45968), (176, 45947), (198, 45815), (208, 45746), (210, 45740), (212, 45713), (214, 45698), (219, 45656), (224, 45608), (227, 45578), (232, 45551), (266, 45425), (268, 45419), (271, 45392), (281, 45347), (286, 45332), (288, 45326), (301, 45272), (303, 45263), (352, 45035), (358, 44999),

Gene: Lephleur\_51 Start: 46575, Stop: 44860, Start Num: 67

Candidate Starts for Lephleur\_51:

(10, 47004), (12, 46968), (14, 46896), (16, 46881), (20, 46830), (Start: 67 @46575 has 49 MA's), (75, 46563), (102, 46392), (Start: 103 @46389 has 1 MA's), (108, 46353), (109, 46341), (111, 46332), (119, 46296), (120, 46293), (123, 46260), (134, 46197), (147, 46089), (151, 46050), (163, 45969), (167, 45936), (169, 45927), (173, 45888), (176, 45867), (177, 45864), (183, 45822), (185, 45807), (186, 45792), (193, 45762), (198, 45735), (203, 45687), (209, 45663), (210, 45660), (212, 45633), (213, 45621), (215, 45615), (219, 45576), (224, 45528), (227, 45498), (228, 45492), (237, 45447), (251, 45372), (253, 45360), (261, 45333), (262, 45330), (265, 45315), (275, 45249), (286, 45216), (309, 45138), (318, 45108), (319, 45105), (322, 45093), (331, 45054), (344, 44976), (345, 44973), (352, 44934), (366, 44868),

Gene: Leston\_64 Start: 45849, Stop: 47558, Start Num: 77

Candidate Starts for Leston\_64:

(Start: 77 @45849 has 31 MA's), (92, 45942), (96, 45984), (Start: 103 @46020 has 1 MA's), (104, 46023), (107, 46047), (108, 46056), (116, 46095), (119, 46113), (127, 46170), (131, 46197), (132, 46200), (140, 46263), (147, 46323), (150, 46353), (151, 46362), (158, 46422), (161, 46437), (162, 46440), (168, 46482), (169, 46485), (172, 46521), (173, 46524), (181, 46590), (182, 46593), (183, 46596), (185, 46611), (186, 46626), (189, 46641), (196, 46671), (198, 46683), (212, 46785), (213, 46797), (214, 46800), (215, 46803), (217, 46824), (219, 46842), (223, 46887), (224, 46890), (230, 46929), (233, 46950), (265, 47079), (275, 47148), (276, 47151), (286, 47184), (287, 47187), (288, 47190), (313, 47253), (320, 47262), (322, 47268), (327, 47292), (339, 47325), (348, 47388), (352, 47409), (353, 47424), (361, 47451), (362, 47460), (364, 47475),



Gene: LestyG\_51 Start: 46842, Stop: 45145, Start Num: 64

Candidate Starts for LestyG\_51:

(Start: 64 @46842 has 34 MA's), (Start: 103 @46644 has 1 MA's), (108, 46608), (119, 46551), (127, 46494), (134, 46452), (136, 46446), (141, 46389), (146, 46362), (147, 46344), (158, 46239), (171, 46149), (173, 46137), (176, 46116), (183, 46071), (193, 46008), (205, 45924), (209, 45909), (210, 45906), (211, 45903), (212, 45879), (215, 45861), (219, 45822), (224, 45774), (227, 45744), (231, 45720), (238, 45678), (264, 45600), (270, 45573), (275, 45531), (277, 45522), (286, 45498), (312, 45411), (325, 45369), (344, 45264), (352, 45222), (353, 45207), (356, 45189),

Gene: Ligma\_46 Start: 40113, Stop: 38449, Start Num: 67

Candidate Starts for Ligma\_46:

(36, 40215), (Start: 65 @40116 has 1 MA's), (Start: 67 @40113 has 49 MA's), (101, 39939), (102, 39933), (104, 39927), (108, 39894), (109, 39882), (119, 39837), (145, 39651), (147, 39630), (158, 39531), (163, 39510), (167, 39477), (173, 39429), (181, 39369), (207, 39213), (209, 39204), (212, 39174), (214, 39159), (219, 39117), (224, 39069), (227, 39039), (229, 39030), (286, 38796), (301, 38757), (303, 38748), (322, 38685), (346, 38562), (352, 38526), (368, 38460),

Gene: LilMcDreamy\_50 Start: 47527, Stop: 45827, Start Num: 70

Candidate Starts for LilMcDreamy\_50:

(50, 47605), (Start: 70 @47527 has 10 MA's), (92, 47428), (108, 47314), (119, 47260), (123, 47224), (138, 47143), (145, 47074), (147, 47053), (167, 46900), (172, 46855), (173, 46852), (183, 46786), (210, 46624), (212, 46597), (213, 46585), (214, 46582), (219, 46540), (220, 46537), (224, 46492), (227, 46462), (237, 46411), (238, 46396), (241, 46390), (247, 46375), (254, 46345), (259, 46333), (262, 46321), (266, 46300), (267, 46297), (275, 46240), (280, 46222), (286, 46204), (295, 46180), (310, 46105), (332, 46021), (352, 45907), (362, 45856),

Gene: LittleMunchkin\_47 Start: 42897, Stop: 41230, Start Num: 67

Candidate Starts for LittleMunchkin\_47:

(Start: 67 @42897 has 49 MA's), (81, 42864), (84, 42837), (86, 42828), (92, 42786), (101, 42717), (102, 42711), (104, 42705), (108, 42672), (134, 42516), (138, 42498), (145, 42429), (147, 42408), (163, 42288), (173, 42207), (176, 42186), (181, 42147), (209, 41982), (210, 41979), (212, 41952), (213, 41940), (214, 41937), (219, 41895), (227, 41817), (285, 41574), (286, 41571), (301, 41532), (303, 41523), (319, 41466), (322, 41460), (336, 41400), (352, 41301),

Gene: LizLemon\_51 Start: 46691, Stop: 44976, Start Num: 67

Candidate Starts for LizLemon\_51:

(10, 47120), (12, 47084), (14, 47012), (20, 46946), (Start: 67 @46691 has 49 MA's), (102, 46508), (Start: 103 @46505 has 1 MA's), (108, 46469), (109, 46457), (111, 46448), (119, 46412), (120, 46409), (123, 46376), (134, 46313), (147, 46205), (151, 46166), (163, 46085), (167, 46052), (169, 46043), (173, 46004), (176, 45983), (177, 45980), (183, 45938), (185, 45923), (186, 45908), (193, 45878), (198, 45851), (203, 45803), (209, 45779), (210, 45776), (212, 45749), (213, 45737), (215, 45731), (219, 45692), (224, 45644), (227, 45614), (237, 45563), (240, 45536), (251, 45488), (253, 45476), (261, 45449), (262, 45446), (265, 45431), (275, 45365), (286, 45332), (309, 45254), (318, 45224), (319, 45221), (322, 45209), (331, 45170), (344, 45092), (352, 45050), (366, 44984),

Gene: Lolalove\_48 Start: 47423, Stop: 45711, Start Num: 69

Candidate Starts for Lolalove\_48:

(Start: 69 @47423 has 103 MA's), (102, 47240), (108, 47201), (111, 47180), (123, 47111), (138, 47030), (145, 46961), (147, 46940), (158, 46841), (163, 46820), (167, 46787), (169, 46778), (172, 46742), (173, 46739), (177, 46715), (194, 46604), (196, 46598), (198, 46586), (208, 46517), (210, 46511), (212, 46484), (213, 46472), (214, 46469), (219, 46427), (224, 46379), (227, 46349), (262, 46214), (265, 46199), (266, 46193), (267, 46190), (272, 46157), (273, 46151), (274, 46142), (280,

46115), (285, 46100), (286, 46097), (290, 46088), (295, 46070), (298, 46043), (303, 46022), (329, 45911), (352, 45788), (359, 45749), (362, 45737),

Gene: Longacauda\_51 Start: 46741, Stop: 44945, Start Num: 38

Candidate Starts for Longacauda\_51:

(Start: 38 @46741 has 111 MA's), (Start: 69 @46648 has 103 MA's), (Start: 82 @46624 has 11 MA's), (Start: 87 @46567 has 1 MA's), (Start: 89 @46558 has 2 MA's), (104, 46468), (108, 46435), (119, 46378), (121, 46366), (123, 46342), (126, 46330), (127, 46321), (138, 46261), (147, 46171), (151, 46126), (158, 46066), (167, 46012), (173, 45964), (176, 45943), (198, 45811), (208, 45742), (210, 45736), (212, 45709), (214, 45694), (219, 45652), (224, 45604), (227, 45574), (232, 45547), (266, 45421), (268, 45415), (271, 45388), (280, 45346), (281, 45343), (286, 45328), (288, 45322), (301, 45268), (303, 45259), (352, 45031), (358, 44995),

Gene: Lopsy\_51 Start: 46513, Stop: 44810, Start Num: 69

Candidate Starts for Lopsy\_51:

(Start: 38 @46609 has 111 MA's), (Start: 69 @46513 has 103 MA's), (Start: 82 @46489 has 11 MA's), (Start: 87 @46432 has 1 MA's), (Start: 89 @46423 has 2 MA's), (104, 46333), (108, 46300), (119, 46243), (121, 46231), (123, 46207), (126, 46195), (127, 46186), (138, 46126), (147, 46036), (151, 45991), (158, 45931), (173, 45829), (176, 45808), (198, 45676), (208, 45607), (210, 45601), (212, 45574), (214, 45559), (219, 45517), (224, 45469), (227, 45439), (232, 45412), (266, 45286), (268, 45280), (271, 45253), (281, 45208), (286, 45193), (288, 45187), (301, 45133), (303, 45124), (352, 44896), (358, 44860),

Gene: LostAndPhound\_51 Start: 46667, Stop: 44964, Start Num: 69

Candidate Starts for LostAndPhound\_51:

(Start: 38 @46760 has 111 MA's), (Start: 69 @46667 has 103 MA's), (Start: 82 @46643 has 11 MA's), (Start: 87 @46586 has 1 MA's), (Start: 89 @46577 has 2 MA's), (104, 46487), (108, 46454), (119, 46397), (121, 46385), (123, 46361), (126, 46349), (127, 46340), (138, 46280), (147, 46190), (151, 46145), (158, 46085), (167, 46031), (173, 45983), (176, 45962), (198, 45830), (208, 45761), (210, 45755), (212, 45728), (214, 45713), (219, 45671), (224, 45623), (227, 45593), (232, 45566), (266, 45440), (268, 45434), (271, 45407), (280, 45365), (281, 45362), (286, 45347), (288, 45341), (301, 45287), (303, 45278), (352, 45050), (358, 45014),

Gene: LuckyMarjie\_51 Start: 46655, Stop: 44952, Start Num: 68

Candidate Starts for LuckyMarjie\_51:

(Start: 68 @46655 has 66 MA's), (Start: 82 @46631 has 11 MA's), (Start: 87 @46574 has 1 MA's), (Start: 89 @46565 has 2 MA's), (104, 46475), (108, 46442), (119, 46385), (121, 46373), (123, 46349), (126, 46337), (127, 46328), (138, 46268), (147, 46178), (151, 46133), (158, 46073), (167, 46019), (173, 45971), (176, 45950), (198, 45818), (208, 45749), (210, 45743), (212, 45716), (214, 45701), (219, 45659), (224, 45611), (227, 45581), (232, 45554), (266, 45428), (268, 45422), (271, 45395), (281, 45350), (286, 45335), (288, 45329), (301, 45275), (303, 45266), (352, 45038), (358, 45002),

Gene: Lulumae\_51 Start: 46640, Stop: 44937, Start Num: 68

Candidate Starts for Lulumae\_51:

(Start: 68 @46640 has 66 MA's), (Start: 82 @46616 has 11 MA's), (Start: 87 @46559 has 1 MA's), (Start: 89 @46550 has 2 MA's), (104, 46460), (108, 46427), (119, 46370), (121, 46358), (123, 46334), (126, 46322), (127, 46313), (138, 46253), (147, 46163), (151, 46118), (158, 46058), (167, 46004), (173, 45956), (176, 45935), (198, 45803), (208, 45734), (210, 45728), (212, 45701), (214, 45686), (219, 45644), (224, 45596), (227, 45566), (232, 45539), (266, 45413), (268, 45407), (271, 45380), (281, 45335), (286, 45320), (288, 45314), (301, 45260), (303, 45251), (352, 45023), (358, 44987),

Gene: Lulwa\_52 Start: 46933, Stop: 45230, Start Num: 68

Candidate Starts for Lulwa\_52:

(Start: 68 @46933 has 66 MA's), (Start: 82 @46909 has 11 MA's), (Start: 87 @46852 has 1 MA's), (Start: 89 @46843 has 2 MA's), (104, 46753), (108, 46720), (119, 46663), (121, 46651), (123, 46627), (126, 46615), (127, 46606), (138, 46546), (147, 46456), (151, 46411), (158, 46351), (173, 46249), (176, 46228), (198, 46096), (208, 46027), (210, 46021), (212, 45994), (214, 45979), (219, 45937), (224, 45889), (227, 45859), (232, 45832), (266, 45706), (268, 45700), (271, 45673), (281, 45628), (286, 45613), (288, 45607), (301, 45553), (303, 45544), (352, 45316), (358, 45280),

Gene: Lumine\_51 Start: 46729, Stop: 44933, Start Num: 38

Candidate Starts for Lumine\_51:

(Start: 38 @46729 has 111 MA's), (Start: 69 @46636 has 103 MA's), (Start: 82 @46612 has 11 MA's), (Start: 87 @46555 has 1 MA's), (Start: 89 @46546 has 2 MA's), (104, 46456), (108, 46423), (119, 46366), (121, 46354), (123, 46330), (126, 46318), (127, 46309), (138, 46249), (147, 46159), (151, 46114), (158, 46054), (167, 46000), (173, 45952), (176, 45931), (198, 45799), (208, 45730), (210, 45724), (212, 45697), (214, 45682), (219, 45640), (224, 45592), (227, 45562), (232, 45535), (266, 45409), (268, 45403), (271, 45376), (281, 45331), (286, 45316), (288, 45310), (301, 45256), (303, 45247), (352, 45019), (358, 44983),

Gene: MRabcd\_51 Start: 46646, Stop: 44943, Start Num: 69

Candidate Starts for MRabcd\_51:

(Start: 38 @46739 has 111 MA's), (Start: 69 @46646 has 103 MA's), (Start: 82 @46622 has 11 MA's), (Start: 87 @46565 has 1 MA's), (Start: 89 @46556 has 2 MA's), (104, 46466), (108, 46433), (119, 46376), (121, 46364), (123, 46340), (126, 46328), (127, 46319), (138, 46259), (147, 46169), (151, 46124), (158, 46064), (167, 46010), (173, 45962), (176, 45941), (198, 45809), (208, 45740), (210, 45734), (212, 45707), (214, 45692), (219, 45650), (224, 45602), (227, 45572), (232, 45545), (266, 45419), (268, 45413), (271, 45386), (280, 45344), (281, 45341), (286, 45326), (288, 45320), (301, 45266), (303, 45257), (352, 45029), (358, 44993),

Gene: Mag7\_51 Start: 46546, Stop: 44867, Start Num: 82

Candidate Starts for Mag7\_51:

(Start: 38 @46663 has 111 MA's), (Start: 69 @46570 has 103 MA's), (Start: 82 @46546 has 11 MA's), (Start: 87 @46489 has 1 MA's), (Start: 89 @46480 has 2 MA's), (104, 46390), (108, 46357), (119, 46300), (121, 46288), (123, 46264), (126, 46252), (127, 46243), (138, 46183), (147, 46093), (151, 46048), (158, 45988), (167, 45934), (173, 45886), (176, 45865), (198, 45733), (208, 45664), (210, 45658), (212, 45631), (214, 45616), (219, 45574), (224, 45526), (227, 45496), (232, 45469), (266, 45343), (268, 45337), (271, 45310), (281, 45265), (286, 45250), (288, 45244), (301, 45190), (303, 45181), (352, 44953), (358, 44917),

Gene: Magic8\_52 Start: 47098, Stop: 45302, Start Num: 38

Candidate Starts for Magic8\_52:

(Start: 38 @47098 has 111 MA's), (Start: 69 @47005 has 103 MA's), (Start: 82 @46981 has 11 MA's), (Start: 87 @46924 has 1 MA's), (Start: 89 @46915 has 2 MA's), (104, 46825), (108, 46792), (119, 46735), (121, 46723), (123, 46699), (126, 46687), (127, 46678), (138, 46618), (147, 46528), (151, 46483), (158, 46423), (167, 46369), (173, 46321), (176, 46300), (198, 46168), (208, 46099), (210, 46093), (212, 46066), (214, 46051), (219, 46009), (224, 45961), (227, 45931), (232, 45904), (266, 45778), (268, 45772), (271, 45745), (281, 45700), (286, 45685), (288, 45679), (301, 45625), (303, 45616), (352, 45388), (358, 45352),

Gene: Magpie\_46 Start: 47259, Stop: 45550, Start Num: 69

Candidate Starts for Magpie\_46:

(Start: 69 @47259 has 103 MA's), (102, 47076), (105, 47067), (108, 47037), (111, 47016), (123, 46947), (134, 46884), (138, 46866), (145, 46797), (147, 46776), (158, 46677), (163, 46656), (167, 46623), (169, 46614), (172, 46578), (173, 46575), (177, 46551), (194, 46440), (196, 46434), (198, 46422), (208, 46353), (210, 46347), (212, 46320), (213, 46308), (214, 46305), (219, 46263), (224,

46215), (227, 46185), (237, 46134), (262, 46053), (265, 46038), (266, 46032), (267, 46029), (272, 45996), (273, 45990), (274, 45981), (280, 45954), (285, 45939), (286, 45936), (290, 45927), (295, 45909), (298, 45882), (303, 45861), (329, 45750), (349, 45642), (352, 45627), (359, 45588), (362, 45576),

Gene: Mahdia\_34 Start: 27314, Stop: 25536, Start Num: 39

Candidate Starts for Mahdia\_34:

(Start: 39 @27314 has 1 MA's), (Start: 79 @27179 has 7 MA's), (80, 27176), (84, 27137), (88, 27101), (97, 27035), (104, 27002), (108, 26969), (111, 26948), (123, 26882), (127, 26861), (134, 26819), (137, 26810), (147, 26708), (153, 26663), (158, 26615), (163, 26594), (165, 26588), (169, 26552), (173, 26513), (175, 26501), (177, 26489), (179, 26477), (181, 26453), (185, 26432), (194, 26378), (214, 26243), (215, 26240), (219, 26201), (227, 26123), (229, 26114), (241, 26051), (277, 25901), (286, 25880), (323, 25751), (325, 25739), (352, 25601), (359, 25562),

Gene: Maih\_53 Start: 44660, Stop: 46498, Start Num: 77

Candidate Starts for Maih\_53:

(Start: 77 @44660 has 31 MA's), (86, 44705), (90, 44741), (92, 44747), (94, 44774), (102, 44834), (111, 44894), (123, 44966), (124, 44969), (126, 44978), (131, 45014), (137, 45038), (140, 45080), (143, 45101), (147, 45125), (149, 45152), (153, 45185), (155, 45212), (165, 45260), (168, 45290), (184, 45410), (185, 45419), (187, 45437), (191, 45455), (209, 45566), (210, 45569), (213, 45608), (219, 45653), (220, 45656), (230, 45746), (283, 46028), (293, 46055), (316, 46229), (324, 46265), (328, 46280), (348, 46382), (354, 46430), (357, 46439),

Gene: MakoManhole\_48 Start: 41999, Stop: 40332, Start Num: 67

Candidate Starts for MakoManhole\_48:

(Start: 67 @41999 has 49 MA's), (92, 41894), (95, 41864), (102, 41819), (Start: 103 @41816 has 1 MA's), (108, 41780), (109, 41768), (145, 41534), (147, 41513), (158, 41411), (172, 41312), (173, 41309), (178, 41276), (196, 41168), (208, 41087), (209, 41084), (210, 41081), (212, 41054), (213, 41042), (214, 41039), (219, 40997), (227, 40919), (229, 40910), (235, 40877), (266, 40769), (267, 40766), (275, 40709), (285, 40679), (286, 40676), (332, 40526), (352, 40409), (368, 40343),

Gene: Mana\_51 Start: 46655, Stop: 44952, Start Num: 69

Candidate Starts for Mana\_51:

(Start: 69 @46655 has 103 MA's), (Start: 82 @46631 has 11 MA's), (Start: 87 @46574 has 1 MA's), (Start: 89 @46565 has 2 MA's), (104, 46475), (108, 46442), (119, 46385), (121, 46373), (123, 46349), (126, 46337), (127, 46328), (138, 46268), (147, 46178), (151, 46133), (158, 46073), (167, 46019), (173, 45971), (176, 45950), (198, 45818), (208, 45749), (210, 45743), (212, 45716), (214, 45701), (219, 45659), (224, 45611), (227, 45581), (232, 45554), (266, 45428), (268, 45422), (271, 45395), (280, 45353), (281, 45350), (286, 45335), (288, 45329), (301, 45275), (303, 45266), (352, 45038), (358, 45002),

Gene: Manad\_52 Start: 46915, Stop: 45212, Start Num: 68

Candidate Starts for Manad\_52:

(13, 47248), (15, 47221), (Start: 68 @46915 has 66 MA's), (Start: 82 @46891 has 11 MA's), (Start: 87 @46834 has 1 MA's), (Start: 89 @46825 has 2 MA's), (104, 46735), (108, 46702), (119, 46645), (121, 46633), (123, 46609), (126, 46597), (127, 46588), (138, 46528), (147, 46438), (151, 46393), (158, 46333), (173, 46231), (176, 46210), (198, 46078), (208, 46009), (210, 46003), (212, 45976), (214, 45961), (219, 45919), (224, 45871), (227, 45841), (232, 45814), (266, 45688), (268, 45682), (271, 45655), (280, 45613), (281, 45610), (286, 45595), (288, 45589), (301, 45535), (303, 45526), (352, 45298), (358, 45262),

Gene: Mariokart\_46 Start: 40264, Stop: 38594, Start Num: 65

Candidate Starts for Mariokart\_46:

(Start: 65 @40264 has 1 MA's), (Start: 67 @40261 has 49 MA's), (86, 40198), (92, 40156), (104, 40075), (105, 40072), (108, 40042), (109, 40030), (119, 39985), (134, 39886), (145, 39796), (147, 39775), (158, 39676), (163, 39655), (167, 39622), (173, 39574), (177, 39550), (181, 39514), (186, 39478), (209, 39349), (210, 39346), (212, 39319), (214, 39304), (219, 39262), (224, 39214), (227, 39184), (236, 39136), (256, 39067), (261, 39058), (286, 38941), (301, 38902), (319, 38836), (322, 38830), (334, 38779), (340, 38752), (346, 38707), (352, 38671),

Gene: Marley1013\_52 Start: 47893, Stop: 46385, Start Num: 103

Candidate Starts for Marley1013\_52:

(Start: 64 @48091 has 34 MA's), (Start: 103 @47893 has 1 MA's), (108, 47857), (119, 47800), (127, 47743), (134, 47701), (136, 47695), (141, 47638), (146, 47611), (147, 47593), (158, 47488), (171, 47398), (173, 47386), (176, 47365), (183, 47320), (193, 47257), (205, 47173), (209, 47158), (210, 47155), (211, 47152), (212, 47128), (215, 47110), (219, 47071), (224, 47023), (227, 46993), (231, 46969), (238, 46927), (264, 46849), (270, 46822), (277, 46771), (286, 46747), (312, 46660), (325, 46618), (344, 46513), (347, 46498), (352, 46471), (353, 46456), (369, 46402),

Gene: Maru\_51 Start: 46598, Stop: 44895, Start Num: 69

Candidate Starts for Maru\_51:

(Start: 38 @46691 has 111 MA's), (Start: 69 @46598 has 103 MA's), (Start: 82 @46574 has 11 MA's), (Start: 87 @46517 has 1 MA's), (Start: 89 @46508 has 2 MA's), (104, 46418), (108, 46385), (119, 46328), (121, 46316), (123, 46292), (126, 46280), (127, 46271), (138, 46211), (147, 46121), (151, 46076), (158, 46016), (167, 45962), (173, 45914), (176, 45893), (198, 45761), (208, 45692), (210, 45686), (212, 45659), (214, 45644), (219, 45602), (224, 45554), (227, 45524), (232, 45497), (266, 45371), (268, 45365), (271, 45338), (281, 45293), (286, 45278), (288, 45272), (301, 45218), (303, 45209), (352, 44981), (358, 44945),

Gene: Maskar\_52 Start: 46729, Stop: 44933, Start Num: 38

Candidate Starts for Maskar\_52:

(Start: 38 @46729 has 111 MA's), (Start: 69 @46636 has 103 MA's), (Start: 82 @46612 has 11 MA's), (Start: 87 @46555 has 1 MA's), (Start: 89 @46546 has 2 MA's), (104, 46456), (108, 46423), (119, 46366), (121, 46354), (123, 46330), (126, 46318), (127, 46309), (138, 46249), (147, 46159), (151, 46114), (158, 46054), (167, 46000), (173, 45952), (176, 45931), (198, 45799), (208, 45730), (210, 45724), (212, 45697), (214, 45682), (219, 45640), (224, 45592), (227, 45562), (232, 45535), (266, 45409), (268, 45403), (271, 45376), (281, 45331), (286, 45316), (288, 45310), (301, 45256), (303, 45247), (352, 45019), (358, 44983),

Gene: MasterPo\_51 Start: 46584, Stop: 44869, Start Num: 67

Candidate Starts for MasterPo\_51:

(10, 47013), (12, 46977), (14, 46905), (16, 46890), (20, 46839), (Start: 67 @46584 has 49 MA's), (75, 46572), (102, 46401), (Start: 103 @46398 has 1 MA's), (108, 46362), (109, 46350), (111, 46341), (119, 46305), (120, 46302), (123, 46269), (134, 46206), (147, 46098), (151, 46059), (163, 45978), (167, 45945), (169, 45936), (173, 45897), (176, 45876), (177, 45873), (183, 45831), (185, 45816), (186, 45801), (193, 45771), (198, 45744), (203, 45696), (209, 45672), (210, 45669), (212, 45642), (213, 45630), (215, 45624), (219, 45585), (224, 45537), (227, 45507), (228, 45501), (237, 45456), (251, 45381), (253, 45369), (261, 45342), (262, 45339), (265, 45324), (275, 45258), (286, 45225), (309, 45147), (318, 45117), (319, 45114), (322, 45102), (331, 45063), (344, 44985), (345, 44982), (352, 44943), (366, 44877),

Gene: Matalotodo\_52 Start: 46950, Stop: 45247, Start Num: 68

Candidate Starts for Matalotodo\_52:

(13, 47283), (15, 47256), (Start: 68 @46950 has 66 MA's), (Start: 82 @46926 has 11 MA's), (Start: 87 @46869 has 1 MA's), (Start: 89 @46860 has 2 MA's), (104, 46770), (108, 46737), (119, 46680), (121, 46668), (123, 46644), (126, 46632), (127, 46623), (138, 46563), (147, 46473), (151, 46428), (158,

46368), (173, 46266), (176, 46245), (198, 46113), (208, 46044), (210, 46038), (212, 46011), (214, 45996), (219, 45954), (224, 45906), (227, 45876), (232, 45849), (266, 45723), (268, 45717), (271, 45690), (280, 45648), (281, 45645), (286, 45630), (288, 45624), (301, 45570), (303, 45561), (352, 45333), (358, 45297),

Gene: Mcshane\_51 Start: 46740, Stop: 44944, Start Num: 38

Candidate Starts for Mcshane\_51:

(Start: 38 @46740 has 111 MA's), (Start: 69 @46647 has 103 MA's), (Start: 82 @46623 has 11 MA's), (Start: 87 @46566 has 1 MA's), (Start: 89 @46557 has 2 MA's), (104, 46467), (108, 46434), (119, 46377), (121, 46365), (123, 46341), (126, 46329), (127, 46320), (138, 46260), (147, 46170), (151, 46125), (158, 46065), (173, 45963), (176, 45942), (198, 45810), (208, 45741), (210, 45735), (212, 45708), (214, 45693), (219, 45651), (224, 45603), (227, 45573), (232, 45546), (266, 45420), (268, 45414), (271, 45387), (281, 45342), (286, 45327), (288, 45321), (301, 45267), (303, 45258), (352, 45030), (358, 44994),

Gene: Mecca\_51 Start: 46653, Stop: 44950, Start Num: 69

Candidate Starts for Mecca\_51:

(23, 46836), (24, 46830), (Start: 69 @46653 has 103 MA's), (Start: 82 @46629 has 11 MA's), (Start: 87 @46572 has 1 MA's), (Start: 89 @46563 has 2 MA's), (104, 46473), (108, 46440), (119, 46383), (121, 46371), (123, 46347), (126, 46335), (127, 46326), (138, 46266), (147, 46176), (151, 46131), (158, 46071), (167, 46017), (173, 45969), (176, 45948), (198, 45816), (208, 45747), (210, 45741), (212, 45714), (214, 45699), (219, 45657), (224, 45609), (227, 45579), (232, 45552), (266, 45426), (268, 45420), (271, 45393), (281, 45348), (286, 45333), (288, 45327), (301, 45273), (303, 45264), (352, 45036), (358, 45000),

Gene: Megamind20\_52 Start: 46768, Stop: 44972, Start Num: 38

Candidate Starts for Megamind20\_52:

(Start: 38 @46768 has 111 MA's), (Start: 69 @46675 has 103 MA's), (Start: 82 @46651 has 11 MA's), (Start: 87 @46594 has 1 MA's), (Start: 89 @46585 has 2 MA's), (104, 46495), (108, 46462), (119, 46405), (121, 46393), (123, 46369), (126, 46357), (127, 46348), (138, 46288), (147, 46198), (151, 46153), (158, 46093), (173, 45991), (176, 45970), (198, 45838), (208, 45769), (210, 45763), (212, 45736), (214, 45721), (219, 45679), (224, 45631), (227, 45601), (232, 45574), (266, 45448), (268, 45442), (271, 45415), (280, 45373), (281, 45370), (286, 45355), (288, 45349), (301, 45295), (303, 45286), (352, 45058), (358, 45022),

Gene: Megatron\_53 Start: 47176, Stop: 45380, Start Num: 38

Candidate Starts for Megatron\_53:

(Start: 38 @47176 has 111 MA's), (Start: 69 @47083 has 103 MA's), (Start: 82 @47059 has 11 MA's), (Start: 87 @47002 has 1 MA's), (Start: 89 @46993 has 2 MA's), (104, 46903), (108, 46870), (119, 46813), (121, 46801), (123, 46777), (126, 46765), (127, 46756), (138, 46696), (147, 46606), (151, 46561), (158, 46501), (173, 46399), (176, 46378), (198, 46246), (208, 46177), (210, 46171), (212, 46144), (214, 46129), (219, 46087), (224, 46039), (227, 46009), (232, 45982), (266, 45856), (268, 45850), (271, 45823), (280, 45781), (281, 45778), (286, 45763), (288, 45757), (301, 45703), (303, 45694), (352, 45466), (358, 45430),

Gene: Melc17\_52 Start: 47050, Stop: 45242, Start Num: 38

Candidate Starts for Melc17\_52:

(Start: 38 @47050 has 111 MA's), (Start: 69 @46945 has 103 MA's), (Start: 82 @46921 has 11 MA's), (Start: 87 @46864 has 1 MA's), (Start: 89 @46855 has 2 MA's), (104, 46765), (108, 46732), (119, 46675), (121, 46663), (123, 46639), (126, 46627), (127, 46618), (138, 46558), (147, 46468), (151, 46423), (158, 46363), (167, 46309), (173, 46261), (176, 46240), (198, 46108), (208, 46039), (210, 46033), (212, 46006), (214, 45991), (219, 45949), (224, 45901), (227, 45871), (232, 45844), (266, 45718), (268, 45712), (271, 45685), (281, 45640), (286, 45625), (288, 45619), (301, 45565), (303,

45556), (352, 45328), (358, 45292),

Gene: MelsMeow\_52 Start: 46782, Stop: 44986, Start Num: 38

Candidate Starts for MelsMeow\_52:

(Start: 38 @46782 has 111 MA's), (Start: 69 @46689 has 103 MA's), (Start: 82 @46665 has 11 MA's), (Start: 87 @46608 has 1 MA's), (Start: 89 @46599 has 2 MA's), (104, 46509), (108, 46476), (119, 46419), (121, 46407), (123, 46383), (126, 46371), (127, 46362), (138, 46302), (147, 46212), (151, 46167), (158, 46107), (167, 46053), (173, 46005), (176, 45984), (198, 45852), (208, 45783), (210, 45777), (212, 45750), (214, 45735), (219, 45693), (224, 45645), (227, 45615), (232, 45588), (266, 45462), (268, 45456), (271, 45429), (281, 45384), (286, 45369), (288, 45363), (301, 45309), (303, 45300), (352, 45072), (358, 45036),

Gene: Mesh1\_53 Start: 47190, Stop: 45487, Start Num: 68

Candidate Starts for Mesh1\_53:

(Start: 68 @47190 has 66 MA's), (Start: 82 @47166 has 11 MA's), (Start: 87 @47109 has 1 MA's), (Start: 89 @47100 has 2 MA's), (104, 47010), (108, 46977), (119, 46920), (121, 46908), (123, 46884), (126, 46872), (127, 46863), (138, 46803), (147, 46713), (151, 46668), (158, 46608), (167, 46554), (173, 46506), (176, 46485), (198, 46353), (208, 46284), (210, 46278), (212, 46251), (214, 46236), (219, 46194), (224, 46146), (227, 46116), (232, 46089), (266, 45963), (268, 45957), (271, 45930), (280, 45888), (281, 45885), (286, 45870), (288, 45864), (301, 45810), (303, 45801), (352, 45573), (358, 45537),

Gene: MichaelPhcott\_51 Start: 46660, Stop: 44864, Start Num: 38

Candidate Starts for MichaelPhcott\_51:

(Start: 38 @46660 has 111 MA's), (Start: 69 @46567 has 103 MA's), (Start: 82 @46543 has 11 MA's), (Start: 87 @46486 has 1 MA's), (Start: 89 @46477 has 2 MA's), (104, 46387), (108, 46354), (119, 46297), (121, 46285), (123, 46261), (126, 46249), (127, 46240), (138, 46180), (147, 46090), (151, 46045), (158, 45985), (167, 45931), (173, 45883), (176, 45862), (198, 45730), (208, 45661), (210, 45655), (212, 45628), (214, 45613), (219, 45571), (224, 45523), (227, 45493), (232, 45466), (266, 45340), (268, 45334), (271, 45307), (281, 45262), (286, 45247), (288, 45241), (301, 45187), (303, 45178), (352, 44950), (358, 44914),

Gene: Mikota\_52 Start: 46933, Stop: 45230, Start Num: 68

Candidate Starts for Mikota\_52:

(Start: 68 @46933 has 66 MA's), (Start: 82 @46909 has 11 MA's), (Start: 87 @46852 has 1 MA's), (Start: 89 @46843 has 2 MA's), (104, 46753), (108, 46720), (119, 46663), (121, 46651), (123, 46627), (126, 46615), (127, 46606), (138, 46546), (147, 46456), (151, 46411), (158, 46351), (173, 46249), (176, 46228), (198, 46096), (208, 46027), (210, 46021), (212, 45994), (214, 45979), (219, 45937), (224, 45889), (227, 45859), (232, 45832), (266, 45706), (268, 45700), (271, 45673), (281, 45628), (286, 45613), (288, 45607), (301, 45553), (303, 45544), (352, 45316), (358, 45280),

Gene: MiniBoss\_52 Start: 46939, Stop: 45236, Start Num: 68

Candidate Starts for MiniBoss\_52:

(Start: 68 @46939 has 66 MA's), (Start: 82 @46915 has 11 MA's), (Start: 87 @46858 has 1 MA's), (Start: 89 @46849 has 2 MA's), (104, 46759), (108, 46726), (119, 46669), (121, 46657), (123, 46633), (126, 46621), (127, 46612), (138, 46552), (147, 46462), (151, 46417), (158, 46357), (173, 46255), (176, 46234), (198, 46102), (208, 46033), (210, 46027), (212, 46000), (214, 45985), (219, 45943), (224, 45895), (227, 45865), (232, 45838), (266, 45712), (268, 45706), (271, 45679), (281, 45634), (286, 45619), (288, 45613), (301, 45559), (303, 45550), (352, 45322), (358, 45286),

Gene: Miryou\_68 Start: 48475, Stop: 50184, Start Num: 77

Candidate Starts for Miryou\_68:

(Start: 77 @48475 has 31 MA's), (92, 48568), (Start: 103 @48646 has 1 MA's), (104, 48649), (107, 48673), (108, 48682), (116, 48721), (119, 48739), (127, 48796), (131, 48823), (132, 48826), (140, 48889), (147, 48949), (150, 48979), (151, 48988), (161, 49063), (162, 49066), (168, 49108), (169, 49111), (172, 49147), (173, 49150), (181, 49216), (182, 49219), (183, 49222), (185, 49237), (186, 49252), (189, 49267), (196, 49297), (198, 49309), (212, 49411), (213, 49423), (214, 49426), (215, 49429), (217, 49450), (219, 49468), (223, 49513), (224, 49516), (230, 49555), (233, 49576), (265, 49705), (275, 49774), (276, 49777), (286, 49810), (287, 49813), (288, 49816), (313, 49879), (320, 49888), (322, 49894), (327, 49918), (339, 49951), (348, 50014), (352, 50035), (353, 50050), (361, 50077), (362, 50086), (364, 50101),

Gene: Mischief19\_63 Start: 55349, Stop: 57295, Start Num: 60

Candidate Starts for Mischief19\_63:

(18, 55088), (21, 55130), (27, 55199), (35, 55244), (36, 55247), (58, 55304), (Start: 60 @55349 has 1 MA's), (96, 55529), (110, 55631), (114, 55646), (126, 55718), (134, 55769), (140, 55820), (149, 55925), (151, 55946), (158, 56006), (165, 56033), (168, 56063), (183, 56198), (184, 56204), (187, 56231), (198, 56285), (209, 56357), (210, 56360), (216, 56420), (234, 56561), (298, 56924), (316, 57020), (350, 57185), (355, 57224),

Gene: MitKao\_52 Start: 46665, Stop: 44962, Start Num: 69

Candidate Starts for MitKao\_52:

(Start: 69 @46665 has 103 MA's), (Start: 82 @46641 has 11 MA's), (Start: 87 @46584 has 1 MA's), (Start: 89 @46575 has 2 MA's), (104, 46485), (108, 46452), (119, 46395), (121, 46383), (123, 46359), (126, 46347), (127, 46338), (138, 46278), (147, 46188), (151, 46143), (158, 46083), (173, 45981), (176, 45960), (198, 45828), (208, 45759), (210, 45753), (212, 45726), (214, 45711), (219, 45669), (224, 45621), (227, 45591), (232, 45564), (266, 45438), (268, 45432), (271, 45405), (280, 45363), (281, 45360), (286, 45345), (288, 45339), (301, 45285), (303, 45276), (352, 45048), (358, 45012),

Gene: Mithril\_47 Start: 47427, Stop: 45718, Start Num: 69

Candidate Starts for Mithril\_47:

(Start: 69 @47427 has 103 MA's), (102, 47244), (108, 47205), (111, 47184), (123, 47115), (138, 47034), (145, 46965), (147, 46944), (158, 46845), (163, 46824), (167, 46791), (169, 46782), (173, 46743), (177, 46719), (194, 46608), (196, 46602), (198, 46590), (208, 46521), (210, 46515), (212, 46488), (213, 46476), (214, 46473), (219, 46431), (224, 46383), (227, 46353), (230, 46338), (237, 46302), (262, 46221), (265, 46206), (266, 46200), (267, 46197), (272, 46164), (273, 46158), (274, 46149), (280, 46122), (285, 46107), (286, 46104), (290, 46095), (295, 46077), (298, 46050), (303, 46029), (329, 45918), (349, 45810), (352, 45795), (359, 45756),

Gene: MmasiCarm\_53 Start: 47647, Stop: 45950, Start Num: 64

Candidate Starts for MmasiCarm\_53:

(Start: 64 @47647 has 34 MA's), (Start: 103 @47449 has 1 MA's), (108, 47413), (119, 47356), (127, 47299), (134, 47257), (136, 47251), (141, 47194), (146, 47167), (147, 47149), (158, 47044), (161, 47029), (171, 46954), (173, 46942), (176, 46921), (183, 46876), (193, 46813), (205, 46729), (209, 46714), (210, 46711), (211, 46708), (212, 46684), (215, 46666), (219, 46627), (224, 46579), (227, 46549), (231, 46525), (238, 46483), (264, 46405), (270, 46378), (275, 46336), (277, 46327), (286, 46303), (312, 46216), (325, 46174), (344, 46069), (352, 46027), (353, 46012),

Gene: Morgushi\_52 Start: 46654, Stop: 44951, Start Num: 69

Candidate Starts for Morgushi\_52:

(Start: 69 @46654 has 103 MA's), (Start: 82 @46630 has 11 MA's), (Start: 87 @46573 has 1 MA's), (Start: 89 @46564 has 2 MA's), (104, 46474), (108, 46441), (119, 46384), (121, 46372), (123, 46348), (126, 46336), (127, 46327), (138, 46267), (147, 46177), (151, 46132), (158, 46072), (167, 46018), (173, 45970), (176, 45949), (198, 45817), (208, 45748), (210, 45742), (212, 45715), (214, 45700), (219, 45658), (224, 45610), (227, 45580), (232, 45553), (266, 45427), (268, 45421), (271, 45394),



(280, 45352), (281, 45349), (286, 45334), (288, 45328), (301, 45274), (303, 45265), (352, 45037), (358, 45001),

Gene: Morrissey\_35 Start: 28363, Stop: 26723, Start Num: 79

Candidate Starts for Morrissey\_35:

(Start: 79 @28363 has 7 MA's), (84, 28321), (85, 28318), (92, 28267), (104, 28186), (108, 28153), (111, 28132), (123, 28066), (127, 28045), (129, 28027), (131, 28018), (134, 28003), (137, 27994), (147, 27892), (153, 27847), (163, 27778), (165, 27772), (169, 27736), (171, 27709), (173, 27697), (175, 27685), (177, 27673), (179, 27661), (181, 27637), (191, 27580), (206, 27484), (214, 27427), (215, 27424), (219, 27385), (227, 27307), (229, 27298), (230, 27292), (241, 27235), (250, 27199), (270, 27136), (273, 27112), (286, 27064), (302, 27010), (341, 26857), (351, 26788), (352, 26785), (363, 26731),

Gene: Mortcellus\_52 Start: 48254, Stop: 46557, Start Num: 64

Candidate Starts for Mortcellus\_52:

(Start: 64 @48254 has 34 MA's), (Start: 103 @48056 has 1 MA's), (108, 48020), (119, 47963), (127, 47906), (134, 47864), (136, 47858), (141, 47801), (146, 47774), (147, 47756), (158, 47651), (171, 47561), (173, 47549), (176, 47528), (183, 47483), (193, 47420), (205, 47336), (209, 47321), (210, 47318), (211, 47315), (212, 47291), (215, 47273), (219, 47234), (224, 47186), (227, 47156), (231, 47132), (238, 47090), (264, 47012), (270, 46985), (277, 46934), (286, 46910), (301, 46862), (312, 46823), (325, 46781), (344, 46676), (352, 46634), (353, 46619),

Gene: Morty\_53 Start: 47185, Stop: 45389, Start Num: 38

Candidate Starts for Morty\_53:

(Start: 38 @47185 has 111 MA's), (Start: 69 @47092 has 103 MA's), (Start: 82 @47068 has 11 MA's), (Start: 87 @47011 has 1 MA's), (Start: 89 @47002 has 2 MA's), (104, 46912), (108, 46879), (119, 46822), (121, 46810), (123, 46786), (126, 46774), (127, 46765), (138, 46705), (147, 46615), (151, 46570), (158, 46510), (167, 46456), (173, 46408), (176, 46387), (198, 46255), (208, 46186), (210, 46180), (212, 46153), (214, 46138), (219, 46096), (224, 46048), (227, 46018), (232, 45991), (266, 45865), (268, 45859), (271, 45832), (280, 45790), (281, 45787), (286, 45772), (288, 45766), (301, 45712), (303, 45703), (352, 45475), (358, 45439),

Gene: Morty007\_52 Start: 48091, Stop: 46385, Start Num: 64

Candidate Starts for Morty007\_52:

(Start: 64 @48091 has 34 MA's), (Start: 103 @47893 has 1 MA's), (108, 47857), (119, 47800), (127, 47743), (134, 47701), (136, 47695), (141, 47638), (146, 47611), (147, 47593), (158, 47488), (171, 47398), (173, 47386), (176, 47365), (183, 47320), (193, 47257), (205, 47173), (209, 47158), (210, 47155), (211, 47152), (212, 47128), (215, 47110), (219, 47071), (224, 47023), (227, 46993), (231, 46969), (238, 46927), (264, 46849), (270, 46822), (277, 46771), (286, 46747), (312, 46660), (325, 46618), (344, 46513), (347, 46498), (352, 46471), (353, 46456), (369, 46402),

Gene: Mosaic\_51 Start: 46659, Stop: 44956, Start Num: 69

Candidate Starts for Mosaic\_51:

(Start: 69 @46659 has 103 MA's), (Start: 82 @46635 has 11 MA's), (Start: 87 @46578 has 1 MA's), (Start: 89 @46569 has 2 MA's), (104, 46479), (108, 46446), (119, 46389), (121, 46377), (123, 46353), (126, 46341), (127, 46332), (138, 46272), (147, 46182), (151, 46137), (158, 46077), (167, 46023), (173, 45975), (176, 45954), (198, 45822), (208, 45753), (210, 45747), (212, 45720), (214, 45705), (219, 45663), (224, 45615), (227, 45585), (232, 45558), (266, 45432), (268, 45426), (271, 45399), (280, 45357), (281, 45354), (286, 45339), (288, 45333), (301, 45279), (303, 45270), (352, 45042), (358, 45006),

Gene: MossRose\_48 Start: 41978, Stop: 40311, Start Num: 67

Candidate Starts for MossRose\_48:

(Start: 67 @41978 has 49 MA's), (92, 41873), (95, 41843), (Start: 103 @41795 has 1 MA's), (108, 41759), (109, 41747), (145, 41513), (147, 41492), (158, 41390), (172, 41291), (173, 41288), (178, 41255), (196, 41147), (208, 41066), (209, 41063), (210, 41060), (212, 41033), (213, 41021), (214, 41018), (215, 41015), (219, 40976), (227, 40898), (229, 40889), (235, 40856), (258, 40778), (262, 40769), (266, 40748), (267, 40745), (275, 40688), (285, 40658), (286, 40655), (332, 40505), (352, 40388), (368, 40322),

Gene: MrPhizzler\_51 Start: 46566, Stop: 44953, Start Num: 89

Candidate Starts for MrPhizzler\_51:

(Start: 69 @46656 has 103 MA's), (Start: 82 @46632 has 11 MA's), (Start: 87 @46575 has 1 MA's), (Start: 89 @46566 has 2 MA's), (104, 46476), (108, 46443), (119, 46386), (121, 46374), (123, 46350), (126, 46338), (127, 46329), (138, 46269), (147, 46179), (151, 46134), (158, 46074), (167, 46020), (173, 45972), (176, 45951), (198, 45819), (208, 45750), (210, 45744), (212, 45717), (214, 45702), (219, 45660), (224, 45612), (227, 45582), (232, 45555), (266, 45429), (268, 45423), (271, 45396), (280, 45354), (281, 45351), (286, 45336), (288, 45330), (301, 45276), (303, 45267), (352, 45039), (358, 45003),

Gene: Mudslide\_47 Start: 47689, Stop: 45977, Start Num: 69

Candidate Starts for Mudslide\_47:

(Start: 69 @47689 has 103 MA's), (102, 47506), (108, 47467), (111, 47446), (123, 47377), (138, 47296), (145, 47227), (147, 47206), (158, 47107), (163, 47086), (167, 47053), (169, 47044), (172, 47008), (173, 47005), (177, 46981), (194, 46870), (196, 46864), (198, 46852), (208, 46783), (210, 46777), (212, 46750), (213, 46738), (214, 46735), (219, 46693), (224, 46645), (227, 46615), (262, 46480), (265, 46465), (266, 46459), (267, 46456), (272, 46423), (273, 46417), (274, 46408), (280, 46381), (285, 46366), (286, 46363), (290, 46354), (295, 46336), (298, 46309), (303, 46288), (329, 46177), (352, 46054), (359, 46015), (362, 46003),

Gene: Mulan\_52 Start: 46902, Stop: 45106, Start Num: 38

Candidate Starts for Mulan\_52:

(Start: 38 @46902 has 111 MA's), (Start: 69 @46809 has 103 MA's), (Start: 82 @46785 has 11 MA's), (Start: 87 @46728 has 1 MA's), (Start: 89 @46719 has 2 MA's), (104, 46629), (108, 46596), (119, 46539), (121, 46527), (123, 46503), (126, 46491), (127, 46482), (138, 46422), (147, 46332), (151, 46287), (158, 46227), (167, 46173), (173, 46125), (176, 46104), (198, 45972), (208, 45903), (210, 45897), (212, 45870), (214, 45855), (219, 45813), (224, 45765), (227, 45735), (232, 45708), (266, 45582), (268, 45576), (271, 45549), (281, 45504), (286, 45489), (288, 45483), (301, 45429), (303, 45420), (352, 45192), (358, 45156),

Gene: Murdoc\_52 Start: 46940, Stop: 45237, Start Num: 68

Candidate Starts for Murdoc\_52:

(13, 47273), (15, 47246), (Start: 68 @46940 has 66 MA's), (Start: 82 @46916 has 11 MA's), (Start: 87 @46859 has 1 MA's), (Start: 89 @46850 has 2 MA's), (104, 46760), (108, 46727), (119, 46670), (121, 46658), (123, 46634), (126, 46622), (127, 46613), (138, 46553), (147, 46463), (151, 46418), (158, 46358), (167, 46304), (173, 46256), (176, 46235), (198, 46103), (208, 46034), (210, 46028), (212, 46001), (214, 45986), (219, 45944), (224, 45896), (227, 45866), (232, 45839), (266, 45713), (268, 45707), (271, 45680), (281, 45635), (286, 45620), (288, 45614), (301, 45560), (303, 45551), (352, 45323), (358, 45287),

Gene: Mutante\_51 Start: 46752, Stop: 44956, Start Num: 38

Candidate Starts for Mutante\_51:

(Start: 38 @46752 has 111 MA's), (Start: 69 @46659 has 103 MA's), (Start: 82 @46635 has 11 MA's), (Start: 87 @46578 has 1 MA's), (Start: 89 @46569 has 2 MA's), (104, 46479), (108, 46446), (119, 46389), (121, 46377), (123, 46353), (126, 46341), (127, 46332), (138, 46272), (147, 46182), (151, 46137), (158, 46077), (167, 46023), (173, 45975), (176, 45954), (198, 45822), (208, 45753), (210,

45747), (212, 45720), (214, 45705), (219, 45663), (224, 45615), (227, 45585), (232, 45558), (266, 45432), (268, 45426), (271, 45399), (281, 45354), (286, 45339), (288, 45333), (301, 45279), (303, 45270), (352, 45042), (358, 45006),

Gene: Mysterious\_52 Start: 47964, Stop: 46270, Start Num: 70

Candidate Starts for Mysterious\_52:

(Start: 70 @47964 has 10 MA's), (91, 47865), (Start: 103 @47784 has 1 MA's), (108, 47748), (119, 47694), (123, 47658), (134, 47595), (138, 47577), (145, 47508), (147, 47487), (167, 47334), (172, 47289), (173, 47286), (177, 47262), (201, 47115), (207, 47070), (208, 47064), (210, 47058), (212, 47031), (213, 47019), (214, 47016), (219, 46974), (220, 46971), (224, 46926), (227, 46896), (237, 46845), (257, 46779), (259, 46776), (262, 46764), (266, 46743), (267, 46740), (273, 46701), (275, 46683), (280, 46665), (286, 46647), (288, 46641), (295, 46623), (325, 46488), (337, 46446), (349, 46365), (352, 46350), (362, 46299), (367, 46284),

Gene: NHagos\_47 Start: 41016, Stop: 39343, Start Num: 73

Candidate Starts for NHagos\_47:

(Start: 73 @41016 has 1 MA's), (91, 40917), (92, 40914), (95, 40884), (Start: 103 @40836 has 1 MA's), (108, 40800), (109, 40788), (134, 40644), (145, 40554), (147, 40533), (167, 40377), (173, 40329), (177, 40305), (178, 40296), (186, 40233), (196, 40188), (208, 40107), (209, 40104), (210, 40101), (212, 40074), (213, 40062), (219, 40017), (224, 39969), (227, 39939), (235, 39897), (266, 39789), (267, 39786), (285, 39699), (286, 39696), (322, 39573), (331, 39534), (352, 39414),

Gene: Nacho\_0053 Start: 47179, Stop: 45383, Start Num: 38

Candidate Starts for Nacho\_0053:

(Start: 38 @47179 has 111 MA's), (Start: 69 @47086 has 103 MA's), (Start: 82 @47062 has 11 MA's), (Start: 87 @47005 has 1 MA's), (Start: 89 @46996 has 2 MA's), (104, 46906), (108, 46873), (119, 46816), (121, 46804), (123, 46780), (126, 46768), (127, 46759), (138, 46699), (147, 46609), (151, 46564), (158, 46504), (167, 46450), (173, 46402), (176, 46381), (198, 46249), (208, 46180), (210, 46174), (212, 46147), (214, 46132), (219, 46090), (224, 46042), (227, 46012), (232, 45985), (266, 45859), (268, 45853), (271, 45826), (281, 45781), (286, 45766), (288, 45760), (301, 45706), (303, 45697), (352, 45469), (358, 45433),

Gene: Nanao\_46 Start: 46392, Stop: 44677, Start Num: 69

Candidate Starts for Nanao\_46:

(Start: 69 @46392 has 103 MA's), (105, 46200), (108, 46170), (111, 46149), (119, 46113), (123, 46077), (125, 46068), (145, 45927), (147, 45906), (148, 45885), (158, 45807), (163, 45786), (167, 45753), (169, 45744), (172, 45708), (173, 45705), (177, 45681), (196, 45564), (198, 45552), (202, 45528), (208, 45483), (210, 45477), (212, 45450), (213, 45438), (214, 45435), (219, 45393), (224, 45345), (227, 45315), (237, 45264), (251, 45216), (262, 45180), (266, 45159), (267, 45156), (273, 45117), (280, 45081), (285, 45066), (286, 45063), (290, 45054), (295, 45036), (298, 45009), (303, 44988), (329, 44877), (352, 44754),

Gene: Nangang\_52 Start: 48195, Stop: 46501, Start Num: 70

Candidate Starts for Nangang\_52:

(Start: 70 @48195 has 10 MA's), (Start: 82 @48168 has 11 MA's), (91, 48096), (108, 47979), (123, 47889), (126, 47877), (134, 47826), (138, 47808), (145, 47739), (147, 47718), (157, 47622), (163, 47598), (167, 47565), (173, 47517), (176, 47496), (196, 47376), (202, 47340), (207, 47301), (208, 47295), (210, 47289), (212, 47262), (213, 47250), (214, 47247), (219, 47205), (227, 47127), (259, 47004), (262, 46992), (266, 46971), (267, 46968), (273, 46929), (275, 46911), (280, 46893), (286, 46875), (337, 46674), (352, 46578),

Gene: Nehemiah\_51 Start: 47964, Stop: 46270, Start Num: 70

Candidate Starts for Nehemiah\_51:

(Start: 70 @47964 has 10 MA's), (91, 47865), (Start: 103 @47784 has 1 MA's), (108, 47748), (119, 47694), (123, 47658), (134, 47595), (138, 47577), (145, 47508), (147, 47487), (167, 47334), (173, 47286), (177, 47262), (207, 47070), (208, 47064), (210, 47058), (212, 47031), (213, 47019), (214, 47016), (219, 46974), (220, 46971), (224, 46926), (227, 46896), (232, 46869), (237, 46845), (257, 46779), (259, 46776), (262, 46764), (266, 46743), (267, 46740), (273, 46701), (275, 46683), (280, 46665), (286, 46647), (288, 46641), (295, 46623), (325, 46488), (337, 46446), (349, 46365), (352, 46350), (362, 46299), (367, 46284),

Gene: Neos5\_52 Start: 47952, Stop: 46255, Start Num: 64

Candidate Starts for Neos5\_52:

(Start: 64 @47952 has 34 MA's), (Start: 103 @47754 has 1 MA's), (108, 47718), (119, 47661), (127, 47604), (134, 47562), (136, 47556), (141, 47499), (146, 47472), (147, 47454), (158, 47349), (171, 47259), (173, 47247), (176, 47226), (183, 47181), (193, 47118), (205, 47034), (209, 47019), (210, 47016), (211, 47013), (212, 46989), (215, 46971), (219, 46932), (224, 46884), (227, 46854), (231, 46830), (238, 46788), (264, 46710), (270, 46683), (275, 46641), (277, 46632), (286, 46608), (301, 46560), (312, 46521), (325, 46479), (344, 46374), (352, 46332), (353, 46317),

Gene: Newman\_52 Start: 46957, Stop: 45254, Start Num: 68

Candidate Starts for Newman\_52:

(Start: 68 @46957 has 66 MA's), (Start: 82 @46933 has 11 MA's), (Start: 87 @46876 has 1 MA's), (Start: 89 @46867 has 2 MA's), (104, 46777), (108, 46744), (119, 46687), (121, 46675), (123, 46651), (126, 46639), (127, 46630), (138, 46570), (147, 46480), (151, 46435), (158, 46375), (167, 46321), (173, 46273), (176, 46252), (198, 46120), (208, 46051), (210, 46045), (212, 46018), (214, 46003), (219, 45961), (224, 45913), (227, 45883), (232, 45856), (266, 45730), (268, 45724), (271, 45697), (280, 45655), (281, 45652), (286, 45637), (288, 45631), (301, 45577), (303, 45568), (352, 45340), (358, 45304),

Gene: Nicole21\_52 Start: 47054, Stop: 45258, Start Num: 38

Candidate Starts for Nicole21\_52:

(Start: 38 @47054 has 111 MA's), (Start: 69 @46961 has 103 MA's), (Start: 82 @46937 has 11 MA's), (Start: 87 @46880 has 1 MA's), (Start: 89 @46871 has 2 MA's), (104, 46781), (108, 46748), (119, 46691), (121, 46679), (123, 46655), (126, 46643), (127, 46634), (138, 46574), (147, 46484), (151, 46439), (158, 46379), (167, 46325), (173, 46277), (176, 46256), (198, 46124), (208, 46055), (210, 46049), (212, 46022), (214, 46007), (219, 45965), (224, 45917), (227, 45887), (232, 45860), (266, 45734), (268, 45728), (271, 45701), (280, 45659), (281, 45656), (286, 45641), (288, 45635), (301, 45581), (303, 45572), (352, 45344), (358, 45308),

Gene: Nigel\_47 Start: 47239, Stop: 45527, Start Num: 69

Candidate Starts for Nigel\_47:

(Start: 69 @47239 has 103 MA's), (105, 47047), (108, 47017), (119, 46960), (123, 46924), (125, 46915), (134, 46861), (138, 46843), (145, 46774), (147, 46753), (158, 46654), (163, 46633), (167, 46600), (169, 46591), (172, 46555), (173, 46552), (177, 46528), (194, 46417), (208, 46330), (210, 46324), (212, 46297), (213, 46285), (214, 46282), (219, 46240), (224, 46192), (227, 46162), (237, 46111), (242, 46087), (260, 46036), (261, 46030), (265, 46012), (266, 46006), (267, 46003), (272, 45970), (273, 45964), (274, 45955), (275, 45946), (280, 45928), (285, 45913), (286, 45910), (288, 45904), (295, 45883), (298, 45856), (303, 45835), (329, 45724), (352, 45601),

Gene: Nozo\_52 Start: 48018, Stop: 46219, Start Num: 43

Candidate Starts for Nozo\_52:

(17, 48204), (19, 48183), (25, 48108), (Start: 43 @48018 has 7 MA's), (51, 47994), (Start: 54 @47988 has 3 MA's), (55, 47985), (Start: 64 @47916 has 34 MA's), (Start: 103 @47718 has 1 MA's), (108, 47682), (119, 47625), (127, 47568), (134, 47526), (136, 47520), (141, 47463), (146, 47436), (147, 47418), (158, 47313), (171, 47223), (173, 47211), (176, 47190), (183, 47145), (193, 47082), (205,

46998), (209, 46983), (210, 46980), (211, 46977), (212, 46953), (215, 46935), (219, 46896), (224, 46848), (227, 46818), (231, 46794), (238, 46752), (264, 46674), (270, 46647), (277, 46596), (286, 46572), (301, 46524), (312, 46485), (325, 46443), (344, 46338), (352, 46296), (353, 46281),

Gene: Numberten\_52 Start: 46862, Stop: 45249, Start Num: 89

Candidate Starts for Numberten\_52:

(Start: 68 @46952 has 66 MA's), (Start: 82 @46928 has 11 MA's), (Start: 87 @46871 has 1 MA's), (Start: 89 @46862 has 2 MA's), (104, 46772), (108, 46739), (119, 46682), (121, 46670), (123, 46646), (126, 46634), (127, 46625), (138, 46565), (147, 46475), (151, 46430), (158, 46370), (167, 46316), (173, 46268), (176, 46247), (198, 46115), (208, 46046), (210, 46040), (212, 46013), (214, 45998), (219, 45956), (224, 45908), (227, 45878), (232, 45851), (266, 45725), (268, 45719), (271, 45692), (281, 45647), (286, 45632), (288, 45626), (301, 45572), (303, 45563), (352, 45335), (358, 45299),

Gene: Nyala\_51 Start: 46744, Stop: 44948, Start Num: 38

Candidate Starts for Nyala\_51:

(Start: 38 @46744 has 111 MA's), (Start: 69 @46651 has 103 MA's), (Start: 82 @46627 has 11 MA's), (Start: 87 @46570 has 1 MA's), (Start: 89 @46561 has 2 MA's), (104, 46471), (108, 46438), (119, 46381), (121, 46369), (123, 46345), (126, 46333), (127, 46324), (138, 46264), (147, 46174), (151, 46129), (158, 46069), (173, 45967), (176, 45946), (198, 45814), (208, 45745), (210, 45739), (212, 45712), (214, 45697), (219, 45655), (224, 45607), (227, 45577), (232, 45550), (266, 45424), (268, 45418), (271, 45391), (280, 45349), (281, 45346), (286, 45331), (288, 45325), (301, 45271), (303, 45262), (352, 45034), (358, 44998),

Gene: OSmaximus\_53 Start: 47218, Stop: 45422, Start Num: 38

Candidate Starts for OSmaximus\_53:

(Start: 38 @47218 has 111 MA's), (Start: 69 @47125 has 103 MA's), (Start: 82 @47101 has 11 MA's), (Start: 87 @47044 has 1 MA's), (Start: 89 @47035 has 2 MA's), (104, 46945), (108, 46912), (119, 46855), (121, 46843), (123, 46819), (126, 46807), (127, 46798), (138, 46738), (147, 46648), (151, 46603), (158, 46543), (167, 46489), (173, 46441), (176, 46420), (198, 46288), (208, 46219), (210, 46213), (212, 46186), (214, 46171), (219, 46129), (224, 46081), (227, 46051), (232, 46024), (266, 45898), (268, 45892), (271, 45865), (281, 45820), (286, 45805), (288, 45799), (301, 45745), (303, 45736), (352, 45508), (358, 45472),

Gene: Obutu\_53 Start: 47602, Stop: 45905, Start Num: 64

Candidate Starts for Obutu\_53:

(Start: 64 @47602 has 34 MA's), (Start: 103 @47404 has 1 MA's), (108, 47368), (119, 47311), (127, 47254), (134, 47212), (136, 47206), (141, 47149), (146, 47122), (147, 47104), (158, 46999), (171, 46909), (173, 46897), (176, 46876), (183, 46831), (193, 46768), (205, 46684), (209, 46669), (210, 46666), (211, 46663), (212, 46639), (215, 46621), (219, 46582), (224, 46534), (227, 46504), (231, 46480), (238, 46438), (264, 46360), (270, 46333), (277, 46282), (286, 46258), (301, 46210), (312, 46171), (325, 46129), (344, 46024), (352, 45982), (353, 45967),

Gene: OkiRoe\_65 Start: 46147, Stop: 47856, Start Num: 77

Candidate Starts for OkiRoe\_65:

(Start: 77 @46147 has 31 MA's), (92, 46240), (96, 46282), (Start: 103 @46318 has 1 MA's), (104, 46321), (107, 46345), (108, 46354), (116, 46393), (119, 46411), (127, 46468), (131, 46495), (132, 46498), (140, 46561), (147, 46621), (150, 46651), (151, 46660), (158, 46720), (161, 46735), (162, 46738), (168, 46780), (169, 46783), (172, 46819), (173, 46822), (181, 46888), (182, 46891), (183, 46894), (185, 46909), (186, 46924), (189, 46939), (196, 46969), (198, 46981), (212, 47083), (213, 47095), (214, 47098), (215, 47101), (217, 47122), (219, 47140), (223, 47185), (224, 47188), (230, 47227), (233, 47248), (265, 47377), (275, 47446), (276, 47449), (286, 47482), (287, 47485), (288, 47488), (313, 47551), (320, 47560), (322, 47566), (327, 47590), (339, 47623), (348, 47686), (352, 47707), (353, 47722), (361, 47749), (362, 47758), (364, 47773),

Gene: Olak\_51 Start: 46747, Stop: 44951, Start Num: 38

Candidate Starts for Olak\_51:

(Start: 38 @46747 has 111 MA's), (Start: 69 @46654 has 103 MA's), (Start: 82 @46630 has 11 MA's), (Start: 87 @46573 has 1 MA's), (Start: 89 @46564 has 2 MA's), (104, 46474), (108, 46441), (119, 46384), (121, 46372), (123, 46348), (126, 46336), (127, 46327), (138, 46267), (147, 46177), (151, 46132), (158, 46072), (173, 45970), (176, 45949), (198, 45817), (208, 45748), (210, 45742), (212, 45715), (214, 45700), (219, 45658), (224, 45610), (227, 45580), (232, 45553), (266, 45427), (268, 45421), (271, 45394), (280, 45352), (281, 45349), (286, 45334), (288, 45328), (301, 45274), (303, 45265), (352, 45037), (358, 45001),

Gene: Oline\_51 Start: 46607, Stop: 44811, Start Num: 38

Candidate Starts for Oline\_51:

(Start: 38 @46607 has 111 MA's), (Start: 69 @46514 has 103 MA's), (Start: 82 @46490 has 11 MA's), (Start: 87 @46433 has 1 MA's), (Start: 89 @46424 has 2 MA's), (104, 46334), (108, 46301), (119, 46244), (121, 46232), (123, 46208), (126, 46196), (127, 46187), (138, 46127), (147, 46037), (151, 45992), (158, 45932), (167, 45878), (173, 45830), (176, 45809), (198, 45677), (208, 45608), (210, 45602), (212, 45575), (214, 45560), (219, 45518), (224, 45470), (227, 45440), (232, 45413), (266, 45287), (268, 45281), (271, 45254), (281, 45209), (286, 45194), (288, 45188), (301, 45134), (303, 45125), (352, 44897), (358, 44861),

Gene: Olive\_52 Start: 46941, Stop: 45238, Start Num: 68

Candidate Starts for Olive\_52:

(13, 47253), (15, 47226), (Start: 68 @46941 has 66 MA's), (Start: 82 @46917 has 11 MA's), (Start: 87 @46860 has 1 MA's), (Start: 89 @46851 has 2 MA's), (104, 46761), (108, 46728), (119, 46671), (121, 46659), (123, 46635), (126, 46623), (127, 46614), (138, 46554), (147, 46464), (151, 46419), (158, 46359), (173, 46257), (176, 46236), (198, 46104), (208, 46035), (210, 46029), (212, 46002), (214, 45987), (219, 45945), (224, 45897), (227, 45867), (232, 45840), (266, 45714), (268, 45708), (271, 45681), (280, 45639), (281, 45636), (286, 45621), (288, 45615), (301, 45561), (303, 45552), (352, 45324), (358, 45288),

Gene: OliverWalter\_52 Start: 46963, Stop: 45260, Start Num: 68

Candidate Starts for OliverWalter\_52:

(Start: 68 @46963 has 66 MA's), (Start: 82 @46939 has 11 MA's), (Start: 87 @46882 has 1 MA's), (Start: 89 @46873 has 2 MA's), (104, 46783), (108, 46750), (119, 46693), (121, 46681), (123, 46657), (126, 46645), (127, 46636), (138, 46576), (147, 46486), (151, 46441), (173, 46279), (176, 46258), (198, 46126), (208, 46057), (210, 46051), (212, 46024), (214, 46009), (219, 45967), (224, 45919), (227, 45889), (232, 45862), (266, 45736), (268, 45730), (271, 45703), (281, 45658), (286, 45643), (288, 45637), (301, 45583), (303, 45574), (352, 45346), (358, 45310),

Gene: Omnicron\_68 Start: 46282, Stop: 47976, Start Num: 77

Candidate Starts for Omnicron\_68:

(Start: 77 @46282 has 31 MA's), (91, 46372), (92, 46375), (Start: 103 @46453 has 1 MA's), (104, 46456), (107, 46480), (108, 46489), (116, 46528), (119, 46546), (127, 46603), (131, 46630), (132, 46633), (140, 46696), (147, 46756), (150, 46786), (151, 46795), (158, 46855), (162, 46873), (169, 46918), (172, 46954), (173, 46957), (181, 47023), (182, 47026), (183, 47029), (185, 47044), (186, 47059), (196, 47104), (198, 47116), (211, 47194), (212, 47218), (213, 47230), (214, 47233), (215, 47236), (217, 47257), (219, 47275), (224, 47323), (225, 47326), (233, 47383), (253, 47467), (265, 47509), (275, 47578), (276, 47581), (286, 47614), (287, 47617), (288, 47620), (290, 47623), (313, 47683), (320, 47692), (322, 47698), (327, 47722), (339, 47755), (342, 47782), (352, 47839), (353, 47854), (361, 47881), (362, 47890), (363, 47893), (364, 47905), (374, 47953),

Gene: Omniscient\_52 Start: 46960, Stop: 45257, Start Num: 69

Candidate Starts for Omniscent\_52:

(23, 47143), (24, 47137), (Start: 69 @46960 has 103 MA's), (Start: 82 @46936 has 11 MA's), (Start: 87 @46879 has 1 MA's), (Start: 89 @46870 has 2 MA's), (104, 46780), (108, 46747), (119, 46690), (121, 46678), (123, 46654), (126, 46642), (127, 46633), (138, 46573), (147, 46483), (151, 46438), (158, 46378), (167, 46324), (173, 46276), (176, 46255), (198, 46123), (208, 46054), (210, 46048), (212, 46021), (214, 46006), (219, 45964), (224, 45916), (227, 45886), (232, 45859), (266, 45733), (268, 45727), (271, 45700), (281, 45655), (286, 45640), (288, 45634), (301, 45580), (303, 45571), (352, 45343), (358, 45307),

Gene: Oosterbaan\_52 Start: 46948, Stop: 45245, Start Num: 68

Candidate Starts for Oosterbaan\_52:

(Start: 68 @46948 has 66 MA's), (Start: 82 @46924 has 11 MA's), (Start: 87 @46867 has 1 MA's), (Start: 89 @46858 has 2 MA's), (104, 46768), (108, 46735), (119, 46678), (121, 46666), (123, 46642), (126, 46630), (127, 46621), (138, 46561), (147, 46471), (151, 46426), (158, 46366), (173, 46264), (176, 46243), (198, 46111), (208, 46042), (210, 46036), (212, 46009), (214, 45994), (219, 45952), (224, 45904), (227, 45874), (232, 45847), (266, 45721), (268, 45715), (271, 45688), (280, 45646), (281, 45643), (286, 45628), (288, 45622), (301, 45568), (303, 45559), (352, 45331), (358, 45295),

Gene: Opia\_51 Start: 46578, Stop: 44863, Start Num: 67

Candidate Starts for Opia\_51:

(10, 47007), (12, 46971), (14, 46899), (16, 46884), (20, 46833), (Start: 67 @46578 has 49 MA's), (75, 46566), (102, 46395), (Start: 103 @46392 has 1 MA's), (108, 46356), (109, 46344), (111, 46335), (119, 46299), (120, 46296), (123, 46263), (134, 46200), (147, 46092), (151, 46053), (163, 45972), (167, 45939), (169, 45930), (173, 45891), (176, 45870), (177, 45867), (183, 45825), (185, 45810), (186, 45795), (193, 45765), (198, 45738), (203, 45690), (209, 45666), (210, 45663), (212, 45636), (213, 45624), (215, 45618), (219, 45579), (224, 45531), (227, 45501), (228, 45495), (237, 45450), (251, 45375), (253, 45363), (261, 45336), (262, 45333), (265, 45318), (275, 45252), (286, 45219), (309, 45141), (318, 45111), (319, 45108), (322, 45096), (331, 45057), (344, 44979), (352, 44937), (366, 44871),

Gene: OrangeOswald\_52 Start: 47259, Stop: 45460, Start Num: 43

Candidate Starts for OrangeOswald\_52:

(17, 47445), (19, 47424), (25, 47349), (Start: 43 @47259 has 7 MA's), (51, 47235), (Start: 54 @47229 has 3 MA's), (55, 47226), (Start: 64 @47157 has 34 MA's), (Start: 103 @46959 has 1 MA's), (108, 46923), (119, 46866), (127, 46809), (134, 46767), (136, 46761), (141, 46704), (146, 46677), (147, 46659), (158, 46554), (171, 46464), (173, 46452), (176, 46431), (183, 46386), (193, 46323), (205, 46239), (209, 46224), (210, 46221), (211, 46218), (212, 46194), (215, 46176), (219, 46137), (224, 46089), (227, 46059), (231, 46035), (238, 45993), (264, 45915), (270, 45888), (277, 45837), (286, 45813), (301, 45765), (312, 45726), (325, 45684), (344, 45579), (352, 45537), (353, 45522),

Gene: Orfeu\_51 Start: 46740, Stop: 44944, Start Num: 38

Candidate Starts for Orfeu\_51:

(Start: 38 @46740 has 111 MA's), (Start: 69 @46647 has 103 MA's), (Start: 82 @46623 has 11 MA's), (Start: 87 @46566 has 1 MA's), (Start: 89 @46557 has 2 MA's), (104, 46467), (108, 46434), (119, 46377), (121, 46365), (123, 46341), (126, 46329), (127, 46320), (138, 46260), (147, 46170), (151, 46125), (158, 46065), (173, 45963), (176, 45942), (198, 45810), (208, 45741), (210, 45735), (212, 45708), (214, 45693), (219, 45651), (224, 45603), (227, 45573), (232, 45546), (266, 45420), (268, 45414), (271, 45387), (280, 45345), (281, 45342), (286, 45327), (288, 45321), (301, 45267), (303, 45258), (352, 45030), (358, 44994),

Gene: Orion\_53 Start: 47081, Stop: 45378, Start Num: 69

Candidate Starts for Orion\_53:

(Start: 38 @47174 has 111 MA's), (Start: 69 @47081 has 103 MA's), (Start: 82 @47057 has 11 MA's), (Start: 87 @47000 has 1 MA's), (Start: 89 @46991 has 2 MA's), (104, 46901), (108, 46868), (119, 46811), (121, 46799), (123, 46775), (126, 46763), (127, 46754), (138, 46694), (147, 46604), (151, 46559), (158, 46499), (173, 46397), (176, 46376), (198, 46244), (208, 46175), (210, 46169), (212, 46142), (214, 46127), (219, 46085), (224, 46037), (227, 46007), (232, 45980), (266, 45854), (268, 45848), (271, 45821), (280, 45779), (281, 45776), (286, 45761), (288, 45755), (301, 45701), (303, 45692), (352, 45464), (358, 45428),

Gene: Orwigg\_53 Start: 46740, Stop: 44944, Start Num: 38

Candidate Starts for Orwigg\_53:

(Start: 38 @46740 has 111 MA's), (Start: 69 @46647 has 103 MA's), (Start: 82 @46623 has 11 MA's), (Start: 87 @46566 has 1 MA's), (Start: 89 @46557 has 2 MA's), (104, 46467), (108, 46434), (119, 46377), (121, 46365), (123, 46341), (126, 46329), (127, 46320), (138, 46260), (147, 46170), (151, 46125), (158, 46065), (173, 45963), (176, 45942), (198, 45810), (208, 45741), (210, 45735), (212, 45708), (214, 45693), (219, 45651), (224, 45603), (227, 45573), (232, 45546), (266, 45420), (268, 45414), (271, 45387), (280, 45345), (281, 45342), (286, 45327), (288, 45321), (301, 45267), (303, 45258), (352, 45030), (358, 44994),

Gene: PG1\_53 Start: 47070, Stop: 45391, Start Num: 82

Candidate Starts for PG1\_53:

(Start: 38 @47187 has 111 MA's), (Start: 69 @47094 has 103 MA's), (Start: 82 @47070 has 11 MA's), (Start: 87 @47013 has 1 MA's), (Start: 89 @47004 has 2 MA's), (104, 46914), (108, 46881), (119, 46824), (121, 46812), (123, 46788), (126, 46776), (127, 46767), (138, 46707), (147, 46617), (151, 46572), (158, 46512), (167, 46458), (173, 46410), (176, 46389), (198, 46257), (208, 46188), (210, 46182), (212, 46155), (214, 46140), (219, 46098), (224, 46050), (227, 46020), (232, 45993), (266, 45867), (268, 45861), (271, 45834), (281, 45789), (286, 45774), (288, 45768), (301, 45714), (303, 45705), (352, 45477), (358, 45441),

Gene: Pacifista\_51 Start: 46743, Stop: 44947, Start Num: 38

Candidate Starts for Pacifista\_51:

(Start: 38 @46743 has 111 MA's), (Start: 69 @46650 has 103 MA's), (Start: 82 @46626 has 11 MA's), (Start: 87 @46569 has 1 MA's), (Start: 89 @46560 has 2 MA's), (104, 46470), (108, 46437), (119, 46380), (121, 46368), (123, 46344), (126, 46332), (127, 46323), (138, 46263), (147, 46173), (151, 46128), (158, 46068), (173, 45966), (176, 45945), (198, 45813), (208, 45744), (210, 45738), (212, 45711), (214, 45696), (219, 45654), (224, 45606), (227, 45576), (232, 45549), (266, 45423), (268, 45417), (271, 45390), (280, 45348), (281, 45345), (286, 45330), (288, 45324), (301, 45270), (303, 45261), (352, 45033), (358, 44997),

Gene: Paola\_64 Start: 45720, Stop: 47429, Start Num: 77

Candidate Starts for Paola\_64:

(Start: 77 @45720 has 31 MA's), (92, 45813), (96, 45855), (Start: 103 @45891 has 1 MA's), (104, 45894), (107, 45918), (108, 45927), (116, 45966), (119, 45984), (127, 46041), (131, 46068), (132, 46071), (140, 46134), (147, 46194), (150, 46224), (151, 46233), (158, 46293), (161, 46308), (162, 46311), (168, 46353), (169, 46356), (172, 46392), (173, 46395), (181, 46461), (182, 46464), (183, 46467), (185, 46482), (186, 46497), (189, 46512), (196, 46542), (198, 46554), (212, 46656), (213, 46668), (214, 46671), (215, 46674), (217, 46695), (219, 46713), (223, 46758), (224, 46761), (230, 46800), (233, 46821), (265, 46950), (275, 47019), (276, 47022), (286, 47055), (287, 47058), (288, 47061), (313, 47124), (320, 47133), (322, 47139), (327, 47163), (339, 47196), (348, 47259), (352, 47280), (353, 47295), (361, 47322), (362, 47331), (364, 47346),

Gene: PenguinLover67\_53 Start: 49331, Stop: 47634, Start Num: 70

Candidate Starts for PenguinLover67\_53:



(Start: 70 @49331 has 10 MA's), (92, 49229), (95, 49199), (Start: 103 @49151 has 1 MA's), (108, 49115), (111, 49094), (119, 49058), (123, 49022), (145, 48872), (147, 48851), (148, 48830), (163, 48731), (167, 48698), (172, 48653), (173, 48650), (177, 48626), (185, 48569), (198, 48497), (210, 48422), (212, 48395), (213, 48383), (219, 48338), (224, 48290), (227, 48260), (266, 48116), (275, 48056), (280, 48038), (286, 48020), (297, 47963), (332, 47825), (349, 47726), (352, 47711), (362, 47660),

Gene: Phaedrus\_49 Start: 47080, Stop: 45383, Start Num: 64

Candidate Starts for Phaedrus\_49:

(Start: 64 @47080 has 34 MA's), (Start: 103 @46882 has 1 MA's), (108, 46846), (119, 46789), (127, 46732), (134, 46690), (141, 46627), (146, 46600), (147, 46582), (158, 46477), (161, 46462), (171, 46387), (173, 46375), (176, 46354), (183, 46309), (193, 46246), (205, 46162), (209, 46147), (210, 46144), (211, 46141), (212, 46117), (215, 46099), (219, 46060), (224, 46012), (227, 45982), (231, 45958), (238, 45916), (264, 45838), (270, 45811), (275, 45769), (277, 45760), (286, 45736), (312, 45649), (325, 45607), (344, 45502), (352, 45460), (353, 45445), (356, 45427),

Gene: Phamished\_53 Start: 47194, Stop: 45398, Start Num: 38

Candidate Starts for Phamished\_53:

(Start: 38 @47194 has 111 MA's), (Start: 69 @47101 has 103 MA's), (Start: 82 @47077 has 11 MA's), (Start: 87 @47020 has 1 MA's), (Start: 89 @47011 has 2 MA's), (104, 46921), (108, 46888), (119, 46831), (121, 46819), (123, 46795), (126, 46783), (127, 46774), (138, 46714), (147, 46624), (151, 46579), (158, 46519), (167, 46465), (173, 46417), (176, 46396), (198, 46264), (208, 46195), (210, 46189), (212, 46162), (214, 46147), (219, 46105), (224, 46057), (227, 46027), (232, 46000), (266, 45874), (268, 45868), (271, 45841), (280, 45799), (281, 45796), (286, 45781), (288, 45775), (301, 45721), (303, 45712), (352, 45484), (358, 45448),

Gene: Phantasmagoria\_51 Start: 46576, Stop: 44861, Start Num: 67

Candidate Starts for Phantasmagoria\_51:

(10, 47005), (12, 46969), (14, 46897), (16, 46882), (20, 46831), (Start: 67 @46576 has 49 MA's), (75, 46564), (102, 46393), (Start: 103 @46390 has 1 MA's), (108, 46354), (109, 46342), (111, 46333), (119, 46297), (120, 46294), (123, 46261), (134, 46198), (147, 46090), (151, 46051), (163, 45970), (167, 45937), (169, 45928), (173, 45889), (176, 45868), (177, 45865), (183, 45823), (185, 45808), (186, 45793), (193, 45763), (198, 45736), (203, 45688), (209, 45664), (210, 45661), (212, 45634), (213, 45622), (215, 45616), (219, 45577), (224, 45529), (227, 45499), (228, 45493), (237, 45448), (251, 45373), (253, 45361), (261, 45334), (262, 45331), (265, 45316), (275, 45250), (286, 45217), (309, 45139), (318, 45109), (319, 45106), (322, 45094), (331, 45055), (344, 44977), (345, 44974), (352, 44935), (366, 44869),

Gene: Phareon\_52 Start: 46649, Stop: 44946, Start Num: 68

Candidate Starts for Phareon\_52:

(Start: 68 @46649 has 66 MA's), (Start: 82 @46625 has 11 MA's), (Start: 87 @46568 has 1 MA's), (Start: 89 @46559 has 2 MA's), (104, 46469), (108, 46436), (119, 46379), (121, 46367), (123, 46343), (126, 46331), (127, 46322), (138, 46262), (147, 46172), (151, 46127), (158, 46067), (167, 46013), (173, 45965), (176, 45944), (198, 45812), (208, 45743), (210, 45737), (212, 45710), (214, 45695), (219, 45653), (224, 45605), (227, 45575), (232, 45548), (266, 45422), (268, 45416), (271, 45389), (281, 45344), (286, 45329), (288, 45323), (301, 45269), (303, 45260), (352, 45032), (358, 44996),

Gene: PhatCats2014\_53 Start: 47191, Stop: 45395, Start Num: 38

Candidate Starts for PhatCats2014\_53:

(Start: 38 @47191 has 111 MA's), (Start: 69 @47098 has 103 MA's), (Start: 82 @47074 has 11 MA's), (Start: 87 @47017 has 1 MA's), (Start: 89 @47008 has 2 MA's), (104, 46918), (108, 46885), (119, 46828), (121, 46816), (123, 46792), (126, 46780), (127, 46771), (138, 46711), (147, 46621), (151, 46576), (158, 46516), (173, 46414), (176, 46393), (198, 46261), (208, 46192), (210, 46186), (212,

46159), (214, 46144), (219, 46102), (224, 46054), (227, 46024), (232, 45997), (266, 45871), (268, 45865), (271, 45838), (280, 45796), (281, 45793), (286, 45778), (288, 45772), (301, 45718), (303, 45709), (352, 45481), (358, 45445),

Gene: PhatLouie\_52 Start: 47045, Stop: 45249, Start Num: 38

Candidate Starts for PhatLouie\_52:

(Start: 38 @47045 has 111 MA's), (Start: 69 @46952 has 103 MA's), (Start: 82 @46928 has 11 MA's), (Start: 87 @46871 has 1 MA's), (Start: 89 @46862 has 2 MA's), (104, 46772), (108, 46739), (119, 46682), (121, 46670), (123, 46646), (126, 46634), (127, 46625), (138, 46565), (147, 46475), (151, 46430), (158, 46370), (173, 46268), (176, 46247), (198, 46115), (208, 46046), (210, 46040), (212, 46013), (214, 45998), (219, 45956), (224, 45908), (227, 45878), (232, 45851), (266, 45725), (268, 45719), (271, 45692), (281, 45647), (286, 45632), (288, 45626), (301, 45572), (303, 45563), (352, 45335), (358, 45299),

Gene: Phayeta\_54 Start: 47484, Stop: 45787, Start Num: 64

Candidate Starts for Phayeta\_54:

(Start: 64 @47484 has 34 MA's), (Start: 103 @47286 has 1 MA's), (108, 47250), (119, 47193), (127, 47136), (134, 47094), (136, 47088), (141, 47031), (146, 47004), (147, 46986), (158, 46881), (171, 46791), (173, 46779), (176, 46758), (183, 46713), (193, 46650), (205, 46566), (209, 46551), (210, 46548), (211, 46545), (212, 46521), (215, 46503), (219, 46464), (224, 46416), (227, 46386), (231, 46362), (238, 46320), (264, 46242), (270, 46215), (275, 46173), (277, 46164), (286, 46140), (312, 46053), (325, 46011), (344, 45906), (352, 45864), (353, 45849),

Gene: Phelemich\_50 Start: 47963, Stop: 46269, Start Num: 70

Candidate Starts for Phelemich\_50:

(Start: 70 @47963 has 10 MA's), (91, 47864), (Start: 103 @47783 has 1 MA's), (108, 47747), (119, 47693), (123, 47657), (134, 47594), (138, 47576), (145, 47507), (147, 47486), (167, 47333), (172, 47288), (173, 47285), (177, 47261), (207, 47069), (208, 47063), (210, 47057), (212, 47030), (213, 47018), (214, 47015), (219, 46973), (220, 46970), (224, 46925), (227, 46895), (232, 46868), (237, 46844), (257, 46778), (259, 46775), (262, 46763), (266, 46742), (267, 46739), (273, 46700), (275, 46682), (280, 46664), (286, 46646), (288, 46640), (295, 46622), (325, 46487), (337, 46445), (349, 46364), (352, 46349), (362, 46298), (367, 46283),

Gene: PhenghisKhan\_51 Start: 46666, Stop: 44870, Start Num: 38

Candidate Starts for PhenghisKhan\_51:

(Start: 38 @46666 has 111 MA's), (Start: 69 @46573 has 103 MA's), (Start: 82 @46549 has 11 MA's), (Start: 87 @46492 has 1 MA's), (Start: 89 @46483 has 2 MA's), (104, 46393), (108, 46360), (119, 46303), (121, 46291), (123, 46267), (126, 46255), (127, 46246), (138, 46186), (147, 46096), (151, 46051), (158, 45991), (167, 45937), (173, 45889), (176, 45868), (198, 45736), (208, 45667), (210, 45661), (212, 45634), (214, 45619), (219, 45577), (224, 45529), (227, 45499), (232, 45472), (266, 45346), (268, 45340), (271, 45313), (281, 45268), (286, 45253), (288, 45247), (301, 45193), (303, 45184), (352, 44956), (358, 44920),

Gene: Pherdinand\_53 Start: 47111, Stop: 45408, Start Num: 69

Candidate Starts for Pherdinand\_53:

(Start: 38 @47204 has 111 MA's), (Start: 69 @47111 has 103 MA's), (Start: 82 @47087 has 11 MA's), (Start: 87 @47030 has 1 MA's), (Start: 89 @47021 has 2 MA's), (104, 46931), (108, 46898), (119, 46841), (121, 46829), (123, 46805), (126, 46793), (127, 46784), (138, 46724), (147, 46634), (151, 46589), (158, 46529), (173, 46427), (176, 46406), (198, 46274), (208, 46205), (210, 46199), (212, 46172), (214, 46157), (219, 46115), (224, 46067), (227, 46037), (232, 46010), (266, 45884), (268, 45878), (271, 45851), (280, 45809), (281, 45806), (286, 45791), (288, 45785), (301, 45731), (303, 45722), (352, 45494), (358, 45458),

Gene: Phergie\_52 Start: 46658, Stop: 44862, Start Num: 38

Candidate Starts for Phergie\_52:

(Start: 38 @46658 has 111 MA's), (Start: 69 @46565 has 103 MA's), (Start: 82 @46541 has 11 MA's), (Start: 87 @46484 has 1 MA's), (Start: 89 @46475 has 2 MA's), (104, 46385), (108, 46352), (119, 46295), (121, 46283), (123, 46259), (126, 46247), (127, 46238), (138, 46178), (147, 46088), (151, 46043), (158, 45983), (167, 45929), (173, 45881), (176, 45860), (198, 45728), (208, 45659), (210, 45653), (212, 45626), (214, 45611), (219, 45569), (224, 45521), (227, 45491), (232, 45464), (266, 45338), (268, 45332), (271, 45305), (281, 45260), (286, 45245), (288, 45239), (301, 45185), (303, 45176), (352, 44948), (358, 44912),

Gene: Philly\_51 Start: 47008, Stop: 45311, Start Num: 64

Candidate Starts for Philly\_51:

(Start: 64 @47008 has 34 MA's), (Start: 103 @46810 has 1 MA's), (108, 46774), (119, 46717), (127, 46660), (134, 46618), (136, 46612), (141, 46555), (146, 46528), (147, 46510), (158, 46405), (171, 46315), (173, 46303), (176, 46282), (183, 46237), (193, 46174), (205, 46090), (209, 46075), (210, 46072), (211, 46069), (212, 46045), (215, 46027), (219, 45988), (224, 45940), (227, 45910), (231, 45886), (238, 45844), (264, 45766), (270, 45739), (277, 45688), (286, 45664), (301, 45616), (312, 45577), (325, 45535), (344, 45430), (352, 45388), (353, 45373),

Gene: Phipps\_52 Start: 47022, Stop: 45226, Start Num: 38

Candidate Starts for Phipps\_52:

(Start: 38 @47022 has 111 MA's), (Start: 69 @46929 has 103 MA's), (Start: 82 @46905 has 11 MA's), (Start: 87 @46848 has 1 MA's), (Start: 89 @46839 has 2 MA's), (104, 46749), (108, 46716), (119, 46659), (121, 46647), (123, 46623), (126, 46611), (127, 46602), (138, 46542), (147, 46452), (151, 46407), (158, 46347), (173, 46245), (176, 46224), (198, 46092), (208, 46023), (210, 46017), (212, 45990), (214, 45975), (219, 45933), (224, 45885), (227, 45855), (232, 45828), (266, 45702), (268, 45696), (271, 45669), (280, 45627), (281, 45624), (286, 45609), (288, 45603), (301, 45549), (303, 45540), (352, 45312), (358, 45276),

Gene: Phleuron\_51 Start: 46663, Stop: 44867, Start Num: 38

Candidate Starts for Phleuron\_51:

(Start: 38 @46663 has 111 MA's), (Start: 69 @46570 has 103 MA's), (Start: 82 @46546 has 11 MA's), (Start: 87 @46489 has 1 MA's), (Start: 89 @46480 has 2 MA's), (104, 46390), (108, 46357), (119, 46300), (121, 46288), (123, 46264), (126, 46252), (127, 46243), (138, 46183), (147, 46093), (151, 46048), (158, 45988), (167, 45934), (173, 45886), (176, 45865), (198, 45733), (208, 45664), (210, 45658), (212, 45631), (214, 45616), (219, 45574), (224, 45526), (227, 45496), (232, 45469), (266, 45343), (268, 45337), (271, 45310), (281, 45265), (286, 45250), (288, 45244), (301, 45190), (303, 45181), (352, 44953), (358, 44917),

Gene: Phlyer\_52 Start: 47897, Stop: 46200, Start Num: 64

Candidate Starts for Phlyer\_52:

(Start: 64 @47897 has 34 MA's), (Start: 103 @47699 has 1 MA's), (108, 47663), (119, 47606), (127, 47549), (134, 47507), (136, 47501), (141, 47444), (146, 47417), (147, 47399), (158, 47294), (171, 47204), (173, 47192), (176, 47171), (183, 47126), (193, 47063), (205, 46979), (209, 46964), (210, 46961), (211, 46958), (212, 46934), (215, 46916), (219, 46877), (224, 46829), (227, 46799), (231, 46775), (238, 46733), (264, 46655), (270, 46628), (277, 46577), (286, 46553), (301, 46505), (312, 46466), (325, 46424), (344, 46319), (352, 46277), (353, 46262),

Gene: PhrankReynolds\_50 Start: 46663, Stop: 44867, Start Num: 38

Candidate Starts for PhrankReynolds\_50:

(Start: 38 @46663 has 111 MA's), (Start: 69 @46570 has 103 MA's), (Start: 82 @46546 has 11 MA's), (Start: 87 @46489 has 1 MA's), (Start: 89 @46480 has 2 MA's), (104, 46390), (108, 46357), (119, 46300), (121, 46288), (123, 46264), (126, 46252), (127, 46243), (138, 46183), (147, 46093), (151,

46048), (158, 45988), (167, 45934), (173, 45886), (176, 45865), (198, 45733), (208, 45664), (210, 45658), (212, 45631), (214, 45616), (219, 45574), (224, 45526), (227, 45496), (232, 45469), (266, 45343), (268, 45337), (271, 45310), (281, 45265), (286, 45250), (288, 45244), (301, 45190), (303, 45181), (352, 44953), (358, 44917),

Gene: PhrodoBaggins\_52 Start: 47170, Stop: 45374, Start Num: 38

Candidate Starts for PhrodoBaggins\_52:

(Start: 38 @47170 has 111 MA's), (Start: 69 @47077 has 103 MA's), (Start: 82 @47053 has 11 MA's), (Start: 87 @46996 has 1 MA's), (Start: 89 @46987 has 2 MA's), (104, 46897), (108, 46864), (119, 46807), (121, 46795), (123, 46771), (126, 46759), (127, 46750), (138, 46690), (147, 46600), (151, 46555), (158, 46495), (167, 46441), (173, 46393), (176, 46372), (198, 46240), (208, 46171), (210, 46165), (212, 46138), (214, 46123), (219, 46081), (224, 46033), (227, 46003), (232, 45976), (266, 45850), (268, 45844), (271, 45817), (281, 45772), (286, 45757), (288, 45751), (301, 45697), (303, 45688), (352, 45460), (358, 45424),

Gene: Phunky\_52 Start: 46946, Stop: 45243, Start Num: 68

Candidate Starts for Phunky\_52:

(Start: 68 @46946 has 66 MA's), (Start: 82 @46922 has 11 MA's), (Start: 87 @46865 has 1 MA's), (Start: 89 @46856 has 2 MA's), (104, 46766), (108, 46733), (119, 46676), (121, 46664), (123, 46640), (126, 46628), (127, 46619), (138, 46559), (147, 46469), (151, 46424), (158, 46364), (167, 46310), (173, 46262), (176, 46241), (198, 46109), (208, 46040), (210, 46034), (212, 46007), (214, 45992), (219, 45950), (224, 45902), (227, 45872), (232, 45845), (266, 45719), (268, 45713), (271, 45686), (281, 45641), (286, 45626), (288, 45620), (301, 45566), (303, 45557), (352, 45329), (358, 45293),

Gene: Piglet\_0052 Start: 47164, Stop: 45368, Start Num: 38

Candidate Starts for Piglet\_0052:

(Start: 38 @47164 has 111 MA's), (Start: 69 @47071 has 103 MA's), (Start: 82 @47047 has 11 MA's), (Start: 87 @46990 has 1 MA's), (Start: 89 @46981 has 2 MA's), (104, 46891), (108, 46858), (119, 46801), (121, 46789), (123, 46765), (126, 46753), (127, 46744), (138, 46684), (147, 46594), (151, 46549), (158, 46489), (167, 46435), (173, 46387), (176, 46366), (198, 46234), (208, 46165), (210, 46159), (212, 46132), (214, 46117), (219, 46075), (224, 46027), (227, 45997), (232, 45970), (266, 45844), (268, 45838), (271, 45811), (281, 45766), (286, 45751), (288, 45745), (301, 45691), (303, 45682), (352, 45454), (358, 45418),

Gene: Pine5\_45 Start: 37875, Stop: 36184, Start Num: 69

Candidate Starts for Pine5\_45:

(Start: 69 @37875 has 103 MA's), (78, 37860), (96, 37725), (108, 37653), (163, 37275), (167, 37242), (168, 37236), (170, 37230), (173, 37194), (193, 37068), (196, 37053), (206, 36981), (212, 36939), (214, 36924), (215, 36921), (219, 36882), (222, 36861), (227, 36804), (229, 36795), (267, 36654), (270, 36639), (273, 36612), (276, 36591), (286, 36564), (303, 36498), (305, 36477), (325, 36396), (327, 36390), (352, 36258), (353, 36243),

Gene: PinheadLarry\_52 Start: 46749, Stop: 44953, Start Num: 38

Candidate Starts for PinheadLarry\_52:

(Start: 38 @46749 has 111 MA's), (Start: 69 @46656 has 103 MA's), (Start: 82 @46632 has 11 MA's), (Start: 87 @46575 has 1 MA's), (Start: 89 @46566 has 2 MA's), (104, 46476), (108, 46443), (119, 46386), (121, 46374), (123, 46350), (126, 46338), (127, 46329), (138, 46269), (147, 46179), (151, 46134), (158, 46074), (167, 46020), (173, 45972), (176, 45951), (198, 45819), (208, 45750), (210, 45744), (212, 45717), (214, 45702), (219, 45660), (224, 45612), (227, 45582), (232, 45555), (266, 45429), (268, 45423), (271, 45396), (281, 45351), (286, 45336), (288, 45330), (301, 45276), (303, 45267), (352, 45039), (358, 45003),

Gene: Pinkman\_51 Start: 46601, Stop: 44805, Start Num: 38

Candidate Starts for Pinkman\_51:

(Start: 38 @46601 has 111 MA's), (Start: 69 @46508 has 103 MA's), (Start: 82 @46484 has 11 MA's), (Start: 87 @46427 has 1 MA's), (Start: 89 @46418 has 2 MA's), (104, 46328), (108, 46295), (119, 46238), (121, 46226), (123, 46202), (126, 46190), (127, 46181), (138, 46121), (147, 46031), (151, 45986), (158, 45926), (167, 45872), (173, 45824), (176, 45803), (198, 45671), (208, 45602), (210, 45596), (212, 45569), (214, 45554), (219, 45512), (224, 45464), (227, 45434), (232, 45407), (266, 45281), (268, 45275), (271, 45248), (281, 45203), (286, 45188), (288, 45182), (301, 45128), (303, 45119), (352, 44891), (358, 44855),

Gene: Pipefish\_54 Start: 48428, Stop: 46731, Start Num: 64

Candidate Starts for Pipefish\_54:

(3, 49013), (4, 48956), (5, 48890), (9, 48857), (17, 48716), (19, 48695), (25, 48620), (Start: 43 @48530 has 7 MA's), (51, 48506), (Start: 54 @48500 has 3 MA's), (55, 48497), (Start: 64 @48428 has 34 MA's), (Start: 103 @48230 has 1 MA's), (108, 48194), (119, 48137), (127, 48080), (134, 48038), (136, 48032), (141, 47975), (146, 47948), (147, 47930), (158, 47825), (171, 47735), (173, 47723), (176, 47702), (183, 47657), (193, 47594), (205, 47510), (209, 47495), (210, 47492), (211, 47489), (212, 47465), (215, 47447), (219, 47408), (224, 47360), (227, 47330), (231, 47306), (238, 47264), (264, 47186), (270, 47159), (273, 47135), (277, 47108), (286, 47084), (301, 47036), (312, 46997), (325, 46955), (344, 46850), (352, 46808), (353, 46793),

Gene: Pipsqueak\_52 Start: 46953, Stop: 45250, Start Num: 68

Candidate Starts for Pipsqueak\_52:

(13, 47286), (15, 47259), (Start: 68 @46953 has 66 MA's), (Start: 82 @46929 has 11 MA's), (Start: 87 @46872 has 1 MA's), (Start: 89 @46863 has 2 MA's), (104, 46773), (108, 46740), (119, 46683), (121, 46671), (123, 46647), (126, 46635), (127, 46626), (138, 46566), (147, 46476), (151, 46431), (158, 46371), (167, 46317), (173, 46269), (176, 46248), (198, 46116), (208, 46047), (210, 46041), (212, 46014), (214, 45999), (219, 45957), (224, 45909), (227, 45879), (232, 45852), (266, 45726), (268, 45720), (271, 45693), (280, 45651), (281, 45648), (286, 45633), (288, 45627), (301, 45573), (303, 45564), (352, 45336), (358, 45300),

Gene: Placalicious\_51 Start: 46739, Stop: 44943, Start Num: 38

Candidate Starts for Placalicious\_51:

(Start: 38 @46739 has 111 MA's), (Start: 69 @46646 has 103 MA's), (Start: 82 @46622 has 11 MA's), (Start: 87 @46565 has 1 MA's), (Start: 89 @46556 has 2 MA's), (104, 46466), (108, 46433), (119, 46376), (121, 46364), (123, 46340), (126, 46328), (127, 46319), (138, 46259), (147, 46169), (151, 46124), (158, 46064), (167, 46010), (173, 45962), (176, 45941), (198, 45809), (208, 45740), (210, 45734), (212, 45707), (214, 45692), (219, 45650), (224, 45602), (227, 45572), (232, 45545), (266, 45419), (268, 45413), (271, 45386), (281, 45341), (286, 45326), (288, 45320), (301, 45266), (303, 45257), (352, 45029), (358, 44993),

Gene: Plmatters\_52 Start: 46949, Stop: 45246, Start Num: 68

Candidate Starts for Plmatters\_52:

(Start: 68 @46949 has 66 MA's), (Start: 82 @46925 has 11 MA's), (Start: 87 @46868 has 1 MA's), (Start: 89 @46859 has 2 MA's), (104, 46769), (108, 46736), (119, 46679), (121, 46667), (123, 46643), (126, 46631), (127, 46622), (138, 46562), (147, 46472), (151, 46427), (158, 46367), (167, 46313), (173, 46265), (176, 46244), (198, 46112), (208, 46043), (210, 46037), (212, 46010), (214, 45995), (219, 45953), (224, 45905), (227, 45875), (232, 45848), (266, 45722), (268, 45716), (271, 45689), (281, 45644), (286, 45629), (288, 45623), (301, 45569), (303, 45560), (352, 45332), (358, 45296),

Gene: Podrick\_52 Start: 46940, Stop: 45237, Start Num: 68

Candidate Starts for Podrick\_52:

(Start: 68 @46940 has 66 MA's), (Start: 82 @46916 has 11 MA's), (Start: 87 @46859 has 1 MA's), (Start: 89 @46850 has 2 MA's), (104, 46760), (108, 46727), (119, 46670), (121, 46658), (123, 46634),

(126, 46622), (127, 46613), (138, 46553), (147, 46463), (151, 46418), (158, 46358), (173, 46256), (176, 46235), (198, 46103), (208, 46034), (210, 46028), (212, 46001), (214, 45986), (219, 45944), (224, 45896), (227, 45866), (232, 45839), (266, 45713), (268, 45707), (271, 45680), (280, 45638), (281, 45635), (286, 45620), (288, 45614), (301, 45560), (303, 45551), (352, 45323), (358, 45287),

Gene: Pops\_52 Start: 46964, Stop: 45261, Start Num: 68

Candidate Starts for Pops\_52:

(Start: 68 @46964 has 66 MA's), (Start: 82 @46940 has 11 MA's), (Start: 87 @46883 has 1 MA's), (Start: 89 @46874 has 2 MA's), (104, 46784), (108, 46751), (119, 46694), (121, 46682), (123, 46658), (126, 46646), (127, 46637), (138, 46577), (147, 46487), (151, 46442), (158, 46382), (173, 46280), (176, 46259), (198, 46127), (208, 46058), (210, 46052), (212, 46025), (214, 46010), (219, 45968), (224, 45920), (227, 45890), (232, 45863), (266, 45737), (268, 45731), (271, 45704), (280, 45662), (281, 45659), (286, 45644), (288, 45638), (301, 45584), (303, 45575), (352, 45347), (358, 45311),

Gene: Poster\_46 Start: 46393, Stop: 44678, Start Num: 69

Candidate Starts for Poster\_46:

(Start: 69 @46393 has 103 MA's), (105, 46201), (108, 46171), (111, 46150), (119, 46114), (123, 46078), (125, 46069), (145, 45928), (147, 45907), (148, 45886), (158, 45808), (163, 45787), (167, 45754), (169, 45745), (172, 45709), (173, 45706), (177, 45682), (196, 45565), (198, 45553), (202, 45529), (208, 45484), (210, 45478), (212, 45451), (213, 45439), (214, 45436), (219, 45394), (224, 45346), (227, 45316), (237, 45265), (251, 45217), (262, 45181), (266, 45160), (267, 45157), (273, 45118), (280, 45082), (285, 45067), (286, 45064), (290, 45055), (295, 45037), (298, 45010), (303, 44989), (329, 44878), (352, 44755),

Gene: Potter\_51 Start: 46676, Stop: 44973, Start Num: 69

Candidate Starts for Potter\_51:

(Start: 69 @46676 has 103 MA's), (Start: 82 @46652 has 11 MA's), (Start: 87 @46595 has 1 MA's), (Start: 89 @46586 has 2 MA's), (104, 46496), (108, 46463), (119, 46406), (121, 46394), (123, 46370), (126, 46358), (127, 46349), (138, 46289), (147, 46199), (151, 46154), (158, 46094), (173, 45992), (176, 45971), (198, 45839), (208, 45770), (210, 45764), (212, 45737), (214, 45722), (219, 45680), (224, 45632), (227, 45602), (232, 45575), (266, 45449), (268, 45443), (271, 45416), (280, 45374), (281, 45371), (286, 45356), (288, 45350), (301, 45296), (303, 45287), (352, 45059), (358, 45023),

Gene: Prickles\_52 Start: 46940, Stop: 45237, Start Num: 69

Candidate Starts for Prickles\_52:

(Start: 69 @46940 has 103 MA's), (Start: 82 @46916 has 11 MA's), (Start: 87 @46859 has 1 MA's), (Start: 89 @46850 has 2 MA's), (104, 46760), (108, 46727), (119, 46670), (121, 46658), (123, 46634), (126, 46622), (127, 46613), (138, 46553), (147, 46463), (151, 46418), (158, 46358), (167, 46304), (173, 46256), (176, 46235), (198, 46103), (208, 46034), (210, 46028), (212, 46001), (214, 45986), (219, 45944), (224, 45896), (227, 45866), (232, 45839), (266, 45713), (268, 45707), (271, 45680), (280, 45638), (281, 45635), (286, 45620), (288, 45614), (301, 45560), (303, 45551), (352, 45323), (358, 45287),

Gene: Prince\_47 Start: 47599, Stop: 45887, Start Num: 69

Candidate Starts for Prince\_47:

(Start: 69 @47599 has 103 MA's), (102, 47416), (108, 47377), (111, 47356), (123, 47287), (138, 47206), (145, 47137), (147, 47116), (158, 47017), (163, 46996), (167, 46963), (169, 46954), (172, 46918), (173, 46915), (177, 46891), (194, 46780), (196, 46774), (198, 46762), (208, 46693), (210, 46687), (212, 46660), (213, 46648), (214, 46645), (219, 46603), (224, 46555), (227, 46525), (262, 46390), (265, 46375), (266, 46369), (267, 46366), (272, 46333), (273, 46327), (274, 46318), (280, 46291), (285, 46276), (286, 46273), (290, 46264), (295, 46246), (298, 46219), (303, 46198), (329, 46087), (352, 45964), (359, 45925), (362, 45913),

Gene: ProfessorX\_52 Start: 46860, Stop: 45238, Start Num: 87

Candidate Starts for ProfessorX\_52:

(Start: 68 @46941 has 66 MA's), (Start: 82 @46917 has 11 MA's), (Start: 87 @46860 has 1 MA's), (Start: 89 @46851 has 2 MA's), (104, 46761), (108, 46728), (119, 46671), (121, 46659), (123, 46635), (126, 46623), (127, 46614), (138, 46554), (147, 46464), (151, 46419), (158, 46359), (173, 46257), (176, 46236), (198, 46104), (208, 46035), (210, 46029), (212, 46002), (214, 45987), (219, 45945), (224, 45897), (227, 45867), (232, 45840), (266, 45714), (268, 45708), (271, 45681), (280, 45639), (281, 45636), (286, 45621), (288, 45615), (301, 45561), (303, 45552), (352, 45324), (358, 45288),

Gene: Psycho\_64 Start: 44389, Stop: 46104, Start Num: 77

Candidate Starts for Psycho\_64:

(Start: 77 @44389 has 31 MA's), (92, 44482), (96, 44524), (Start: 103 @44560 has 1 MA's), (104, 44563), (107, 44587), (108, 44596), (116, 44635), (119, 44653), (127, 44710), (131, 44737), (132, 44740), (140, 44803), (147, 44863), (150, 44893), (151, 44902), (161, 44977), (162, 44980), (171, 45052), (172, 45061), (173, 45064), (181, 45130), (182, 45133), (183, 45136), (185, 45151), (186, 45166), (189, 45181), (196, 45211), (198, 45223), (212, 45325), (213, 45337), (214, 45340), (215, 45343), (217, 45364), (219, 45382), (224, 45430), (229, 45463), (233, 45490), (265, 45619), (270, 45643), (275, 45688), (276, 45691), (286, 45724), (300, 45748), (320, 45802), (322, 45808), (327, 45832), (352, 45949), (353, 45964), (361, 45991), (364, 46015),

Gene: Puhltonio\_52 Start: 46950, Stop: 45247, Start Num: 69

Candidate Starts for Puhltonio\_52:

(Start: 69 @46950 has 103 MA's), (Start: 82 @46926 has 11 MA's), (Start: 87 @46869 has 1 MA's), (Start: 89 @46860 has 2 MA's), (104, 46770), (108, 46737), (119, 46680), (121, 46668), (123, 46644), (126, 46632), (127, 46623), (138, 46563), (147, 46473), (151, 46428), (158, 46368), (167, 46314), (173, 46266), (176, 46245), (198, 46113), (208, 46044), (210, 46038), (212, 46011), (214, 45996), (219, 45954), (224, 45906), (227, 45876), (232, 45849), (266, 45723), (268, 45717), (271, 45690), (280, 45648), (281, 45645), (286, 45630), (288, 45624), (301, 45570), (303, 45561), (352, 45333), (358, 45297),

Gene: Puppies\_33 Start: 26753, Stop: 25110, Start Num: 79

Candidate Starts for Puppies\_33:

(71, 26765), (Start: 79 @26753 has 7 MA's), (84, 26714), (85, 26711), (86, 26705), (95, 26630), (102, 26585), (108, 26546), (118, 26498), (119, 26495), (127, 26438), (135, 26393), (142, 26312), (144, 26309), (147, 26285), (165, 26165), (166, 26147), (169, 26129), (173, 26090), (175, 26078), (177, 26066), (181, 26030), (183, 26024), (185, 26009), (194, 25955), (213, 25823), (215, 25817), (219, 25778), (235, 25658), (250, 25592), (255, 25580), (264, 25556), (286, 25457), (325, 25313), (352, 25175), (363, 25121),

Gene: QueenBeane\_52 Start: 46940, Stop: 45237, Start Num: 69

Candidate Starts for QueenBeane\_52:

(Start: 69 @46940 has 103 MA's), (Start: 82 @46916 has 11 MA's), (Start: 87 @46859 has 1 MA's), (Start: 89 @46850 has 2 MA's), (104, 46760), (108, 46727), (119, 46670), (121, 46658), (123, 46634), (126, 46622), (127, 46613), (138, 46553), (147, 46463), (151, 46418), (158, 46358), (167, 46304), (173, 46256), (176, 46235), (198, 46103), (208, 46034), (210, 46028), (212, 46001), (214, 45986), (219, 45944), (224, 45896), (227, 45866), (232, 45839), (266, 45713), (268, 45707), (271, 45680), (280, 45638), (281, 45635), (286, 45620), (288, 45614), (301, 45560), (303, 45551), (352, 45323), (358, 45287),

Gene: QueenPie\_46 Start: 47511, Stop: 45796, Start Num: 69

Candidate Starts for QueenPie\_46:

(Start: 69 @47511 has 103 MA's), (105, 47319), (108, 47289), (109, 47277), (119, 47232), (123, 47196), (125, 47187), (145, 47046), (147, 47025), (148, 47004), (158, 46926), (163, 46905), (167, 46872), (169, 46863), (172, 46827), (173, 46824), (177, 46800), (196, 46683), (198, 46671), (200,

46662), (202, 46647), (208, 46602), (210, 46596), (212, 46569), (213, 46557), (214, 46554), (219, 46512), (224, 46464), (227, 46434), (237, 46383), (251, 46335), (262, 46299), (266, 46278), (267, 46275), (273, 46236), (277, 46209), (280, 46200), (285, 46185), (286, 46182), (290, 46173), (295, 46155), (298, 46128), (303, 46107), (329, 45996), (349, 45888), (352, 45873), (359, 45834), (362, 45822),

Gene: Quesadilla\_55 Start: 49726, Stop: 47888, Start Num: 30

Candidate Starts for Quesadilla\_55:

(1, 50506), (2, 50344), (Start: 30 @49726 has 1 MA's), (31, 49723), (37, 49696), (Start: 70 @49603 has 10 MA's), (95, 49471), (Start: 103 @49423 has 1 MA's), (108, 49387), (119, 49330), (123, 49294), (145, 49144), (147, 49123), (148, 49102), (167, 48970), (172, 48925), (173, 48922), (177, 48898), (185, 48841), (196, 48781), (198, 48769), (210, 48694), (212, 48667), (213, 48655), (214, 48652), (219, 48610), (224, 48562), (227, 48532), (237, 48481), (262, 48403), (266, 48382), (275, 48322), (280, 48304), (285, 48289), (286, 48286), (332, 48079), (349, 47980), (352, 47965), (362, 47914),

Gene: Quisquilliae\_52 Start: 47070, Stop: 45274, Start Num: 38

Candidate Starts for Quisquilliae\_52:

(Start: 38 @47070 has 111 MA's), (Start: 69 @46977 has 103 MA's), (Start: 82 @46953 has 11 MA's), (Start: 87 @46896 has 1 MA's), (Start: 89 @46887 has 2 MA's), (104, 46797), (108, 46764), (119, 46707), (121, 46695), (123, 46671), (126, 46659), (127, 46650), (138, 46590), (147, 46500), (151, 46455), (158, 46395), (173, 46293), (176, 46272), (198, 46140), (208, 46071), (210, 46065), (212, 46038), (214, 46023), (219, 45981), (224, 45933), (227, 45903), (232, 45876), (266, 45750), (268, 45744), (271, 45717), (280, 45675), (281, 45672), (286, 45657), (288, 45651), (301, 45597), (303, 45588), (352, 45360), (358, 45324),

Gene: Qyrzula\_48 Start: 46695, Stop: 44980, Start Num: 67

Candidate Starts for Qyrzula\_48:

(10, 47124), (12, 47088), (14, 47016), (20, 46950), (Start: 67 @46695 has 49 MA's), (75, 46683), (102, 46512), (Start: 103 @46509 has 1 MA's), (108, 46473), (109, 46461), (111, 46452), (119, 46416), (120, 46413), (123, 46380), (134, 46317), (147, 46209), (151, 46170), (163, 46089), (167, 46056), (169, 46047), (173, 46008), (176, 45987), (177, 45984), (183, 45942), (185, 45927), (186, 45912), (193, 45882), (198, 45855), (203, 45807), (209, 45783), (210, 45780), (212, 45753), (213, 45741), (215, 45735), (219, 45696), (224, 45648), (227, 45618), (228, 45612), (237, 45567), (251, 45492), (253, 45480), (261, 45453), (262, 45450), (265, 45435), (275, 45369), (286, 45336), (309, 45258), (318, 45228), (319, 45225), (322, 45213), (331, 45174), (344, 45096), (345, 45093), (352, 45054), (366, 44988),

Gene: RagingRooster\_51 Start: 46842, Stop: 45145, Start Num: 64

Candidate Starts for RagingRooster\_51:

(Start: 64 @46842 has 34 MA's), (Start: 103 @46644 has 1 MA's), (108, 46608), (119, 46551), (127, 46494), (134, 46452), (141, 46389), (146, 46362), (147, 46344), (158, 46239), (171, 46149), (173, 46137), (176, 46116), (183, 46071), (193, 46008), (205, 45924), (209, 45909), (210, 45906), (211, 45903), (212, 45879), (215, 45861), (219, 45822), (224, 45774), (227, 45744), (231, 45720), (238, 45678), (264, 45600), (270, 45573), (275, 45531), (277, 45522), (286, 45498), (312, 45411), (325, 45369), (344, 45264), (352, 45222), (353, 45207), (356, 45189),

Gene: RainyPolka\_53 Start: 44180, Stop: 46018, Start Num: 77

Candidate Starts for RainyPolka\_53:

(Start: 77 @44180 has 31 MA's), (86, 44225), (90, 44261), (92, 44267), (94, 44294), (102, 44354), (104, 44360), (111, 44414), (124, 44489), (131, 44534), (137, 44558), (143, 44621), (147, 44645), (149, 44672), (150, 44684), (153, 44705), (155, 44732), (158, 44753), (160, 44762), (165, 44780), (184, 44930), (185, 44939), (187, 44957), (191, 44975), (195, 44999), (209, 45086), (210, 45089), (213, 45128), (219, 45173), (220, 45176), (230, 45266), (283, 45548), (290, 45566), (293, 45575),



(298, 45653), (310, 45722), (316, 45749), (324, 45785), (328, 45800), (348, 45902), (354, 45950), (357, 45959), (362, 45977),

Gene: Rando14\_67 Start: 45066, Stop: 46760, Start Num: 77

Candidate Starts for Rando14\_67:

(Start: 77 @45066 has 31 MA's), (91, 45156), (92, 45159), (104, 45240), (107, 45264), (108, 45273), (116, 45312), (127, 45387), (131, 45414), (132, 45417), (140, 45480), (147, 45540), (150, 45570), (151, 45579), (158, 45639), (162, 45657), (172, 45738), (173, 45741), (181, 45807), (182, 45810), (183, 45813), (185, 45828), (186, 45843), (196, 45888), (198, 45900), (212, 46002), (213, 46014), (214, 46017), (217, 46041), (219, 46059), (223, 46104), (224, 46107), (225, 46110), (233, 46167), (253, 46251), (265, 46293), (275, 46362), (276, 46365), (286, 46398), (290, 46407), (313, 46467), (320, 46476), (322, 46482), (327, 46506), (339, 46539), (352, 46623), (361, 46665), (362, 46674), (363, 46677), (364, 46689),

Gene: RawrgerThat\_48 Start: 47447, Stop: 45738, Start Num: 69

Candidate Starts for RawrgerThat\_48:

(Start: 69 @47447 has 103 MA's), (102, 47264), (108, 47225), (111, 47204), (123, 47135), (138, 47054), (145, 46985), (147, 46964), (158, 46865), (163, 46844), (167, 46811), (169, 46802), (172, 46766), (173, 46763), (177, 46739), (194, 46628), (196, 46622), (198, 46610), (208, 46541), (210, 46535), (212, 46508), (213, 46496), (214, 46493), (219, 46451), (224, 46403), (227, 46373), (237, 46322), (262, 46241), (265, 46226), (266, 46220), (267, 46217), (272, 46184), (273, 46178), (274, 46169), (280, 46142), (285, 46127), (286, 46124), (290, 46115), (295, 46097), (298, 46070), (303, 46049), (329, 45938), (352, 45815), (359, 45776), (362, 45764),

Gene: RedMaple\_52 Start: 47184, Stop: 45388, Start Num: 38

Candidate Starts for RedMaple\_52:

(Start: 38 @47184 has 111 MA's), (Start: 69 @47091 has 103 MA's), (Start: 82 @47067 has 11 MA's), (Start: 87 @47010 has 1 MA's), (Start: 89 @47001 has 2 MA's), (104, 46911), (108, 46878), (119, 46821), (121, 46809), (123, 46785), (126, 46773), (127, 46764), (138, 46704), (147, 46614), (151, 46569), (158, 46509), (167, 46455), (173, 46407), (176, 46386), (198, 46254), (208, 46185), (210, 46179), (212, 46152), (214, 46137), (219, 46095), (224, 46047), (227, 46017), (232, 45990), (266, 45864), (268, 45858), (271, 45831), (281, 45786), (286, 45771), (288, 45765), (301, 45711), (303, 45702), (352, 45474), (358, 45438),

Gene: Reprobate\_51 Start: 47968, Stop: 46274, Start Num: 70

Candidate Starts for Reprobate\_51:

(Start: 70 @47968 has 10 MA's), (91, 47869), (Start: 103 @47788 has 1 MA's), (108, 47752), (119, 47698), (123, 47662), (134, 47599), (138, 47581), (145, 47512), (147, 47491), (167, 47338), (172, 47293), (173, 47290), (177, 47266), (207, 47074), (208, 47068), (210, 47062), (212, 47035), (213, 47023), (214, 47020), (219, 46978), (220, 46975), (224, 46930), (227, 46900), (232, 46873), (237, 46849), (257, 46783), (259, 46780), (262, 46768), (266, 46747), (267, 46744), (273, 46705), (275, 46687), (280, 46669), (286, 46651), (288, 46645), (295, 46627), (325, 46492), (337, 46450), (349, 46369), (352, 46354), (362, 46303), (367, 46288),

Gene: Rhinoforte\_51 Start: 46697, Stop: 44982, Start Num: 67

Candidate Starts for Rhinoforte\_51:

(10, 47126), (12, 47090), (14, 47018), (20, 46952), (Start: 67 @46697 has 49 MA's), (75, 46685), (102, 46514), (Start: 103 @46511 has 1 MA's), (108, 46475), (109, 46463), (111, 46454), (119, 46418), (120, 46415), (123, 46382), (134, 46319), (147, 46211), (151, 46172), (163, 46091), (167, 46058), (169, 46049), (173, 46010), (176, 45989), (177, 45986), (183, 45944), (185, 45929), (186, 45914), (193, 45884), (198, 45857), (203, 45809), (209, 45785), (210, 45782), (212, 45755), (213, 45743), (215, 45737), (219, 45698), (224, 45650), (227, 45620), (228, 45614), (237, 45569), (251, 45494), (253, 45482), (261, 45455), (262, 45452), (265, 45437), (275, 45371), (286, 45338), (309, 45260),

(318, 45230), (319, 45227), (322, 45215), (331, 45176), (344, 45098), (345, 45095), (352, 45056), (366, 44990),

Gene: Rich\_52 Start: 49401, Stop: 47707, Start Num: 70

Candidate Starts for Rich\_52:

(Start: 70 @49401 has 10 MA's), (Start: 82 @49374 has 11 MA's), (92, 49299), (108, 49185), (123, 49095), (134, 49032), (138, 49014), (145, 48945), (147, 48924), (163, 48804), (167, 48771), (173, 48723), (176, 48702), (196, 48582), (202, 48546), (207, 48507), (208, 48501), (210, 48495), (211, 48492), (212, 48468), (213, 48456), (214, 48453), (219, 48411), (224, 48363), (227, 48333), (259, 48210), (262, 48198), (266, 48177), (267, 48174), (269, 48162), (273, 48135), (280, 48099), (286, 48081), (337, 47880), (352, 47784),

Gene: Ricotta\_51 Start: 46756, Stop: 44960, Start Num: 38

Candidate Starts for Ricotta\_51:

(Start: 38 @46756 has 111 MA's), (Start: 69 @46663 has 103 MA's), (Start: 82 @46639 has 11 MA's), (Start: 87 @46582 has 1 MA's), (Start: 89 @46573 has 2 MA's), (104, 46483), (108, 46450), (119, 46393), (121, 46381), (123, 46357), (126, 46345), (127, 46336), (138, 46276), (147, 46186), (151, 46141), (158, 46081), (173, 45979), (176, 45958), (198, 45826), (208, 45757), (210, 45751), (212, 45724), (214, 45709), (219, 45667), (224, 45619), (227, 45589), (232, 45562), (266, 45436), (268, 45430), (271, 45403), (280, 45361), (281, 45358), (286, 45343), (288, 45337), (301, 45283), (303, 45274), (352, 45046), (358, 45010),

Gene: Riggan\_52 Start: 46936, Stop: 45233, Start Num: 68

Candidate Starts for Riggan\_52:

(Start: 68 @46936 has 66 MA's), (Start: 82 @46912 has 11 MA's), (Start: 87 @46855 has 1 MA's), (Start: 89 @46846 has 2 MA's), (104, 46756), (108, 46723), (119, 46666), (121, 46654), (123, 46630), (126, 46618), (127, 46609), (138, 46549), (147, 46459), (151, 46414), (158, 46354), (167, 46300), (173, 46252), (176, 46231), (198, 46099), (208, 46030), (210, 46024), (212, 45997), (214, 45982), (219, 45940), (224, 45892), (227, 45862), (232, 45835), (266, 45709), (268, 45703), (271, 45676), (281, 45631), (286, 45616), (288, 45610), (301, 45556), (303, 45547), (352, 45319), (358, 45283),

Gene: Rimu\_54 Start: 46586, Stop: 44973, Start Num: 89

Candidate Starts for Rimu\_54:

(Start: 69 @46676 has 103 MA's), (Start: 82 @46652 has 11 MA's), (Start: 87 @46595 has 1 MA's), (Start: 89 @46586 has 2 MA's), (104, 46496), (108, 46463), (119, 46406), (121, 46394), (123, 46370), (126, 46358), (127, 46349), (138, 46289), (147, 46199), (151, 46154), (158, 46094), (167, 46040), (173, 45992), (176, 45971), (198, 45839), (208, 45770), (210, 45764), (212, 45737), (214, 45722), (219, 45680), (224, 45632), (227, 45602), (232, 45575), (266, 45449), (268, 45443), (271, 45416), (280, 45374), (281, 45371), (286, 45356), (288, 45350), (301, 45296), (303, 45287), (352, 45059), (358, 45023),

Gene: Rinke\_52 Start: 48706, Stop: 46910, Start Num: 48

Candidate Starts for Rinke\_52:

(Start: 48 @48706 has 1 MA's), (Start: 69 @48625 has 103 MA's), (92, 48520), (93, 48517), (106, 48418), (108, 48406), (123, 48316), (127, 48295), (131, 48268), (134, 48253), (145, 48166), (147, 48145), (167, 47992), (169, 47983), (173, 47944), (176, 47923), (177, 47920), (180, 47905), (185, 47863), (196, 47803), (198, 47791), (210, 47716), (212, 47689), (213, 47677), (214, 47674), (219, 47632), (221, 47617), (227, 47554), (237, 47503), (266, 47401), (272, 47365), (275, 47341), (279, 47326), (280, 47323), (285, 47308), (286, 47305), (303, 47215), (322, 47143), (329, 47110), (332, 47101), (352, 46987),

Gene: Rita1961\_53 Start: 47603, Stop: 45906, Start Num: 64

Candidate Starts for Rita1961\_53:

(Start: 64 @47603 has 34 MA's), (Start: 103 @47405 has 1 MA's), (108, 47369), (119, 47312), (127, 47255), (134, 47213), (136, 47207), (141, 47150), (146, 47123), (147, 47105), (158, 47000), (171, 46910), (173, 46898), (176, 46877), (183, 46832), (193, 46769), (205, 46685), (209, 46670), (210, 46667), (211, 46664), (212, 46640), (215, 46622), (219, 46583), (224, 46535), (227, 46505), (231, 46481), (238, 46439), (264, 46361), (270, 46334), (277, 46283), (286, 46259), (301, 46211), (312, 46172), (325, 46130), (344, 46025), (352, 45983), (353, 45968),

Gene: Robyn\_51 Start: 46634, Stop: 44829, Start Num: 38

Candidate Starts for Robyn\_51:

(Start: 38 @46634 has 111 MA's), (Start: 69 @46532 has 103 MA's), (Start: 82 @46508 has 11 MA's), (Start: 87 @46451 has 1 MA's), (Start: 89 @46442 has 2 MA's), (104, 46352), (108, 46319), (119, 46262), (121, 46250), (123, 46226), (126, 46214), (127, 46205), (138, 46145), (147, 46055), (151, 46010), (158, 45950), (173, 45848), (176, 45827), (198, 45695), (208, 45626), (210, 45620), (212, 45593), (214, 45578), (219, 45536), (224, 45488), (227, 45458), (232, 45431), (266, 45305), (268, 45299), (271, 45272), (280, 45230), (281, 45227), (286, 45212), (288, 45206), (301, 45152), (303, 45143), (352, 44915), (358, 44879),

Gene: Roliet\_52 Start: 46949, Stop: 45246, Start Num: 69

Candidate Starts for Roliet\_52:

(Start: 38 @47042 has 111 MA's), (Start: 69 @46949 has 103 MA's), (Start: 82 @46925 has 11 MA's), (Start: 87 @46868 has 1 MA's), (Start: 89 @46859 has 2 MA's), (104, 46769), (108, 46736), (119, 46679), (121, 46667), (123, 46643), (126, 46631), (127, 46622), (138, 46562), (147, 46472), (151, 46427), (158, 46367), (167, 46313), (173, 46265), (176, 46244), (198, 46112), (208, 46043), (210, 46037), (212, 46010), (214, 45995), (219, 45953), (224, 45905), (227, 45875), (232, 45848), (266, 45722), (268, 45716), (271, 45689), (281, 45644), (286, 45629), (288, 45623), (301, 45569), (303, 45560), (352, 45332), (358, 45296),

Gene: RomaT\_52 Start: 47751, Stop: 46054, Start Num: 64

Candidate Starts for RomaT\_52:

(Start: 64 @47751 has 34 MA's), (Start: 103 @47553 has 1 MA's), (108, 47517), (119, 47460), (127, 47403), (134, 47361), (136, 47355), (141, 47298), (146, 47271), (147, 47253), (158, 47148), (171, 47058), (173, 47046), (176, 47025), (183, 46980), (193, 46917), (205, 46833), (209, 46818), (210, 46815), (211, 46812), (212, 46788), (215, 46770), (219, 46731), (224, 46683), (227, 46653), (231, 46629), (238, 46587), (264, 46509), (270, 46482), (277, 46431), (286, 46407), (312, 46320), (325, 46278), (344, 46173), (347, 46158), (352, 46131), (353, 46116),

Gene: Roscoe\_53 Start: 47186, Stop: 45483, Start Num: 68

Candidate Starts for Roscoe\_53:

(Start: 68 @47186 has 66 MA's), (Start: 82 @47162 has 11 MA's), (Start: 87 @47105 has 1 MA's), (Start: 89 @47096 has 2 MA's), (104, 47006), (108, 46973), (119, 46916), (121, 46904), (123, 46880), (126, 46868), (127, 46859), (138, 46799), (147, 46709), (151, 46664), (158, 46604), (173, 46502), (176, 46481), (198, 46349), (208, 46280), (210, 46274), (212, 46247), (214, 46232), (219, 46190), (224, 46142), (227, 46112), (232, 46085), (266, 45959), (268, 45953), (271, 45926), (280, 45884), (281, 45881), (286, 45866), (288, 45860), (301, 45806), (303, 45797), (352, 45569), (358, 45533),

Gene: Rosebush\_50 Start: 46709, Stop: 44994, Start Num: 67

Candidate Starts for Rosebush\_50:

(10, 47138), (12, 47102), (14, 47030), (16, 47015), (20, 46964), (Start: 67 @46709 has 49 MA's), (75, 46697), (102, 46526), (Start: 103 @46523 has 1 MA's), (108, 46487), (109, 46475), (111, 46466), (119, 46430), (120, 46427), (123, 46394), (134, 46331), (147, 46223), (151, 46184), (163, 46103), (167, 46070), (169, 46061), (173, 46022), (176, 46001), (177, 45998), (183, 45956), (185, 45941), (186, 45926), (193, 45896), (198, 45869), (203, 45821), (209, 45797), (210, 45794), (212, 45767), (213, 45755), (215, 45749), (219, 45710), (224, 45662), (227, 45632), (228, 45626), (237, 45581),

(251, 45506), (253, 45494), (261, 45467), (262, 45464), (265, 45449), (275, 45383), (286, 45350), (309, 45272), (318, 45242), (319, 45239), (322, 45227), (331, 45188), (344, 45110), (352, 45068), (366, 45002),

Gene: Roy17\_52 Start: 46640, Stop: 44937, Start Num: 68

Candidate Starts for Roy17\_52:

(Start: 68 @46640 has 66 MA's), (Start: 82 @46616 has 11 MA's), (Start: 87 @46559 has 1 MA's), (Start: 89 @46550 has 2 MA's), (104, 46460), (108, 46427), (119, 46370), (121, 46358), (123, 46334), (126, 46322), (127, 46313), (138, 46253), (147, 46163), (151, 46118), (158, 46058), (167, 46004), (173, 45956), (176, 45935), (198, 45803), (208, 45734), (210, 45728), (212, 45701), (214, 45686), (219, 45644), (224, 45596), (227, 45566), (232, 45539), (266, 45413), (268, 45407), (271, 45380), (281, 45335), (286, 45320), (288, 45314), (301, 45260), (303, 45251), (352, 45023), (358, 44987),

Gene: SDcharge11\_53 Start: 46928, Stop: 45225, Start Num: 68

Candidate Starts for SDcharge11\_53:

(Start: 68 @46928 has 66 MA's), (Start: 82 @46904 has 11 MA's), (Start: 87 @46847 has 1 MA's), (Start: 89 @46838 has 2 MA's), (104, 46748), (108, 46715), (119, 46658), (121, 46646), (123, 46622), (126, 46610), (127, 46601), (138, 46541), (147, 46451), (151, 46406), (158, 46346), (173, 46244), (176, 46223), (198, 46091), (208, 46022), (210, 46016), (212, 45989), (214, 45974), (219, 45932), (224, 45884), (227, 45854), (232, 45827), (266, 45701), (268, 45695), (271, 45668), (281, 45623), (286, 45608), (288, 45602), (301, 45548), (303, 45539), (352, 45311), (358, 45275),

Gene: Sabella\_50 Start: 46560, Stop: 44848, Start Num: 67

Candidate Starts for Sabella\_50:

(10, 46989), (12, 46953), (14, 46881), (20, 46815), (Start: 67 @46560 has 49 MA's), (75, 46548), (102, 46377), (Start: 103 @46374 has 1 MA's), (108, 46338), (109, 46326), (111, 46317), (119, 46281), (120, 46278), (123, 46245), (134, 46182), (147, 46074), (151, 46035), (163, 45954), (167, 45921), (169, 45912), (173, 45873), (176, 45852), (177, 45849), (183, 45807), (185, 45792), (186, 45777), (193, 45747), (198, 45720), (202, 45696), (203, 45672), (209, 45648), (210, 45645), (212, 45618), (213, 45606), (215, 45600), (219, 45561), (224, 45513), (227, 45483), (228, 45477), (237, 45432), (251, 45357), (253, 45345), (261, 45321), (262, 45318), (265, 45303), (275, 45237), (286, 45204), (309, 45126), (318, 45096), (319, 45093), (322, 45081), (331, 45042), (344, 44964), (345, 44961), (352, 44922), (366, 44856),

Gene: Saguaro\_54 Start: 49074, Stop: 47392, Start Num: 69

Candidate Starts for Saguaro\_54:

(22, 49290), (Start: 54 @49146 has 3 MA's), (Start: 69 @49074 has 103 MA's), (92, 48972), (102, 48897), (108, 48858), (119, 48804), (123, 48768), (134, 48705), (145, 48618), (147, 48597), (148, 48576), (158, 48498), (163, 48477), (167, 48444), (172, 48399), (173, 48396), (176, 48375), (185, 48315), (210, 48168), (212, 48141), (213, 48129), (214, 48126), (219, 48084), (224, 48036), (227, 48006), (233, 47970), (262, 47883), (265, 47868), (266, 47862), (267, 47859), (275, 47802), (280, 47784), (286, 47766), (288, 47760), (295, 47742), (301, 47706), (322, 47622), (329, 47589), (332, 47580), (349, 47481), (352, 47466), (362, 47415), (363, 47412),

Gene: Salete\_54 Start: 44647, Stop: 46485, Start Num: 77

Candidate Starts for Salete\_54:

(Start: 77 @44647 has 31 MA's), (86, 44692), (90, 44728), (92, 44734), (94, 44761), (102, 44821), (111, 44881), (123, 44953), (124, 44956), (126, 44965), (131, 45001), (137, 45025), (140, 45067), (143, 45088), (147, 45112), (149, 45139), (153, 45172), (155, 45199), (165, 45247), (168, 45277), (184, 45397), (185, 45406), (187, 45424), (191, 45442), (209, 45553), (210, 45556), (213, 45595), (219, 45640), (220, 45643), (230, 45733), (283, 46015), (293, 46042), (316, 46216), (324, 46252), (328, 46267), (348, 46369), (354, 46417), (357, 46426),

Gene: Samaymay\_52 Start: 46940, Stop: 45237, Start Num: 69

Candidate Starts for Samaymay\_52:

(Start: 69 @46940 has 103 MA's), (Start: 82 @46916 has 11 MA's), (Start: 87 @46859 has 1 MA's), (Start: 89 @46850 has 2 MA's), (104, 46760), (108, 46727), (119, 46670), (121, 46658), (123, 46634), (126, 46622), (127, 46613), (138, 46553), (147, 46463), (151, 46418), (158, 46358), (167, 46304), (173, 46256), (176, 46235), (198, 46103), (208, 46034), (210, 46028), (212, 46001), (214, 45986), (219, 45944), (224, 45896), (227, 45866), (232, 45839), (266, 45713), (268, 45707), (271, 45680), (280, 45638), (281, 45635), (286, 45620), (288, 45614), (301, 45560), (303, 45551), (352, 45323), (358, 45287),

Gene: SassyCat97\_51 Start: 46667, Stop: 44964, Start Num: 69

Candidate Starts for SassyCat97\_51:

(Start: 69 @46667 has 103 MA's), (Start: 82 @46643 has 11 MA's), (Start: 87 @46586 has 1 MA's), (Start: 89 @46577 has 2 MA's), (104, 46487), (108, 46454), (119, 46397), (121, 46385), (123, 46361), (126, 46349), (127, 46340), (138, 46280), (147, 46190), (151, 46145), (158, 46085), (167, 46031), (173, 45983), (176, 45962), (198, 45830), (208, 45761), (210, 45755), (212, 45728), (214, 45713), (219, 45671), (224, 45623), (227, 45593), (232, 45566), (266, 45440), (268, 45434), (271, 45407), (280, 45365), (281, 45362), (286, 45347), (288, 45341), (301, 45287), (303, 45278), (352, 45050), (358, 45014),

Gene: Schadenfreude\_52 Start: 46733, Stop: 45030, Start Num: 68

Candidate Starts for Schadenfreude\_52:

(Start: 68 @46733 has 66 MA's), (Start: 82 @46709 has 11 MA's), (Start: 87 @46652 has 1 MA's), (Start: 89 @46643 has 2 MA's), (104, 46553), (108, 46520), (119, 46463), (121, 46451), (123, 46427), (126, 46415), (127, 46406), (138, 46346), (147, 46256), (151, 46211), (158, 46151), (173, 46049), (176, 46028), (198, 45896), (208, 45827), (210, 45821), (212, 45794), (214, 45779), (219, 45737), (224, 45689), (227, 45659), (232, 45632), (266, 45506), (268, 45500), (271, 45473), (281, 45428), (286, 45413), (288, 45407), (301, 45353), (303, 45344), (352, 45116), (358, 45080),

Gene: Schueller\_52 Start: 46572, Stop: 44959, Start Num: 89

Candidate Starts for Schueller\_52:

(61, 46662), (Start: 82 @46638 has 11 MA's), (Start: 87 @46581 has 1 MA's), (Start: 89 @46572 has 2 MA's), (104, 46482), (108, 46449), (119, 46392), (121, 46380), (123, 46356), (126, 46344), (127, 46335), (138, 46275), (147, 46185), (151, 46140), (158, 46080), (167, 46026), (173, 45978), (176, 45957), (198, 45825), (208, 45756), (210, 45750), (212, 45723), (214, 45708), (219, 45666), (224, 45618), (227, 45588), (232, 45561), (266, 45435), (268, 45429), (271, 45402), (281, 45357), (286, 45342), (288, 45336), (301, 45282), (303, 45273), (352, 45045), (358, 45009),

Gene: Scoot17C\_53 Start: 47176, Stop: 45380, Start Num: 38

Candidate Starts for Scoot17C\_53:

(Start: 38 @47176 has 111 MA's), (Start: 69 @47083 has 103 MA's), (Start: 82 @47059 has 11 MA's), (Start: 87 @47002 has 1 MA's), (Start: 89 @46993 has 2 MA's), (104, 46903), (108, 46870), (119, 46813), (121, 46801), (123, 46777), (126, 46765), (127, 46756), (138, 46696), (147, 46606), (151, 46561), (158, 46501), (173, 46399), (176, 46378), (198, 46246), (208, 46177), (210, 46171), (212, 46144), (214, 46129), (219, 46087), (224, 46039), (227, 46009), (232, 45982), (266, 45856), (268, 45850), (271, 45823), (280, 45781), (281, 45778), (286, 45763), (288, 45757), (301, 45703), (303, 45694), (352, 45466), (358, 45430),

Gene: Scrick\_52 Start: 46676, Stop: 44973, Start Num: 69

Candidate Starts for Scrick\_52:

(Start: 38 @46769 has 111 MA's), (Start: 69 @46676 has 103 MA's), (Start: 82 @46652 has 11 MA's), (Start: 87 @46595 has 1 MA's), (Start: 89 @46586 has 2 MA's), (104, 46496), (108, 46463), (119, 46406), (121, 46394), (123, 46370), (126, 46358), (127, 46349), (138, 46289), (147, 46199), (151,

46154), (158, 46094), (173, 45992), (176, 45971), (198, 45839), (208, 45770), (210, 45764), (212, 45737), (214, 45722), (219, 45680), (224, 45632), (227, 45602), (232, 45575), (266, 45449), (268, 45443), (271, 45416), (280, 45374), (281, 45371), (286, 45356), (288, 45350), (301, 45296), (303, 45287), (352, 45059), (358, 45023),

Gene: Selr12\_52 Start: 46772, Stop: 44976, Start Num: 38

Candidate Starts for Selr12\_52:

(Start: 38 @46772 has 111 MA's), (Start: 69 @46679 has 103 MA's), (Start: 82 @46655 has 11 MA's), (Start: 87 @46598 has 1 MA's), (Start: 89 @46589 has 2 MA's), (104, 46499), (108, 46466), (119, 46409), (121, 46397), (123, 46373), (126, 46361), (127, 46352), (138, 46292), (147, 46202), (151, 46157), (158, 46097), (173, 45995), (176, 45974), (198, 45842), (208, 45773), (210, 45767), (212, 45740), (214, 45725), (219, 45683), (224, 45635), (227, 45605), (232, 45578), (266, 45452), (268, 45446), (271, 45419), (280, 45377), (281, 45374), (286, 45359), (288, 45353), (301, 45299), (303, 45290), (352, 45062), (358, 45026),

Gene: Serendipitous\_51 Start: 47665, Stop: 45971, Start Num: 70

Candidate Starts for Serendipitous\_51:

(Start: 70 @47665 has 10 MA's), (108, 47449), (123, 47359), (134, 47296), (138, 47278), (141, 47233), (145, 47209), (147, 47188), (167, 47035), (173, 46987), (196, 46846), (202, 46810), (207, 46771), (208, 46765), (210, 46759), (212, 46732), (213, 46720), (214, 46717), (219, 46675), (224, 46627), (227, 46597), (259, 46474), (262, 46462), (266, 46441), (267, 46438), (279, 46366), (280, 46363), (286, 46345), (310, 46246), (323, 46198), (337, 46144), (352, 46048), (363, 45994),

Gene: Serendipity\_52 Start: 46964, Stop: 45261, Start Num: 69

Candidate Starts for Serendipity\_52:

(Start: 69 @46964 has 103 MA's), (Start: 82 @46940 has 11 MA's), (Start: 87 @46883 has 1 MA's), (Start: 89 @46874 has 2 MA's), (104, 46784), (108, 46751), (119, 46694), (121, 46682), (123, 46658), (126, 46646), (127, 46637), (138, 46577), (147, 46487), (151, 46442), (158, 46382), (167, 46328), (173, 46280), (176, 46259), (198, 46127), (208, 46058), (210, 46052), (212, 46025), (214, 46010), (219, 45968), (224, 45920), (227, 45890), (232, 45863), (266, 45737), (268, 45731), (271, 45704), (280, 45662), (281, 45659), (286, 45644), (288, 45638), (301, 45584), (303, 45575), (352, 45347), (358, 45311),

Gene: Serpentine\_0052 Start: 47056, Stop: 45260, Start Num: 38

Candidate Starts for Serpentine\_0052:

(Start: 38 @47056 has 111 MA's), (Start: 69 @46963 has 103 MA's), (Start: 82 @46939 has 11 MA's), (Start: 87 @46882 has 1 MA's), (Start: 89 @46873 has 2 MA's), (104, 46783), (108, 46750), (119, 46693), (121, 46681), (123, 46657), (126, 46645), (127, 46636), (138, 46576), (147, 46486), (151, 46441), (158, 46381), (167, 46327), (173, 46279), (176, 46258), (198, 46126), (208, 46057), (210, 46051), (212, 46024), (214, 46009), (219, 45967), (224, 45919), (227, 45889), (232, 45862), (266, 45736), (268, 45730), (271, 45703), (281, 45658), (286, 45643), (288, 45637), (301, 45583), (303, 45574), (352, 45346), (358, 45310),

Gene: Shatter\_46 Start: 40113, Stop: 38449, Start Num: 67

Candidate Starts for Shatter\_46:

(36, 40215), (Start: 65 @40116 has 1 MA's), (Start: 67 @40113 has 49 MA's), (101, 39939), (102, 39933), (104, 39927), (108, 39894), (109, 39882), (119, 39837), (145, 39651), (147, 39630), (158, 39531), (163, 39510), (167, 39477), (173, 39429), (181, 39369), (207, 39213), (209, 39204), (212, 39174), (214, 39159), (219, 39117), (224, 39069), (227, 39039), (229, 39030), (286, 38796), (301, 38757), (303, 38748), (322, 38685), (346, 38562), (352, 38526), (368, 38460),

Gene: Sheila\_52 Start: 46989, Stop: 45286, Start Num: 68

Candidate Starts for Sheila\_52:

(Start: 68 @46989 has 66 MA's), (Start: 82 @46965 has 11 MA's), (Start: 87 @46908 has 1 MA's), (Start: 89 @46899 has 2 MA's), (104, 46809), (108, 46776), (119, 46719), (121, 46707), (123, 46683), (126, 46671), (127, 46662), (138, 46602), (147, 46512), (151, 46467), (158, 46407), (173, 46305), (176, 46284), (198, 46152), (208, 46083), (210, 46077), (212, 46050), (214, 46035), (219, 45993), (224, 45945), (227, 45915), (232, 45888), (266, 45762), (268, 45756), (271, 45729), (281, 45684), (286, 45669), (288, 45663), (301, 45609), (303, 45600), (352, 45372), (358, 45336),

Gene: Shenyu\_52 Start: 48195, Stop: 46501, Start Num: 70

Candidate Starts for Shenyu\_52:

(Start: 70 @48195 has 10 MA's), (Start: 82 @48168 has 11 MA's), (91, 48096), (108, 47979), (123, 47889), (134, 47826), (138, 47808), (145, 47739), (147, 47718), (158, 47619), (163, 47598), (167, 47565), (173, 47517), (196, 47376), (202, 47340), (207, 47301), (208, 47295), (210, 47289), (211, 47286), (212, 47262), (213, 47250), (214, 47247), (219, 47205), (227, 47127), (259, 47004), (262, 46992), (266, 46971), (267, 46968), (273, 46929), (275, 46911), (280, 46893), (286, 46875), (352, 46578),

Gene: ShiVal\_52 Start: 46947, Stop: 45244, Start Num: 68

Candidate Starts for ShiVal\_52:

(Start: 68 @46947 has 66 MA's), (Start: 82 @46923 has 11 MA's), (Start: 87 @46866 has 1 MA's), (Start: 89 @46857 has 2 MA's), (104, 46767), (108, 46734), (119, 46677), (121, 46665), (123, 46641), (126, 46629), (127, 46620), (138, 46560), (147, 46470), (151, 46425), (158, 46365), (173, 46263), (176, 46242), (198, 46110), (208, 46041), (210, 46035), (212, 46008), (214, 45993), (219, 45951), (224, 45903), (227, 45873), (232, 45846), (266, 45720), (268, 45714), (271, 45687), (280, 45645), (281, 45642), (286, 45627), (288, 45621), (301, 45567), (303, 45558), (352, 45330), (358, 45294),

Gene: Sigman\_53 Start: 47167, Stop: 45371, Start Num: 38

Candidate Starts for Sigman\_53:

(Start: 38 @47167 has 111 MA's), (Start: 69 @47074 has 103 MA's), (Start: 82 @47050 has 11 MA's), (Start: 87 @46993 has 1 MA's), (Start: 89 @46984 has 2 MA's), (104, 46894), (108, 46861), (119, 46804), (121, 46792), (123, 46768), (126, 46756), (127, 46747), (138, 46687), (147, 46597), (151, 46552), (158, 46492), (167, 46438), (173, 46390), (176, 46369), (198, 46237), (208, 46168), (210, 46162), (212, 46135), (214, 46120), (219, 46078), (224, 46030), (227, 46000), (232, 45973), (266, 45847), (268, 45841), (271, 45814), (280, 45772), (281, 45769), (286, 45754), (288, 45748), (301, 45694), (303, 45685), (352, 45457), (358, 45421),

Gene: SilverBell\_52 Start: 46970, Stop: 45267, Start Num: 68

Candidate Starts for SilverBell\_52:

(13, 47303), (15, 47276), (Start: 68 @46970 has 66 MA's), (Start: 82 @46946 has 11 MA's), (Start: 87 @46889 has 1 MA's), (Start: 89 @46880 has 2 MA's), (104, 46790), (108, 46757), (119, 46700), (121, 46688), (123, 46664), (126, 46652), (127, 46643), (138, 46583), (147, 46493), (151, 46448), (158, 46388), (173, 46286), (176, 46265), (198, 46133), (208, 46064), (210, 46058), (212, 46031), (214, 46016), (219, 45974), (224, 45926), (227, 45896), (232, 45869), (266, 45743), (268, 45737), (271, 45710), (280, 45668), (281, 45665), (286, 45650), (288, 45644), (301, 45590), (303, 45581), (352, 45353), (358, 45317),

Gene: Simielle\_51 Start: 46726, Stop: 44930, Start Num: 38

Candidate Starts for Simielle\_51:

(Start: 38 @46726 has 111 MA's), (Start: 69 @46633 has 103 MA's), (Start: 82 @46609 has 11 MA's), (Start: 87 @46552 has 1 MA's), (Start: 89 @46543 has 2 MA's), (104, 46453), (108, 46420), (119, 46363), (121, 46351), (123, 46327), (126, 46315), (127, 46306), (138, 46246), (147, 46156), (151, 46111), (158, 46051), (167, 45997), (173, 45949), (176, 45928), (198, 45796), (208, 45727), (210, 45721), (212, 45694), (214, 45679), (219, 45637), (224, 45589), (227, 45559), (232, 45532), (266, 45406), (268, 45400), (271, 45373), (281, 45328), (286, 45313), (288, 45307), (301, 45253), (303,

45244), (352, 45016), (358, 44980),

Gene: SirJeffery\_51 Start: 47836, Stop: 46142, Start Num: 70

Candidate Starts for SirJeffery\_51:

(Start: 52 @47914 has 1 MA's), (Start: 70 @47836 has 10 MA's), (Start: 82 @47809 has 11 MA's), (92, 47734), (108, 47620), (123, 47530), (134, 47467), (138, 47449), (145, 47380), (147, 47359), (163, 47239), (173, 47158), (176, 47137), (196, 47017), (202, 46981), (207, 46942), (208, 46936), (210, 46930), (211, 46927), (212, 46903), (213, 46891), (214, 46888), (219, 46846), (224, 46798), (227, 46768), (259, 46645), (262, 46633), (266, 46612), (267, 46609), (273, 46570), (280, 46534), (286, 46516), (337, 46315), (352, 46219),

Gene: Sisko\_45 Start: 40413, Stop: 38752, Start Num: 67

Candidate Starts for Sisko\_45:

(Start: 67 @40413 has 49 MA's), (86, 40347), (92, 40305), (Start: 103 @40227 has 1 MA's), (104, 40224), (108, 40191), (119, 40134), (145, 39948), (147, 39927), (163, 39807), (173, 39726), (176, 39705), (180, 39687), (181, 39666), (183, 39660), (199, 39567), (209, 39501), (210, 39498), (212, 39471), (214, 39456), (219, 39414), (227, 39336), (236, 39288), (301, 39054), (303, 39045), (321, 38985), (322, 38982), (331, 38943), (346, 38859), (352, 38823),

Gene: Skippy\_52 Start: 46934, Stop: 45231, Start Num: 69

Candidate Starts for Skippy\_52:

(Start: 38 @47027 has 111 MA's), (Start: 69 @46934 has 103 MA's), (Start: 82 @46910 has 11 MA's), (Start: 87 @46853 has 1 MA's), (Start: 89 @46844 has 2 MA's), (104, 46754), (108, 46721), (119, 46664), (121, 46652), (123, 46628), (126, 46616), (127, 46607), (138, 46547), (147, 46457), (151, 46412), (158, 46352), (167, 46298), (173, 46250), (176, 46229), (198, 46097), (208, 46028), (210, 46022), (212, 45995), (214, 45980), (219, 45938), (224, 45890), (227, 45860), (232, 45833), (266, 45707), (268, 45701), (271, 45674), (281, 45629), (286, 45614), (288, 45608), (301, 45554), (303, 45545), (352, 45317), (358, 45281),

Gene: Slatt\_52 Start: 46960, Stop: 45257, Start Num: 69

Candidate Starts for Slatt\_52:

(Start: 38 @47053 has 111 MA's), (Start: 69 @46960 has 103 MA's), (Start: 82 @46936 has 11 MA's), (Start: 87 @46879 has 1 MA's), (Start: 89 @46870 has 2 MA's), (104, 46780), (108, 46747), (119, 46690), (121, 46678), (123, 46654), (126, 46642), (127, 46633), (138, 46573), (147, 46483), (151, 46438), (158, 46378), (167, 46324), (173, 46276), (176, 46255), (198, 46123), (208, 46054), (210, 46048), (212, 46021), (214, 46006), (219, 45964), (224, 45916), (227, 45886), (232, 45859), (266, 45733), (268, 45727), (271, 45700), (281, 45655), (286, 45640), (288, 45634), (301, 45580), (303, 45571), (352, 45343), (358, 45307),

Gene: SlippinJimmy\_54 Start: 48385, Stop: 46688, Start Num: 64

Candidate Starts for SlippinJimmy\_54:

(Start: 64 @48385 has 34 MA's), (Start: 103 @48187 has 1 MA's), (108, 48151), (119, 48094), (127, 48037), (134, 47995), (141, 47932), (146, 47905), (147, 47887), (158, 47782), (171, 47692), (173, 47680), (176, 47659), (183, 47614), (193, 47551), (205, 47467), (209, 47452), (210, 47449), (211, 47446), (212, 47422), (215, 47404), (219, 47365), (224, 47317), (227, 47287), (231, 47263), (238, 47221), (264, 47143), (270, 47116), (277, 47065), (286, 47041), (301, 46993), (312, 46954), (325, 46912), (344, 46807), (352, 46765), (353, 46750),

Gene: SoSeph\_65 Start: 46099, Stop: 47808, Start Num: 77

Candidate Starts for SoSeph\_65:

(Start: 77 @46099 has 31 MA's), (92, 46192), (Start: 103 @46270 has 1 MA's), (104, 46273), (107, 46297), (108, 46306), (116, 46345), (119, 46363), (127, 46420), (131, 46447), (132, 46450), (140, 46513), (147, 46573), (150, 46603), (151, 46612), (161, 46687), (162, 46690), (168, 46732), (169,



46735), (172, 46771), (173, 46774), (181, 46840), (182, 46843), (183, 46846), (185, 46861), (186, 46876), (189, 46891), (196, 46921), (198, 46933), (212, 47035), (213, 47047), (214, 47050), (215, 47053), (217, 47074), (219, 47092), (223, 47137), (224, 47140), (230, 47179), (233, 47200), (265, 47329), (275, 47398), (276, 47401), (286, 47434), (287, 47437), (288, 47440), (313, 47503), (320, 47512), (322, 47518), (327, 47542), (339, 47575), (348, 47638), (352, 47659), (353, 47674), (361, 47701), (362, 47710), (364, 47725),

Gene: Soile\_52 Start: 46663, Stop: 44960, Start Num: 69

Candidate Starts for Soile\_52:

(Start: 38 @46756 has 111 MA's), (Start: 69 @46663 has 103 MA's), (Start: 82 @46639 has 11 MA's), (Start: 87 @46582 has 1 MA's), (Start: 89 @46573 has 2 MA's), (104, 46483), (108, 46450), (119, 46393), (121, 46381), (123, 46357), (126, 46345), (127, 46336), (138, 46276), (147, 46186), (151, 46141), (158, 46081), (167, 46027), (173, 45979), (176, 45958), (198, 45826), (208, 45757), (210, 45751), (212, 45724), (214, 45709), (219, 45667), (224, 45619), (227, 45589), (232, 45562), (266, 45436), (268, 45430), (271, 45403), (281, 45358), (286, 45343), (288, 45337), (301, 45283), (303, 45274), (352, 45046), (358, 45010),

Gene: Solosis\_51 Start: 46661, Stop: 44958, Start Num: 69

Candidate Starts for Solosis\_51:

(Start: 69 @46661 has 103 MA's), (Start: 82 @46637 has 11 MA's), (Start: 87 @46580 has 1 MA's), (Start: 89 @46571 has 2 MA's), (104, 46481), (108, 46448), (119, 46391), (121, 46379), (123, 46355), (126, 46343), (127, 46334), (138, 46274), (147, 46184), (151, 46139), (158, 46079), (167, 46025), (173, 45977), (176, 45956), (198, 45824), (208, 45755), (210, 45749), (212, 45722), (214, 45707), (219, 45665), (224, 45617), (227, 45587), (232, 45560), (266, 45434), (268, 45428), (271, 45401), (280, 45359), (281, 45356), (286, 45341), (288, 45335), (301, 45281), (303, 45272), (352, 45044), (358, 45008),

Gene: Sophia\_51 Start: 46655, Stop: 44952, Start Num: 69

Candidate Starts for Sophia\_51:

(Start: 69 @46655 has 103 MA's), (Start: 82 @46631 has 11 MA's), (Start: 87 @46574 has 1 MA's), (Start: 89 @46565 has 2 MA's), (104, 46475), (108, 46442), (119, 46385), (121, 46373), (123, 46349), (126, 46337), (127, 46328), (138, 46268), (147, 46178), (151, 46133), (158, 46073), (167, 46019), (173, 45971), (176, 45950), (198, 45818), (208, 45749), (210, 45743), (212, 45716), (214, 45701), (219, 45659), (224, 45611), (227, 45581), (232, 45554), (266, 45428), (268, 45422), (271, 45395), (280, 45353), (281, 45350), (286, 45335), (288, 45329), (301, 45275), (303, 45266), (352, 45038), (358, 45002),

Gene: Soto\_52 Start: 46961, Stop: 45258, Start Num: 68

Candidate Starts for Soto\_52:

(Start: 68 @46961 has 66 MA's), (Start: 82 @46937 has 11 MA's), (Start: 87 @46880 has 1 MA's), (Start: 89 @46871 has 2 MA's), (104, 46781), (108, 46748), (119, 46691), (121, 46679), (123, 46655), (126, 46643), (127, 46634), (138, 46574), (147, 46484), (151, 46439), (158, 46379), (173, 46277), (176, 46256), (198, 46124), (208, 46055), (210, 46049), (212, 46022), (214, 46007), (219, 45965), (224, 45917), (227, 45887), (232, 45860), (266, 45734), (268, 45728), (271, 45701), (281, 45656), (286, 45641), (288, 45635), (301, 45581), (303, 45572), (352, 45344), (358, 45308),

Gene: Sour\_50 Start: 44257, Stop: 42593, Start Num: 67

Candidate Starts for Sour\_50:

(56, 44320), (Start: 67 @44257 has 49 MA's), (91, 44152), (92, 44149), (96, 44107), (102, 44074), (104, 44068), (108, 44035), (109, 44023), (138, 43861), (145, 43792), (147, 43771), (151, 43732), (163, 43651), (172, 43573), (173, 43570), (181, 43510), (183, 43504), (190, 43456), (199, 43411), (209, 43345), (210, 43342), (212, 43315), (213, 43303), (219, 43258), (224, 43210), (226, 43183), (227, 43180), (237, 43129), (285, 42937), (303, 42886), (321, 42826), (322, 42823), (331, 42784),

(346, 42700), (352, 42664),

Gene: Spartan300\_52 Start: 46946, Stop: 45243, Start Num: 68

Candidate Starts for Spartan300\_52:

(Start: 68 @46946 has 66 MA's), (Start: 82 @46922 has 11 MA's), (Start: 87 @46865 has 1 MA's), (Start: 89 @46856 has 2 MA's), (104, 46766), (108, 46733), (119, 46676), (121, 46664), (123, 46640), (126, 46628), (127, 46619), (138, 46559), (147, 46469), (151, 46424), (158, 46364), (173, 46262), (176, 46241), (198, 46109), (208, 46040), (210, 46034), (212, 46007), (214, 45992), (219, 45950), (224, 45902), (227, 45872), (232, 45845), (266, 45719), (268, 45713), (271, 45686), (280, 45644), (281, 45641), (286, 45626), (288, 45620), (301, 45566), (303, 45557), (352, 45329), (358, 45293),

Gene: Squid\_52 Start: 46667, Stop: 44964, Start Num: 69

Candidate Starts for Squid\_52:

(Start: 69 @46667 has 103 MA's), (Start: 82 @46643 has 11 MA's), (Start: 87 @46586 has 1 MA's), (Start: 89 @46577 has 2 MA's), (104, 46487), (108, 46454), (119, 46397), (121, 46385), (123, 46361), (126, 46349), (127, 46340), (138, 46280), (147, 46190), (151, 46145), (158, 46085), (167, 46031), (173, 45983), (176, 45962), (198, 45830), (208, 45761), (210, 45755), (212, 45728), (214, 45713), (219, 45671), (224, 45623), (227, 45593), (232, 45566), (266, 45440), (268, 45434), (271, 45407), (280, 45365), (281, 45362), (286, 45347), (288, 45341), (301, 45287), (303, 45278), (352, 45050), (358, 45014),

Gene: Squiggle\_52 Start: 46763, Stop: 44967, Start Num: 38

Candidate Starts for Squiggle\_52:

(Start: 38 @46763 has 111 MA's), (Start: 69 @46670 has 103 MA's), (Start: 82 @46646 has 11 MA's), (Start: 87 @46589 has 1 MA's), (Start: 89 @46580 has 2 MA's), (104, 46490), (108, 46457), (119, 46400), (121, 46388), (123, 46364), (126, 46352), (127, 46343), (138, 46283), (147, 46193), (151, 46148), (158, 46088), (167, 46034), (173, 45986), (176, 45965), (198, 45833), (208, 45764), (210, 45758), (212, 45731), (214, 45716), (219, 45674), (224, 45626), (227, 45596), (232, 45569), (266, 45443), (268, 45437), (271, 45410), (281, 45365), (286, 45350), (288, 45344), (301, 45290), (303, 45281), (352, 45053), (358, 45017),

Gene: StAugustine\_72 Start: 56677, Stop: 54917, Start Num: 66

Candidate Starts for StAugustine\_72:

(66, 56677), (91, 56563), (95, 56530), (97, 56512), (102, 56485), (104, 56479), (108, 56446), (109, 56434), (127, 56332), (134, 56290), (145, 56203), (147, 56182), (151, 56143), (165, 56056), (171, 55993), (172, 55984), (173, 55981), (176, 55960), (193, 55855), (194, 55846), (198, 55828), (206, 55768), (208, 55759), (209, 55756), (210, 55753), (212, 55726), (214, 55711), (219, 55669), (227, 55591), (266, 55441), (270, 55423), (271, 55402), (277, 55366), (285, 55345), (286, 55342), (301, 55291), (310, 55252), (325, 55183), (352, 55042), (362, 54991), (370, 54958),

Gene: Stinger\_46 Start: 45974, Stop: 44259, Start Num: 69

Candidate Starts for Stinger\_46:

(Start: 69 @45974 has 103 MA's), (102, 45791), (105, 45782), (108, 45752), (111, 45731), (119, 45695), (123, 45659), (125, 45650), (134, 45596), (145, 45509), (147, 45488), (148, 45467), (158, 45389), (163, 45368), (167, 45335), (169, 45326), (172, 45290), (173, 45287), (177, 45263), (208, 45065), (210, 45059), (212, 45032), (213, 45020), (214, 45017), (219, 44975), (224, 44927), (227, 44897), (237, 44846), (260, 44771), (261, 44765), (266, 44741), (267, 44738), (272, 44705), (273, 44699), (280, 44663), (285, 44648), (286, 44645), (290, 44636), (295, 44618), (298, 44591), (303, 44570), (329, 44459), (349, 44351), (352, 44336),

Gene: StinkyVeggy\_52 Start: 47981, Stop: 46287, Start Num: 70

Candidate Starts for StinkyVeggy\_52:

(Start: 70 @47981 has 10 MA's), (Start: 82 @47954 has 11 MA's), (91, 47882), (108, 47765), (123, 47675), (126, 47663), (134, 47612), (138, 47594), (145, 47525), (147, 47504), (157, 47408), (163, 47384), (167, 47351), (173, 47303), (176, 47282), (196, 47162), (202, 47126), (207, 47087), (208, 47081), (210, 47075), (212, 47048), (213, 47036), (214, 47033), (219, 46991), (224, 46943), (227, 46913), (259, 46790), (266, 46757), (267, 46754), (272, 46721), (273, 46715), (275, 46697), (280, 46679), (286, 46661), (337, 46460), (352, 46364),

Gene: Struggle\_51 Start: 46475, Stop: 44796, Start Num: 82

Candidate Starts for Struggle\_51:

(Start: 38 @46592 has 111 MA's), (Start: 69 @46499 has 103 MA's), (Start: 82 @46475 has 11 MA's), (Start: 87 @46418 has 1 MA's), (Start: 89 @46409 has 2 MA's), (104, 46319), (108, 46286), (119, 46229), (121, 46217), (123, 46193), (126, 46181), (127, 46172), (138, 46112), (147, 46022), (151, 45977), (158, 45917), (167, 45863), (173, 45815), (176, 45794), (198, 45662), (208, 45593), (210, 45587), (212, 45560), (214, 45545), (219, 45503), (224, 45455), (227, 45425), (232, 45398), (266, 45272), (268, 45266), (271, 45239), (281, 45194), (286, 45179), (288, 45173), (301, 45119), (303, 45110), (352, 44882), (358, 44846),

Gene: Suffolk\_52 Start: 46951, Stop: 45248, Start Num: 68

Candidate Starts for Suffolk\_52:

(Start: 68 @46951 has 66 MA's), (Start: 82 @46927 has 11 MA's), (Start: 87 @46870 has 1 MA's), (Start: 89 @46861 has 2 MA's), (104, 46771), (108, 46738), (119, 46681), (121, 46669), (123, 46645), (126, 46633), (127, 46624), (138, 46564), (147, 46474), (151, 46429), (158, 46369), (173, 46267), (176, 46246), (198, 46114), (208, 46045), (210, 46039), (212, 46012), (214, 45997), (219, 45955), (224, 45907), (227, 45877), (232, 45850), (266, 45724), (268, 45718), (271, 45691), (281, 45646), (286, 45631), (288, 45625), (301, 45571), (303, 45562), (352, 45334), (358, 45298),

Gene: Suigeneris\_53 Start: 48194, Stop: 46422, Start Num: 52

Candidate Starts for Suigeneris\_53:

(Start: 52 @48194 has 1 MA's), (Start: 70 @48116 has 10 MA's), (Start: 82 @48089 has 11 MA's), (92, 48014), (108, 47900), (123, 47810), (134, 47747), (138, 47729), (145, 47660), (147, 47639), (158, 47540), (173, 47438), (176, 47417), (196, 47297), (202, 47261), (208, 47216), (210, 47210), (211, 47207), (212, 47183), (213, 47171), (214, 47168), (219, 47126), (224, 47078), (227, 47048), (259, 46925), (266, 46892), (267, 46889), (273, 46850), (280, 46814), (286, 46796), (337, 46595), (352, 46499),

Gene: Surely\_52 Start: 46957, Stop: 45254, Start Num: 68

Candidate Starts for Surely\_52:

(Start: 68 @46957 has 66 MA's), (Start: 82 @46933 has 11 MA's), (Start: 87 @46876 has 1 MA's), (Start: 89 @46867 has 2 MA's), (104, 46777), (108, 46744), (119, 46687), (121, 46675), (123, 46651), (126, 46639), (127, 46630), (138, 46570), (147, 46480), (151, 46435), (158, 46375), (167, 46321), (173, 46273), (176, 46252), (198, 46120), (208, 46051), (210, 46045), (212, 46018), (214, 46003), (219, 45961), (224, 45913), (227, 45883), (232, 45856), (266, 45730), (268, 45724), (271, 45697), (281, 45652), (286, 45637), (288, 45631), (301, 45577), (303, 45568), (352, 45340), (358, 45304),

Gene: Swiphy\_54 Start: 47045, Stop: 45249, Start Num: 38

Candidate Starts for Swiphy\_54:

(Start: 38 @47045 has 111 MA's), (Start: 69 @46952 has 103 MA's), (Start: 82 @46928 has 11 MA's), (Start: 87 @46871 has 1 MA's), (Start: 89 @46862 has 2 MA's), (104, 46772), (108, 46739), (119, 46682), (121, 46670), (123, 46646), (126, 46634), (127, 46625), (138, 46565), (147, 46475), (151, 46430), (158, 46370), (173, 46268), (176, 46247), (198, 46115), (208, 46046), (210, 46040), (212, 46013), (214, 45998), (219, 45956), (224, 45908), (227, 45878), (232, 45851), (266, 45725), (268, 45719), (271, 45692), (281, 45647), (286, 45632), (288, 45626), (301, 45572), (303, 45563), (352, 45335), (358, 45299),

Gene: Swish\_53 Start: 47189, Stop: 45393, Start Num: 38

Candidate Starts for Swish\_53:

(Start: 38 @47189 has 111 MA's), (Start: 69 @47096 has 103 MA's), (Start: 82 @47072 has 11 MA's), (Start: 87 @47015 has 1 MA's), (Start: 89 @47006 has 2 MA's), (104, 46916), (108, 46883), (119, 46826), (121, 46814), (123, 46790), (126, 46778), (127, 46769), (138, 46709), (147, 46619), (151, 46574), (158, 46514), (173, 46412), (176, 46391), (198, 46259), (208, 46190), (210, 46184), (212, 46157), (214, 46142), (219, 46100), (224, 46052), (227, 46022), (232, 45995), (266, 45869), (268, 45863), (271, 45836), (280, 45794), (281, 45791), (286, 45776), (288, 45770), (301, 45716), (303, 45707), (352, 45479), (358, 45443),

Gene: SynergyX\_52 Start: 47158, Stop: 45461, Start Num: 64

Candidate Starts for SynergyX\_52:

(Start: 64 @47158 has 34 MA's), (Start: 103 @46960 has 1 MA's), (108, 46924), (119, 46867), (127, 46810), (134, 46768), (136, 46762), (141, 46705), (146, 46678), (147, 46660), (158, 46555), (171, 46465), (173, 46453), (176, 46432), (183, 46387), (193, 46324), (205, 46240), (209, 46225), (210, 46222), (211, 46219), (212, 46195), (215, 46177), (219, 46138), (224, 46090), (227, 46060), (231, 46036), (238, 45994), (264, 45916), (270, 45889), (277, 45838), (286, 45814), (301, 45766), (312, 45727), (325, 45685), (344, 45580), (352, 45538), (353, 45523),

Gene: TA17A\_51 Start: 46559, Stop: 44844, Start Num: 67

Candidate Starts for TA17A\_51:

(10, 46988), (12, 46952), (14, 46880), (20, 46814), (Start: 67 @46559 has 49 MA's), (75, 46547), (102, 46376), (Start: 103 @46373 has 1 MA's), (108, 46337), (109, 46325), (111, 46316), (119, 46280), (120, 46277), (123, 46244), (134, 46181), (147, 46073), (151, 46034), (163, 45953), (167, 45920), (169, 45911), (173, 45872), (176, 45851), (177, 45848), (183, 45806), (185, 45791), (186, 45776), (193, 45746), (198, 45719), (203, 45671), (209, 45647), (210, 45644), (212, 45617), (213, 45605), (215, 45599), (219, 45560), (224, 45512), (227, 45482), (228, 45476), (237, 45431), (251, 45356), (253, 45344), (261, 45317), (262, 45314), (265, 45299), (275, 45233), (286, 45200), (309, 45122), (318, 45092), (319, 45089), (322, 45077), (331, 45038), (352, 44918), (366, 44852),

Gene: TP1604\_54 Start: 44652, Stop: 46490, Start Num: 77

Candidate Starts for TP1604\_54:

(Start: 77 @44652 has 31 MA's), (86, 44697), (90, 44733), (92, 44739), (94, 44766), (102, 44826), (111, 44886), (123, 44958), (124, 44961), (126, 44970), (131, 45006), (137, 45030), (140, 45072), (143, 45093), (147, 45117), (149, 45144), (153, 45177), (155, 45204), (165, 45252), (168, 45282), (184, 45402), (185, 45411), (187, 45429), (191, 45447), (209, 45558), (210, 45561), (213, 45600), (219, 45645), (220, 45648), (230, 45738), (283, 46020), (293, 46047), (316, 46221), (324, 46257), (328, 46272), (348, 46374), (354, 46422), (357, 46431),

Gene: TPA2\_58 Start: 46460, Stop: 44814, Start Num: 69

Candidate Starts for TPA2\_58:

(Start: 69 @46460 has 103 MA's), (91, 46361), (100, 46295), (101, 46289), (108, 46244), (109, 46232), (134, 46088), (137, 46079), (147, 45980), (158, 45875), (163, 45854), (173, 45773), (177, 45749), (189, 45662), (197, 45629), (202, 45596), (208, 45551), (210, 45545), (212, 45518), (214, 45503), (219, 45461), (224, 45413), (227, 45383), (229, 45374), (241, 45314), (259, 45266), (266, 45236), (275, 45176), (284, 45152), (288, 45140), (330, 45023), (346, 44936), (350, 44912), (352, 44900),

Gene: TallGrassMM\_52 Start: 46570, Stop: 44867, Start Num: 69

Candidate Starts for TallGrassMM\_52:

(Start: 69 @46570 has 103 MA's), (Start: 82 @46546 has 11 MA's), (Start: 87 @46489 has 1 MA's), (Start: 89 @46480 has 2 MA's), (104, 46390), (108, 46357), (119, 46300), (121, 46288), (123, 46264),

(126, 46252), (127, 46243), (138, 46183), (147, 46093), (151, 46048), (158, 45988), (167, 45934), (173, 45886), (176, 45865), (198, 45733), (208, 45664), (210, 45658), (212, 45631), (214, 45616), (219, 45574), (224, 45526), (227, 45496), (232, 45469), (266, 45343), (268, 45337), (271, 45310), (280, 45268), (281, 45265), (286, 45250), (288, 45244), (301, 45190), (303, 45181), (352, 44953), (358, 44917),

Gene: Telesworld\_51 Start: 46742, Stop: 44946, Start Num: 38

Candidate Starts for Telesworld\_51:

(Start: 38 @46742 has 111 MA's), (Start: 69 @46649 has 103 MA's), (Start: 82 @46625 has 11 MA's), (Start: 87 @46568 has 1 MA's), (Start: 89 @46559 has 2 MA's), (104, 46469), (108, 46436), (119, 46379), (121, 46367), (123, 46343), (126, 46331), (127, 46322), (138, 46262), (147, 46172), (151, 46127), (158, 46067), (167, 46013), (173, 45965), (176, 45944), (198, 45812), (208, 45743), (210, 45737), (212, 45710), (214, 45695), (219, 45653), (224, 45605), (227, 45575), (232, 45548), (266, 45422), (268, 45416), (271, 45389), (281, 45344), (286, 45329), (288, 45323), (301, 45269), (303, 45260), (352, 45032), (358, 44996),

Gene: Thonko\_54 Start: 46420, Stop: 44732, Start Num: 69

Candidate Starts for Thonko\_54:

(Start: 69 @46420 has 103 MA's), (72, 46414), (102, 46243), (105, 46234), (108, 46204), (119, 46150), (126, 46102), (138, 46033), (141, 45988), (145, 45964), (147, 45943), (158, 45844), (163, 45823), (167, 45790), (173, 45742), (196, 45601), (198, 45589), (208, 45520), (210, 45514), (212, 45487), (213, 45475), (214, 45472), (219, 45430), (224, 45382), (227, 45352), (262, 45232), (266, 45211), (267, 45208), (272, 45175), (275, 45151), (329, 44932), (332, 44923), (337, 44905), (344, 44851), (348, 44833), (352, 44809), (362, 44758),

Gene: Thora\_52 Start: 46956, Stop: 45253, Start Num: 68

Candidate Starts for Thora\_52:

(Start: 68 @46956 has 66 MA's), (Start: 82 @46932 has 11 MA's), (Start: 87 @46875 has 1 MA's), (Start: 89 @46866 has 2 MA's), (104, 46776), (108, 46743), (119, 46686), (121, 46674), (123, 46650), (126, 46638), (127, 46629), (138, 46569), (147, 46479), (151, 46434), (158, 46374), (173, 46272), (176, 46251), (198, 46119), (208, 46050), (210, 46044), (212, 46017), (214, 46002), (219, 45960), (224, 45912), (227, 45882), (232, 45855), (266, 45729), (268, 45723), (271, 45696), (280, 45654), (281, 45651), (286, 45636), (288, 45630), (301, 45576), (303, 45567), (352, 45339), (358, 45303),

Gene: ThreeOh3D2\_53 Start: 47182, Stop: 45386, Start Num: 38

Candidate Starts for ThreeOh3D2\_53:

(Start: 38 @47182 has 111 MA's), (Start: 69 @47089 has 103 MA's), (Start: 82 @47065 has 11 MA's), (Start: 87 @47008 has 1 MA's), (Start: 89 @46999 has 2 MA's), (104, 46909), (108, 46876), (119, 46819), (121, 46807), (123, 46783), (126, 46771), (127, 46762), (138, 46702), (147, 46612), (151, 46567), (158, 46507), (173, 46405), (176, 46384), (198, 46252), (208, 46183), (210, 46177), (212, 46150), (214, 46135), (219, 46093), (224, 46045), (227, 46015), (232, 45988), (266, 45862), (268, 45856), (271, 45829), (280, 45787), (281, 45784), (286, 45769), (288, 45763), (301, 45709), (303, 45700), (352, 45472), (358, 45436),

Gene: Thunderbird\_51 Start: 46747, Stop: 44951, Start Num: 38

Candidate Starts for Thunderbird\_51:

(Start: 38 @46747 has 111 MA's), (Start: 69 @46654 has 103 MA's), (Start: 82 @46630 has 11 MA's), (Start: 87 @46573 has 1 MA's), (Start: 89 @46564 has 2 MA's), (104, 46474), (108, 46441), (119, 46384), (121, 46372), (123, 46348), (126, 46336), (127, 46327), (138, 46267), (147, 46177), (151, 46132), (158, 46072), (167, 46018), (173, 45970), (176, 45949), (198, 45817), (208, 45748), (210, 45742), (212, 45715), (214, 45700), (219, 45658), (224, 45610), (227, 45580), (232, 45553), (266, 45427), (268, 45421), (271, 45394), (281, 45349), (286, 45334), (288, 45328), (301, 45274), (303, 45265), (352, 45037), (358, 45001),

Gene: Thyatira\_67 Start: 48091, Stop: 49800, Start Num: 77

Candidate Starts for Thyatira\_67:

(Start: 77 @48091 has 31 MA's), (92, 48184), (96, 48226), (Start: 103 @48262 has 1 MA's), (104, 48265), (107, 48289), (108, 48298), (116, 48337), (119, 48355), (127, 48412), (131, 48439), (132, 48442), (140, 48505), (147, 48565), (150, 48595), (151, 48604), (158, 48664), (161, 48679), (162, 48682), (168, 48724), (169, 48727), (172, 48763), (173, 48766), (181, 48832), (182, 48835), (183, 48838), (185, 48853), (186, 48868), (189, 48883), (196, 48913), (198, 48925), (212, 49027), (213, 49039), (214, 49042), (215, 49045), (217, 49066), (219, 49084), (223, 49129), (224, 49132), (230, 49171), (233, 49192), (265, 49321), (275, 49390), (276, 49393), (286, 49426), (287, 49429), (288, 49432), (313, 49495), (320, 49504), (322, 49510), (327, 49534), (339, 49567), (348, 49630), (352, 49651), (353, 49666), (361, 49693), (362, 49702), (364, 49717),

Gene: Timmi\_51 Start: 46656, Stop: 44953, Start Num: 69

Candidate Starts for Timmi\_51:

(Start: 69 @46656 has 103 MA's), (Start: 82 @46632 has 11 MA's), (Start: 87 @46575 has 1 MA's), (Start: 89 @46566 has 2 MA's), (104, 46476), (108, 46443), (119, 46386), (121, 46374), (123, 46350), (126, 46338), (127, 46329), (138, 46269), (147, 46179), (151, 46134), (158, 46074), (167, 46020), (173, 45972), (176, 45951), (198, 45819), (208, 45750), (210, 45744), (212, 45717), (214, 45702), (219, 45660), (224, 45612), (227, 45582), (232, 45555), (266, 45429), (268, 45423), (271, 45396), (280, 45354), (281, 45351), (286, 45336), (288, 45330), (301, 45276), (303, 45267), (352, 45039), (358, 45003),

Gene: Tinciduntolum\_52 Start: 46721, Stop: 45006, Start Num: 67

Candidate Starts for Tinciduntolum\_52:

(10, 47150), (12, 47114), (14, 47042), (16, 47027), (20, 46976), (Start: 67 @46721 has 49 MA's), (75, 46709), (102, 46538), (Start: 103 @46535 has 1 MA's), (108, 46499), (109, 46487), (111, 46478), (119, 46442), (120, 46439), (123, 46406), (134, 46343), (147, 46235), (151, 46196), (163, 46115), (167, 46082), (169, 46073), (173, 46034), (176, 46013), (177, 46010), (183, 45968), (185, 45953), (186, 45938), (193, 45908), (198, 45881), (203, 45833), (209, 45809), (210, 45806), (212, 45779), (213, 45767), (215, 45761), (219, 45722), (224, 45674), (227, 45644), (228, 45638), (237, 45593), (251, 45518), (253, 45506), (261, 45479), (262, 45476), (265, 45461), (275, 45395), (286, 45362), (309, 45284), (318, 45254), (319, 45251), (322, 45239), (331, 45200), (344, 45122), (352, 45080), (366, 45014),

Gene: TomBombadil\_52 Start: 46941, Stop: 45238, Start Num: 69

Candidate Starts for TomBombadil\_52:

(Start: 69 @46941 has 103 MA's), (Start: 82 @46917 has 11 MA's), (Start: 87 @46860 has 1 MA's), (Start: 89 @46851 has 2 MA's), (104, 46761), (108, 46728), (119, 46671), (121, 46659), (123, 46635), (126, 46623), (127, 46614), (138, 46554), (147, 46464), (151, 46419), (158, 46359), (167, 46305), (173, 46257), (176, 46236), (198, 46104), (208, 46035), (210, 46029), (212, 46002), (214, 45987), (219, 45945), (224, 45897), (227, 45867), (232, 45840), (266, 45714), (268, 45708), (271, 45681), (280, 45639), (281, 45636), (286, 45621), (288, 45615), (301, 45561), (303, 45552), (352, 45324), (358, 45288),

Gene: Tomlarah\_52 Start: 46944, Stop: 45241, Start Num: 69

Candidate Starts for Tomlarah\_52:

(Start: 38 @47037 has 111 MA's), (Start: 69 @46944 has 103 MA's), (Start: 82 @46920 has 11 MA's), (Start: 87 @46863 has 1 MA's), (Start: 89 @46854 has 2 MA's), (104, 46764), (108, 46731), (119, 46674), (121, 46662), (123, 46638), (126, 46626), (127, 46617), (138, 46557), (147, 46467), (151, 46422), (158, 46362), (167, 46308), (173, 46260), (176, 46239), (198, 46107), (208, 46038), (210, 46032), (212, 46005), (214, 45990), (219, 45948), (224, 45900), (227, 45870), (232, 45843), (266, 45717), (268, 45711), (271, 45684), (281, 45639), (286, 45624), (288, 45618), (301, 45564), (303,

45555), (352, 45327), (358, 45291),

Gene: Toni\_51 Start: 46741, Stop: 44945, Start Num: 38

Candidate Starts for Toni\_51:

(Start: 38 @46741 has 111 MA's), (Start: 69 @46648 has 103 MA's), (Start: 82 @46624 has 11 MA's), (Start: 87 @46567 has 1 MA's), (Start: 89 @46558 has 2 MA's), (104, 46468), (108, 46435), (119, 46378), (121, 46366), (123, 46342), (126, 46330), (127, 46321), (138, 46261), (147, 46171), (151, 46126), (158, 46066), (173, 45964), (176, 45943), (198, 45811), (208, 45742), (210, 45736), (212, 45709), (214, 45694), (219, 45652), (224, 45604), (227, 45574), (232, 45547), (266, 45421), (268, 45415), (271, 45388), (280, 45346), (281, 45343), (286, 45328), (288, 45322), (301, 45268), (303, 45259), (352, 45031), (358, 44995),

Gene: Tooj\_52 Start: 47023, Stop: 45320, Start Num: 68

Candidate Starts for Tooj\_52:

(13, 47356), (15, 47329), (Start: 68 @47023 has 66 MA's), (Start: 82 @46999 has 11 MA's), (Start: 87 @46942 has 1 MA's), (Start: 89 @46933 has 2 MA's), (104, 46843), (108, 46810), (119, 46753), (121, 46741), (123, 46717), (126, 46705), (127, 46696), (138, 46636), (147, 46546), (151, 46501), (158, 46441), (173, 46339), (176, 46318), (198, 46186), (208, 46117), (210, 46111), (212, 46084), (214, 46069), (219, 46027), (224, 45979), (227, 45949), (232, 45922), (266, 45796), (268, 45790), (271, 45763), (281, 45718), (286, 45703), (288, 45697), (301, 45643), (303, 45634), (352, 45406), (358, 45370),

Gene: Tres\_51 Start: 46572, Stop: 44857, Start Num: 67

Candidate Starts for Tres\_51:

(10, 47001), (12, 46965), (14, 46893), (16, 46878), (20, 46827), (Start: 67 @46572 has 49 MA's), (75, 46560), (102, 46389), (Start: 103 @46386 has 1 MA's), (108, 46350), (109, 46338), (111, 46329), (119, 46293), (120, 46290), (123, 46257), (134, 46194), (147, 46086), (151, 46047), (163, 45966), (167, 45933), (169, 45924), (173, 45885), (176, 45864), (177, 45861), (183, 45819), (185, 45804), (186, 45789), (193, 45759), (198, 45732), (203, 45684), (209, 45660), (210, 45657), (212, 45630), (213, 45618), (215, 45612), (219, 45573), (224, 45525), (227, 45495), (228, 45489), (237, 45444), (251, 45369), (253, 45357), (261, 45330), (262, 45327), (265, 45312), (275, 45246), (286, 45213), (309, 45135), (318, 45105), (319, 45102), (322, 45090), (331, 45051), (344, 44973), (352, 44931), (366, 44865),

Gene: Trine\_32 Start: 26687, Stop: 25041, Start Num: 79

Candidate Starts for Trine\_32:

(41, 26819), (Start: 79 @26687 has 7 MA's), (91, 26594), (Start: 103 @26513 has 1 MA's), (104, 26510), (108, 26477), (109, 26465), (111, 26456), (117, 26435), (147, 26216), (157, 26126), (164, 26099), (165, 26096), (169, 26060), (173, 26021), (175, 26009), (177, 25997), (183, 25955), (196, 25880), (215, 25748), (219, 25709), (227, 25631), (237, 25580), (241, 25559), (247, 25541), (248, 25535), (270, 25463), (286, 25391), (321, 25271), (332, 25226), (352, 25112),

Gene: True\_51 Start: 46747, Stop: 44951, Start Num: 38

Candidate Starts for True\_51:

(Start: 38 @46747 has 111 MA's), (Start: 69 @46654 has 103 MA's), (Start: 82 @46630 has 11 MA's), (Start: 87 @46573 has 1 MA's), (Start: 89 @46564 has 2 MA's), (104, 46474), (108, 46441), (119, 46384), (121, 46372), (123, 46348), (126, 46336), (127, 46327), (138, 46267), (147, 46177), (151, 46132), (158, 46072), (173, 45970), (176, 45949), (198, 45817), (208, 45748), (210, 45742), (212, 45715), (214, 45700), (219, 45658), (224, 45610), (227, 45580), (232, 45553), (266, 45427), (268, 45421), (271, 45394), (280, 45352), (281, 45349), (286, 45334), (288, 45328), (301, 45274), (303, 45265), (352, 45037), (358, 45001),

Gene: Trypo\_53 Start: 47061, Stop: 45382, Start Num: 82

Candidate Starts for Trypo\_53:

(Start: 38 @47178 has 111 MA's), (Start: 69 @47085 has 103 MA's), (Start: 82 @47061 has 11 MA's), (Start: 87 @47004 has 1 MA's), (Start: 89 @46995 has 2 MA's), (104, 46905), (108, 46872), (119, 46815), (121, 46803), (123, 46779), (126, 46767), (127, 46758), (138, 46698), (147, 46608), (151, 46563), (158, 46503), (167, 46449), (173, 46401), (176, 46380), (198, 46248), (208, 46179), (210, 46173), (212, 46146), (214, 46131), (219, 46089), (224, 46041), (227, 46011), (232, 45984), (266, 45858), (268, 45852), (271, 45825), (281, 45780), (286, 45765), (288, 45759), (301, 45705), (303, 45696), (352, 45468), (358, 45432),

Gene: Tydolla\_51 Start: 47892, Stop: 46195, Start Num: 64

Candidate Starts for Tydolla\_51:

(Start: 64 @47892 has 34 MA's), (Start: 103 @47694 has 1 MA's), (108, 47658), (119, 47601), (127, 47544), (134, 47502), (136, 47496), (141, 47439), (146, 47412), (147, 47394), (158, 47289), (171, 47199), (173, 47187), (176, 47166), (183, 47121), (193, 47058), (205, 46974), (209, 46959), (210, 46956), (211, 46953), (212, 46929), (215, 46911), (219, 46872), (224, 46824), (227, 46794), (231, 46770), (238, 46728), (264, 46650), (270, 46623), (277, 46572), (286, 46548), (301, 46500), (312, 46461), (325, 46419), (344, 46314), (352, 46272), (353, 46257),

Gene: TyrionL\_51 Start: 46603, Stop: 44807, Start Num: 38

Candidate Starts for TyrionL\_51:

(Start: 38 @46603 has 111 MA's), (Start: 69 @46510 has 103 MA's), (Start: 82 @46486 has 11 MA's), (Start: 87 @46429 has 1 MA's), (Start: 89 @46420 has 2 MA's), (104, 46330), (108, 46297), (119, 46240), (121, 46228), (123, 46204), (126, 46192), (127, 46183), (138, 46123), (147, 46033), (151, 45988), (158, 45928), (167, 45874), (173, 45826), (176, 45805), (198, 45673), (208, 45604), (210, 45598), (212, 45571), (214, 45556), (219, 45514), (224, 45466), (227, 45436), (232, 45409), (266, 45283), (268, 45277), (271, 45250), (281, 45205), (286, 45190), (288, 45184), (301, 45130), (303, 45121), (352, 44893), (358, 44857),

Gene: UAch1\_52 Start: 46978, Stop: 45275, Start Num: 68

Candidate Starts for UAch1\_52:

(13, 47311), (15, 47284), (Start: 68 @46978 has 66 MA's), (Start: 82 @46954 has 11 MA's), (Start: 87 @46897 has 1 MA's), (Start: 89 @46888 has 2 MA's), (104, 46798), (108, 46765), (119, 46708), (121, 46696), (123, 46672), (126, 46660), (127, 46651), (138, 46591), (147, 46501), (151, 46456), (158, 46396), (173, 46294), (176, 46273), (198, 46141), (208, 46072), (210, 46066), (212, 46039), (214, 46024), (219, 45982), (224, 45934), (227, 45904), (232, 45877), (266, 45751), (268, 45745), (271, 45718), (280, 45676), (281, 45673), (286, 45658), (288, 45652), (301, 45598), (303, 45589), (352, 45361), (358, 45325),

Gene: UncleHowie\_52 Start: 46653, Stop: 44950, Start Num: 68

Candidate Starts for UncleHowie\_52:

(13, 46986), (15, 46959), (Start: 68 @46653 has 66 MA's), (Start: 82 @46629 has 11 MA's), (Start: 87 @46572 has 1 MA's), (Start: 89 @46563 has 2 MA's), (104, 46473), (108, 46440), (119, 46383), (121, 46371), (123, 46347), (126, 46335), (127, 46326), (138, 46266), (147, 46176), (151, 46131), (158, 46071), (173, 45969), (176, 45948), (198, 45816), (208, 45747), (210, 45741), (212, 45714), (214, 45699), (219, 45657), (224, 45609), (227, 45579), (232, 45552), (266, 45426), (268, 45420), (271, 45393), (281, 45348), (286, 45333), (288, 45327), (301, 45273), (303, 45264), (352, 45036), (358, 45000),

Gene: Upyo\_33 Start: 27921, Stop: 26278, Start Num: 79

Candidate Starts for Upyo\_33:

(Start: 79 @27921 has 7 MA's), (83, 27888), (86, 27870), (104, 27744), (108, 27711), (109, 27699), (127, 27603), (134, 27561), (147, 27450), (154, 27387), (163, 27336), (165, 27330), (169, 27294), (173, 27255), (175, 27243), (177, 27231), (181, 27195), (183, 27189), (215, 26982), (219, 26943),



(227, 26865), (237, 26814), (251, 26757), (273, 26673), (286, 26625), (323, 26493), (325, 26481), (352, 26343),

Gene: Usavi\_52 Start: 47045, Stop: 45249, Start Num: 38

Candidate Starts for Usavi\_52:

(Start: 38 @47045 has 111 MA's), (Start: 69 @46952 has 103 MA's), (Start: 82 @46928 has 11 MA's), (Start: 87 @46871 has 1 MA's), (Start: 89 @46862 has 2 MA's), (104, 46772), (108, 46739), (119, 46682), (121, 46670), (123, 46646), (126, 46634), (127, 46625), (138, 46565), (147, 46475), (151, 46430), (158, 46370), (167, 46316), (173, 46268), (176, 46247), (198, 46115), (208, 46046), (210, 46040), (212, 46013), (214, 45998), (219, 45956), (224, 45908), (227, 45878), (232, 45851), (266, 45725), (268, 45719), (271, 45692), (281, 45647), (286, 45632), (288, 45626), (301, 45572), (303, 45563), (352, 45335), (358, 45299),

Gene: Vaishali24\_51 Start: 46624, Stop: 44921, Start Num: 69

Candidate Starts for Vaishali24\_51:

(Start: 38 @46720 has 111 MA's), (Start: 69 @46624 has 103 MA's), (Start: 82 @46600 has 11 MA's), (Start: 87 @46543 has 1 MA's), (Start: 89 @46534 has 2 MA's), (104, 46444), (108, 46411), (119, 46354), (121, 46342), (123, 46318), (126, 46306), (127, 46297), (138, 46237), (147, 46147), (151, 46102), (158, 46042), (173, 45940), (176, 45919), (198, 45787), (208, 45718), (210, 45712), (212, 45685), (214, 45670), (219, 45628), (224, 45580), (227, 45550), (232, 45523), (266, 45397), (268, 45391), (271, 45364), (280, 45322), (281, 45319), (286, 45304), (288, 45298), (301, 45244), (303, 45235), (352, 45007), (358, 44971),

Gene: Valjean\_52 Start: 46949, Stop: 45246, Start Num: 69

Candidate Starts for Valjean\_52:

(13, 47267), (15, 47240), (Start: 69 @46949 has 103 MA's), (Start: 82 @46925 has 11 MA's), (Start: 87 @46868 has 1 MA's), (Start: 89 @46859 has 2 MA's), (104, 46769), (108, 46736), (119, 46679), (121, 46667), (123, 46643), (126, 46631), (127, 46622), (138, 46562), (147, 46472), (151, 46427), (158, 46367), (167, 46313), (173, 46265), (176, 46244), (198, 46112), (208, 46043), (210, 46037), (212, 46010), (214, 45995), (219, 45953), (224, 45905), (227, 45875), (232, 45848), (266, 45722), (268, 45716), (271, 45689), (281, 45644), (286, 45629), (288, 45623), (301, 45569), (303, 45560), (352, 45332), (358, 45296),

Gene: Vaticameos\_48 Start: 44635, Stop: 42932, Start Num: 69

Candidate Starts for Vaticameos\_48:

(Start: 38 @44728 has 111 MA's), (Start: 69 @44635 has 103 MA's), (Start: 82 @44611 has 11 MA's), (Start: 87 @44554 has 1 MA's), (Start: 89 @44545 has 2 MA's), (104, 44455), (108, 44422), (119, 44365), (121, 44353), (123, 44329), (126, 44317), (127, 44308), (138, 44248), (147, 44158), (151, 44113), (158, 44053), (167, 43999), (173, 43951), (176, 43930), (198, 43798), (208, 43729), (210, 43723), (212, 43696), (214, 43681), (219, 43639), (224, 43591), (227, 43561), (232, 43534), (266, 43408), (268, 43402), (271, 43375), (281, 43330), (286, 43315), (288, 43309), (301, 43255), (303, 43246), (352, 43018), (358, 42982),

Gene: Veritas\_51 Start: 46528, Stop: 44825, Start Num: 69

Candidate Starts for Veritas\_51:

(Start: 38 @46621 has 111 MA's), (Start: 69 @46528 has 103 MA's), (Start: 82 @46504 has 11 MA's), (Start: 87 @46447 has 1 MA's), (Start: 89 @46438 has 2 MA's), (104, 46348), (108, 46315), (119, 46258), (121, 46246), (123, 46222), (126, 46210), (127, 46201), (138, 46141), (147, 46051), (151, 46006), (158, 45946), (167, 45892), (173, 45844), (176, 45823), (198, 45691), (208, 45622), (210, 45616), (212, 45589), (214, 45574), (219, 45532), (224, 45484), (227, 45454), (232, 45427), (266, 45301), (268, 45295), (271, 45268), (281, 45223), (286, 45208), (288, 45202), (301, 45148), (303, 45139), (352, 44911), (358, 44875),

Gene: Vic9\_51 Start: 47090, Stop: 45378, Start Num: 67

Candidate Starts for Vic9\_51:

(Start: 67 @47090 has 49 MA's), (75, 47078), (102, 46907), (Start: 103 @46904 has 1 MA's), (108, 46868), (109, 46856), (111, 46847), (119, 46811), (120, 46808), (123, 46775), (134, 46712), (147, 46604), (151, 46565), (163, 46484), (167, 46451), (169, 46442), (173, 46403), (176, 46382), (177, 46379), (183, 46337), (185, 46322), (186, 46307), (193, 46277), (198, 46250), (202, 46226), (203, 46202), (209, 46178), (210, 46175), (212, 46148), (213, 46136), (215, 46130), (219, 46091), (224, 46043), (227, 46013), (237, 45962), (240, 45935), (251, 45887), (253, 45875), (261, 45851), (262, 45848), (265, 45833), (275, 45767), (286, 45734), (309, 45656), (318, 45626), (319, 45623), (322, 45611), (331, 45572), (344, 45494), (352, 45452), (366, 45386),

Gene: Vincenzo\_49 Start: 48162, Stop: 46462, Start Num: 69

Candidate Starts for Vincenzo\_49:

(6, 48621), (Start: 69 @48162 has 103 MA's), (83, 48114), (105, 47970), (108, 47940), (119, 47883), (121, 47871), (126, 47835), (145, 47697), (147, 47676), (163, 47556), (167, 47523), (173, 47475), (177, 47451), (180, 47436), (198, 47322), (207, 47259), (210, 47247), (212, 47220), (213, 47208), (214, 47205), (219, 47163), (224, 47115), (227, 47085), (235, 47043), (237, 47034), (261, 46962), (262, 46959), (266, 46938), (272, 46902), (273, 46896), (275, 46878), (280, 46860), (285, 46845), (295, 46815), (329, 46662), (349, 46554), (352, 46539), (362, 46488),

Gene: VioletZ\_49 Start: 47515, Stop: 45803, Start Num: 69

Candidate Starts for VioletZ\_49:

(Start: 69 @47515 has 103 MA's), (102, 47332), (108, 47293), (111, 47272), (123, 47203), (138, 47122), (145, 47053), (147, 47032), (158, 46933), (163, 46912), (167, 46879), (169, 46870), (172, 46834), (173, 46831), (177, 46807), (194, 46696), (196, 46690), (198, 46678), (208, 46609), (210, 46603), (212, 46576), (213, 46564), (214, 46561), (219, 46519), (224, 46471), (227, 46441), (262, 46306), (265, 46291), (266, 46285), (267, 46282), (272, 46249), (273, 46243), (274, 46234), (280, 46207), (285, 46192), (286, 46189), (290, 46180), (295, 46162), (298, 46135), (303, 46114), (329, 46003), (352, 45880), (359, 45841), (362, 45829),

Gene: Virapocalypse\_52 Start: 47037, Stop: 45241, Start Num: 38

Candidate Starts for Virapocalypse\_52:

(Start: 38 @47037 has 111 MA's), (Start: 69 @46944 has 103 MA's), (Start: 82 @46920 has 11 MA's), (Start: 87 @46863 has 1 MA's), (Start: 89 @46854 has 2 MA's), (104, 46764), (108, 46731), (119, 46674), (121, 46662), (123, 46638), (126, 46626), (127, 46617), (138, 46557), (147, 46467), (151, 46422), (158, 46362), (167, 46308), (173, 46260), (176, 46239), (198, 46107), (208, 46038), (210, 46032), (212, 46005), (214, 45990), (219, 45948), (224, 45900), (227, 45870), (232, 45843), (266, 45717), (268, 45711), (271, 45684), (281, 45639), (286, 45624), (288, 45618), (301, 45564), (303, 45555), (352, 45327), (358, 45291),

Gene: Virgeve\_51 Start: 46811, Stop: 45015, Start Num: 38

Candidate Starts for Virgeve\_51:

(Start: 38 @46811 has 111 MA's), (Start: 69 @46718 has 103 MA's), (Start: 82 @46694 has 11 MA's), (Start: 87 @46637 has 1 MA's), (Start: 89 @46628 has 2 MA's), (104, 46538), (108, 46505), (119, 46448), (121, 46436), (123, 46412), (126, 46400), (127, 46391), (138, 46331), (147, 46241), (151, 46196), (158, 46136), (167, 46082), (173, 46034), (176, 46013), (198, 45881), (208, 45812), (210, 45806), (212, 45779), (214, 45764), (219, 45722), (224, 45674), (227, 45644), (232, 45617), (266, 45491), (268, 45485), (271, 45458), (281, 45413), (286, 45398), (288, 45392), (301, 45338), (303, 45329), (352, 45101), (358, 45065),

Gene: Vista\_52 Start: 46930, Stop: 45251, Start Num: 82

Candidate Starts for Vista\_52:

(13, 47287), (15, 47260), (Start: 68 @46954 has 66 MA's), (Start: 82 @46930 has 11 MA's), (Start: 87 @46873 has 1 MA's), (Start: 89 @46864 has 2 MA's), (104, 46774), (108, 46741), (119, 46684), (121, 46672), (123, 46648), (126, 46636), (127, 46627), (138, 46567), (147, 46477), (151, 46432), (158, 46372), (173, 46270), (176, 46249), (198, 46117), (208, 46048), (210, 46042), (212, 46015), (214, 46000), (219, 45958), (224, 45910), (227, 45880), (232, 45853), (266, 45727), (268, 45721), (271, 45694), (281, 45649), (286, 45634), (288, 45628), (301, 45574), (303, 45565), (352, 45337), (358, 45301),

Gene: Vivaldi\_54 Start: 47616, Stop: 45913, Start Num: 69

Candidate Starts for Vivaldi\_54:

(13, 47928), (15, 47901), (Start: 69 @47616 has 103 MA's), (Start: 82 @47592 has 11 MA's), (Start: 87 @47535 has 1 MA's), (Start: 89 @47526 has 2 MA's), (104, 47436), (108, 47403), (119, 47346), (121, 47334), (123, 47310), (126, 47298), (127, 47289), (138, 47229), (147, 47139), (151, 47094), (158, 47034), (173, 46932), (176, 46911), (198, 46779), (208, 46710), (210, 46704), (212, 46677), (214, 46662), (219, 46620), (224, 46572), (227, 46542), (232, 46515), (266, 46389), (268, 46383), (271, 46356), (281, 46311), (286, 46296), (288, 46290), (301, 46236), (303, 46227), (352, 45999), (358, 45963),

Gene: Vortex\_52 Start: 46651, Stop: 44948, Start Num: 69

Candidate Starts for Vortex\_52:

(Start: 69 @46651 has 103 MA's), (Start: 82 @46627 has 11 MA's), (Start: 87 @46570 has 1 MA's), (Start: 89 @46561 has 2 MA's), (104, 46471), (108, 46438), (119, 46381), (121, 46369), (123, 46345), (126, 46333), (127, 46324), (138, 46264), (147, 46174), (151, 46129), (158, 46069), (167, 46015), (173, 45967), (176, 45946), (198, 45814), (208, 45745), (210, 45739), (212, 45712), (214, 45697), (219, 45655), (224, 45607), (227, 45577), (232, 45550), (266, 45424), (268, 45418), (271, 45391), (280, 45349), (281, 45346), (286, 45331), (288, 45325), (301, 45271), (303, 45262), (352, 45034), (358, 44998),

Gene: Waleliano\_47 Start: 47428, Stop: 45719, Start Num: 69

Candidate Starts for Waleliano\_47:

(Start: 69 @47428 has 103 MA's), (102, 47245), (108, 47206), (111, 47185), (123, 47116), (138, 47035), (145, 46966), (147, 46945), (158, 46846), (163, 46825), (167, 46792), (169, 46783), (172, 46747), (173, 46744), (177, 46720), (194, 46609), (196, 46603), (198, 46591), (208, 46522), (210, 46516), (212, 46489), (213, 46477), (214, 46474), (219, 46432), (224, 46384), (227, 46354), (237, 46303), (262, 46222), (265, 46207), (266, 46201), (267, 46198), (272, 46165), (273, 46159), (274, 46150), (280, 46123), (285, 46108), (286, 46105), (290, 46096), (295, 46078), (298, 46051), (303, 46030), (329, 45919), (352, 45796), (359, 45757), (362, 45745),

Gene: Wallhey\_51 Start: 46514, Stop: 44811, Start Num: 69

Candidate Starts for Wallhey\_51:

(Start: 38 @46607 has 111 MA's), (Start: 69 @46514 has 103 MA's), (Start: 82 @46490 has 11 MA's), (Start: 87 @46433 has 1 MA's), (Start: 89 @46424 has 2 MA's), (104, 46334), (108, 46301), (119, 46244), (121, 46232), (123, 46208), (126, 46196), (127, 46187), (138, 46127), (147, 46037), (151, 45992), (158, 45932), (167, 45878), (173, 45830), (176, 45809), (198, 45677), (208, 45608), (210, 45602), (212, 45575), (214, 45560), (219, 45518), (224, 45470), (227, 45440), (232, 45413), (266, 45287), (268, 45281), (271, 45254), (281, 45209), (286, 45194), (288, 45188), (301, 45134), (303, 45125), (352, 44897), (358, 44861),

Gene: Waterdiva\_52 Start: 47039, Stop: 45243, Start Num: 38

Candidate Starts for Waterdiva\_52:

(Start: 38 @47039 has 111 MA's), (Start: 69 @46946 has 103 MA's), (Start: 82 @46922 has 11 MA's), (Start: 87 @46865 has 1 MA's), (Start: 89 @46856 has 2 MA's), (104, 46766), (108, 46733), (119, 46676), (121, 46664), (123, 46640), (126, 46628), (127, 46619), (138, 46559), (147, 46469), (151,

46424), (158, 46364), (167, 46310), (173, 46262), (176, 46241), (198, 46109), (208, 46040), (210, 46034), (212, 46007), (214, 45992), (219, 45950), (224, 45902), (227, 45872), (232, 45845), (266, 45719), (268, 45713), (271, 45686), (281, 45641), (286, 45626), (288, 45620), (301, 45566), (303, 45557), (352, 45329), (358, 45293),

Gene: Waterfoul\_66 Start: 46161, Stop: 47870, Start Num: 77

Candidate Starts for Waterfoul\_66:

(Start: 77 @46161 has 31 MA's), (92, 46254), (96, 46296), (Start: 103 @46332 has 1 MA's), (104, 46335), (107, 46359), (108, 46368), (116, 46407), (119, 46425), (127, 46482), (131, 46509), (132, 46512), (140, 46575), (147, 46635), (150, 46665), (151, 46674), (161, 46749), (162, 46752), (168, 46794), (169, 46797), (172, 46833), (173, 46836), (181, 46902), (182, 46905), (183, 46908), (185, 46923), (186, 46938), (189, 46953), (196, 46983), (198, 46995), (212, 47097), (213, 47109), (214, 47112), (215, 47115), (217, 47136), (219, 47154), (223, 47199), (224, 47202), (230, 47241), (233, 47262), (265, 47391), (275, 47460), (276, 47463), (286, 47496), (287, 47499), (288, 47502), (313, 47565), (320, 47574), (322, 47580), (327, 47604), (339, 47637), (348, 47700), (352, 47721), (353, 47736), (361, 47763), (362, 47772), (364, 47787),

Gene: Weher20\_52 Start: 46945, Stop: 45242, Start Num: 69

Candidate Starts for Weher20\_52:

(Start: 69 @46945 has 103 MA's), (Start: 82 @46921 has 11 MA's), (Start: 87 @46864 has 1 MA's), (Start: 89 @46855 has 2 MA's), (104, 46765), (108, 46732), (119, 46675), (121, 46663), (123, 46639), (126, 46627), (127, 46618), (138, 46558), (147, 46468), (151, 46423), (158, 46363), (167, 46309), (173, 46261), (176, 46240), (198, 46108), (208, 46039), (210, 46033), (212, 46006), (214, 45991), (219, 45949), (224, 45901), (227, 45871), (232, 45844), (266, 45718), (268, 45712), (271, 45685), (281, 45640), (286, 45625), (288, 45619), (301, 45565), (303, 45556), (352, 45328), (358, 45292),

Gene: West99\_51 Start: 46707, Stop: 44992, Start Num: 67

Candidate Starts for West99\_51:

(Start: 67 @46707 has 49 MA's), (75, 46695), (102, 46524), (Start: 103 @46521 has 1 MA's), (108, 46485), (109, 46473), (111, 46464), (119, 46428), (120, 46425), (123, 46392), (134, 46329), (147, 46221), (151, 46182), (163, 46101), (167, 46068), (169, 46059), (173, 46020), (176, 45999), (177, 45996), (183, 45954), (185, 45939), (186, 45924), (193, 45894), (198, 45867), (203, 45819), (209, 45795), (210, 45792), (212, 45765), (213, 45753), (215, 45747), (219, 45708), (224, 45660), (227, 45630), (228, 45624), (237, 45579), (251, 45504), (253, 45492), (261, 45465), (262, 45462), (265, 45447), (275, 45381), (286, 45348), (309, 45270), (318, 45240), (319, 45237), (322, 45225), (331, 45186), (344, 45108), (352, 45066), (366, 45000),

Gene: Widow\_34 Start: 27834, Stop: 26191, Start Num: 79

Candidate Starts for Widow\_34:

(71, 27846), (Start: 79 @27834 has 7 MA's), (84, 27795), (85, 27792), (86, 27786), (95, 27711), (102, 27666), (108, 27627), (118, 27579), (119, 27576), (127, 27519), (135, 27474), (141, 27414), (142, 27393), (144, 27390), (147, 27366), (165, 27246), (166, 27228), (169, 27210), (173, 27171), (175, 27159), (177, 27147), (181, 27111), (183, 27105), (185, 27090), (194, 27036), (213, 26904), (215, 26898), (219, 26859), (235, 26739), (255, 26661), (264, 26637), (286, 26538), (325, 26394), (352, 26256), (363, 26202),

Gene: Windsor\_51 Start: 46743, Stop: 44947, Start Num: 38

Candidate Starts for Windsor\_51:

(Start: 38 @46743 has 111 MA's), (Start: 69 @46650 has 103 MA's), (Start: 82 @46626 has 11 MA's), (Start: 87 @46569 has 1 MA's), (Start: 89 @46560 has 2 MA's), (104, 46470), (108, 46437), (119, 46380), (121, 46368), (123, 46344), (126, 46332), (127, 46323), (138, 46263), (147, 46173), (151, 46128), (158, 46068), (167, 46014), (173, 45966), (176, 45945), (198, 45813), (208, 45744), (210, 45738), (212, 45711), (214, 45696), (219, 45654), (224, 45606), (227, 45576), (232, 45549), (266,

45423), (268, 45417), (271, 45390), (281, 45345), (286, 45330), (288, 45324), (301, 45270), (303, 45261), (352, 45033), (358, 44997),

Gene: Wooper\_49 Start: 42310, Stop: 40640, Start Num: 67

Candidate Starts for Wooper\_49:

(Start: 67 @42310 has 49 MA's), (92, 42205), (95, 42175), (102, 42130), (Start: 103 @42127 has 1 MA's), (108, 42091), (109, 42079), (145, 41845), (147, 41824), (158, 41722), (172, 41623), (173, 41620), (178, 41587), (196, 41479), (208, 41398), (209, 41395), (210, 41392), (212, 41365), (213, 41353), (214, 41350), (219, 41308), (227, 41230), (235, 41188), (258, 41110), (266, 41080), (267, 41077), (275, 41020), (285, 40990), (286, 40987), (288, 40981), (296, 40954), (332, 40834), (352, 40717), (368, 40651),

Gene: Xavier\_51 Start: 46658, Stop: 44955, Start Num: 69

Candidate Starts for Xavier\_51:

(Start: 69 @46658 has 103 MA's), (Start: 82 @46634 has 11 MA's), (Start: 87 @46577 has 1 MA's), (Start: 89 @46568 has 2 MA's), (104, 46478), (108, 46445), (119, 46388), (121, 46376), (123, 46352), (126, 46340), (127, 46331), (138, 46271), (147, 46181), (151, 46136), (158, 46076), (167, 46022), (173, 45974), (176, 45953), (198, 45821), (208, 45752), (210, 45746), (212, 45719), (214, 45704), (219, 45662), (224, 45614), (227, 45584), (232, 45557), (266, 45431), (268, 45425), (271, 45398), (280, 45356), (281, 45353), (286, 45338), (288, 45332), (301, 45278), (303, 45269), (352, 45041), (358, 45005),

Gene: Xincheng\_48 Start: 48498, Stop: 46786, Start Num: 69

Candidate Starts for Xincheng\_48:

(Start: 69 @48498 has 103 MA's), (102, 48315), (108, 48276), (111, 48255), (123, 48186), (145, 48036), (147, 48015), (158, 47916), (163, 47895), (167, 47862), (169, 47853), (173, 47814), (176, 47793), (177, 47790), (180, 47775), (194, 47679), (196, 47673), (198, 47661), (208, 47592), (210, 47586), (212, 47559), (213, 47547), (214, 47544), (219, 47502), (224, 47454), (227, 47424), (237, 47373), (262, 47289), (265, 47274), (266, 47268), (272, 47232), (273, 47226), (280, 47190), (285, 47175), (286, 47172), (290, 47163), (295, 47145), (298, 47118), (303, 47097), (329, 46986), (338, 46953), (352, 46863), (359, 46824),

Gene: Xkcd426\_57 Start: 50423, Stop: 52258, Start Num: 76

Candidate Starts for Xkcd426\_57:

(34, 50267), (59, 50357), (62, 50390), (Start: 76 @50423 has 1 MA's), (102, 50600), (104, 50606), (112, 50663), (122, 50729), (124, 50735), (134, 50795), (143, 50867), (149, 50918), (153, 50951), (155, 50978), (160, 51008), (184, 51176), (187, 51203), (191, 51221), (209, 51332), (210, 51335), (219, 51419), (282, 51788), (314, 51986), (316, 51992), (322, 52016), (348, 52145), (354, 52193),

Gene: YDN12\_54 Start: 43749, Stop: 45587, Start Num: 77

Candidate Starts for YDN12\_54:

(Start: 77 @43749 has 31 MA's), (90, 43830), (92, 43836), (94, 43863), (102, 43923), (111, 43983), (124, 44058), (126, 44067), (131, 44103), (137, 44127), (143, 44190), (147, 44214), (149, 44241), (153, 44274), (155, 44301), (165, 44349), (168, 44379), (184, 44499), (185, 44508), (187, 44526), (209, 44655), (210, 44658), (213, 44697), (219, 44742), (220, 44745), (230, 44835), (282, 45111), (283, 45117), (291, 45138), (316, 45318), (324, 45354), (328, 45369), (348, 45471), (354, 45519), (357, 45528),

Gene: Yago84\_45 Start: 40488, Stop: 38827, Start Num: 67

Candidate Starts for Yago84\_45:

(Start: 67 @40488 has 49 MA's), (86, 40422), (92, 40380), (Start: 103 @40302 has 1 MA's), (104, 40299), (108, 40266), (119, 40209), (145, 40023), (147, 40002), (163, 39882), (173, 39801), (176, 39780), (180, 39762), (181, 39741), (183, 39735), (199, 39642), (209, 39576), (210, 39573), (212,

39546), (214, 39531), (219, 39489), (227, 39411), (236, 39363), (301, 39129), (303, 39120), (321, 39060), (322, 39057), (331, 39018), (346, 38934), (352, 38898),

Gene: Yahalom\_51 Start: 47169, Stop: 45472, Start Num: 64

Candidate Starts for Yahalom\_51:

(Start: 64 @47169 has 34 MA's), (Start: 103 @46971 has 1 MA's), (108, 46935), (119, 46878), (127, 46821), (134, 46779), (136, 46773), (141, 46716), (146, 46689), (147, 46671), (158, 46566), (171, 46476), (173, 46464), (176, 46443), (183, 46398), (193, 46335), (205, 46251), (209, 46236), (210, 46233), (211, 46230), (212, 46206), (215, 46188), (219, 46149), (224, 46101), (227, 46071), (231, 46047), (238, 46005), (264, 45927), (270, 45900), (277, 45849), (286, 45825), (301, 45777), (312, 45738), (325, 45696), (344, 45591), (352, 45549), (353, 45534),

Gene: Yinz\_52 Start: 47014, Stop: 45317, Start Num: 64

Candidate Starts for Yinz\_52:

(Start: 64 @47014 has 34 MA's), (Start: 103 @46816 has 1 MA's), (108, 46780), (119, 46723), (127, 46666), (134, 46624), (136, 46618), (141, 46561), (146, 46534), (147, 46516), (158, 46411), (171, 46321), (173, 46309), (176, 46288), (183, 46243), (193, 46180), (205, 46096), (209, 46081), (210, 46078), (211, 46075), (212, 46051), (215, 46033), (219, 45994), (224, 45946), (227, 45916), (231, 45892), (238, 45850), (264, 45772), (270, 45745), (277, 45694), (286, 45670), (301, 45622), (312, 45583), (325, 45541), (344, 45436), (347, 45421), (352, 45394), (353, 45379),

Gene: Yoshand\_53 Start: 47202, Stop: 45406, Start Num: 38

Candidate Starts for Yoshand\_53:

(Start: 38 @47202 has 111 MA's), (Start: 69 @47109 has 103 MA's), (Start: 82 @47085 has 11 MA's), (Start: 87 @47028 has 1 MA's), (Start: 89 @47019 has 2 MA's), (104, 46929), (108, 46896), (119, 46839), (121, 46827), (123, 46803), (126, 46791), (127, 46782), (138, 46722), (147, 46632), (151, 46587), (158, 46527), (173, 46425), (176, 46404), (198, 46272), (208, 46203), (210, 46197), (212, 46170), (214, 46155), (219, 46113), (224, 46065), (227, 46035), (232, 46008), (266, 45882), (268, 45876), (271, 45849), (280, 45807), (281, 45804), (286, 45789), (288, 45783), (301, 45729), (303, 45720), (352, 45492), (358, 45456),

Gene: YouGoGlencoco\_52 Start: 46948, Stop: 45245, Start Num: 69

Candidate Starts for YouGoGlencoco\_52:

(Start: 38 @47041 has 111 MA's), (Start: 69 @46948 has 103 MA's), (Start: 82 @46924 has 11 MA's), (Start: 87 @46867 has 1 MA's), (Start: 89 @46858 has 2 MA's), (104, 46768), (108, 46735), (119, 46678), (121, 46666), (123, 46642), (126, 46630), (127, 46621), (138, 46561), (147, 46471), (151, 46426), (158, 46366), (167, 46312), (173, 46264), (176, 46243), (198, 46111), (208, 46042), (210, 46036), (212, 46009), (214, 45994), (219, 45952), (224, 45904), (227, 45874), (232, 45847), (266, 45721), (268, 45715), (271, 45688), (281, 45643), (286, 45628), (288, 45622), (301, 45568), (303, 45559), (352, 45331), (358, 45295),

Gene: Zaider\_53 Start: 47178, Stop: 45475, Start Num: 68

Candidate Starts for Zaider\_53:

(13, 47511), (15, 47484), (Start: 68 @47178 has 66 MA's), (Start: 82 @47154 has 11 MA's), (Start: 87 @47097 has 1 MA's), (Start: 89 @47088 has 2 MA's), (104, 46998), (108, 46965), (119, 46908), (121, 46896), (123, 46872), (126, 46860), (127, 46851), (138, 46791), (147, 46701), (151, 46656), (158, 46596), (167, 46542), (173, 46494), (176, 46473), (198, 46341), (208, 46272), (210, 46266), (212, 46239), (214, 46224), (219, 46182), (224, 46134), (227, 46104), (232, 46077), (266, 45951), (268, 45945), (271, 45918), (281, 45873), (286, 45858), (288, 45852), (301, 45798), (303, 45789), (352, 45561), (358, 45525),

Gene: Zelda\_52 Start: 46995, Stop: 45292, Start Num: 68

Candidate Starts for Zelda\_52:

(Start: 68 @46995 has 66 MA's), (Start: 82 @46971 has 11 MA's), (Start: 87 @46914 has 1 MA's), (Start: 89 @46905 has 2 MA's), (104, 46815), (108, 46782), (119, 46725), (121, 46713), (123, 46689), (126, 46677), (127, 46668), (138, 46608), (147, 46518), (151, 46473), (158, 46413), (167, 46359), (173, 46311), (176, 46290), (198, 46158), (208, 46089), (210, 46083), (212, 46056), (214, 46041), (219, 45999), (224, 45951), (227, 45921), (232, 45894), (266, 45768), (268, 45762), (271, 45735), (281, 45690), (286, 45675), (288, 45669), (301, 45615), (303, 45606), (352, 45378), (358, 45342),

Gene: Zemanar\_48 Start: 47409, Stop: 45700, Start Num: 69

Candidate Starts for Zemanar\_48:

(Start: 69 @47409 has 103 MA's), (102, 47226), (108, 47187), (111, 47166), (123, 47097), (138, 47016), (145, 46947), (147, 46926), (158, 46827), (163, 46806), (167, 46773), (169, 46764), (172, 46728), (173, 46725), (177, 46701), (194, 46590), (196, 46584), (198, 46572), (208, 46503), (210, 46497), (212, 46470), (213, 46458), (214, 46455), (219, 46413), (224, 46365), (227, 46335), (237, 46284), (262, 46203), (265, 46188), (266, 46182), (267, 46179), (272, 46146), (273, 46140), (274, 46131), (280, 46104), (285, 46089), (286, 46086), (290, 46077), (295, 46059), (298, 46032), (303, 46011), (329, 45900), (352, 45777), (359, 45738),

Gene: Zenteno07\_56 Start: 46944, Stop: 45178, Start Num: 74

Candidate Starts for Zenteno07\_56:

(44, 47031), (Start: 74 @46944 has 2 MA's), (104, 46764), (108, 46731), (145, 46488), (147, 46467), (151, 46428), (158, 46368), (159, 46365), (163, 46347), (173, 46266), (177, 46242), (196, 46125), (210, 46038), (212, 46011), (213, 45999), (214, 45996), (219, 45954), (224, 45906), (227, 45876), (232, 45849), (237, 45825), (266, 45672), (269, 45657), (315, 45462), (317, 45453), (322, 45435), (332, 45393), (352, 45279), (360, 45237),

Gene: Zonia\_52 Start: 46941, Stop: 45262, Start Num: 82

Candidate Starts for Zonia\_52:

(Start: 38 @47058 has 111 MA's), (Start: 69 @46965 has 103 MA's), (Start: 82 @46941 has 11 MA's), (Start: 87 @46884 has 1 MA's), (Start: 89 @46875 has 2 MA's), (104, 46785), (108, 46752), (119, 46695), (121, 46683), (123, 46659), (126, 46647), (127, 46638), (138, 46578), (147, 46488), (151, 46443), (158, 46383), (167, 46329), (173, 46281), (176, 46260), (198, 46128), (208, 46059), (210, 46053), (212, 46026), (214, 46011), (219, 45969), (224, 45921), (227, 45891), (232, 45864), (266, 45738), (268, 45732), (271, 45705), (281, 45660), (286, 45645), (288, 45639), (301, 45585), (303, 45576), (352, 45348), (358, 45312),