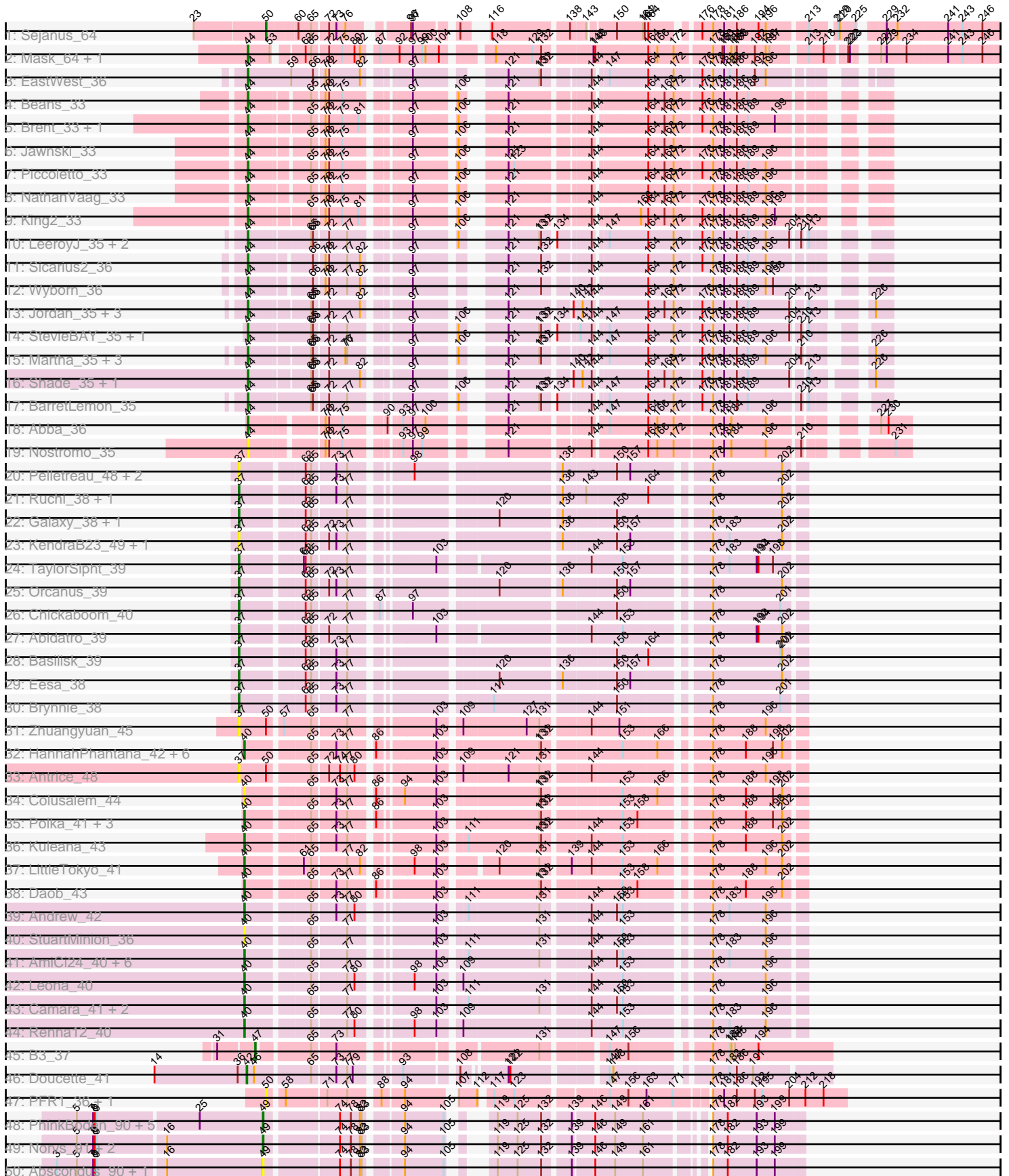
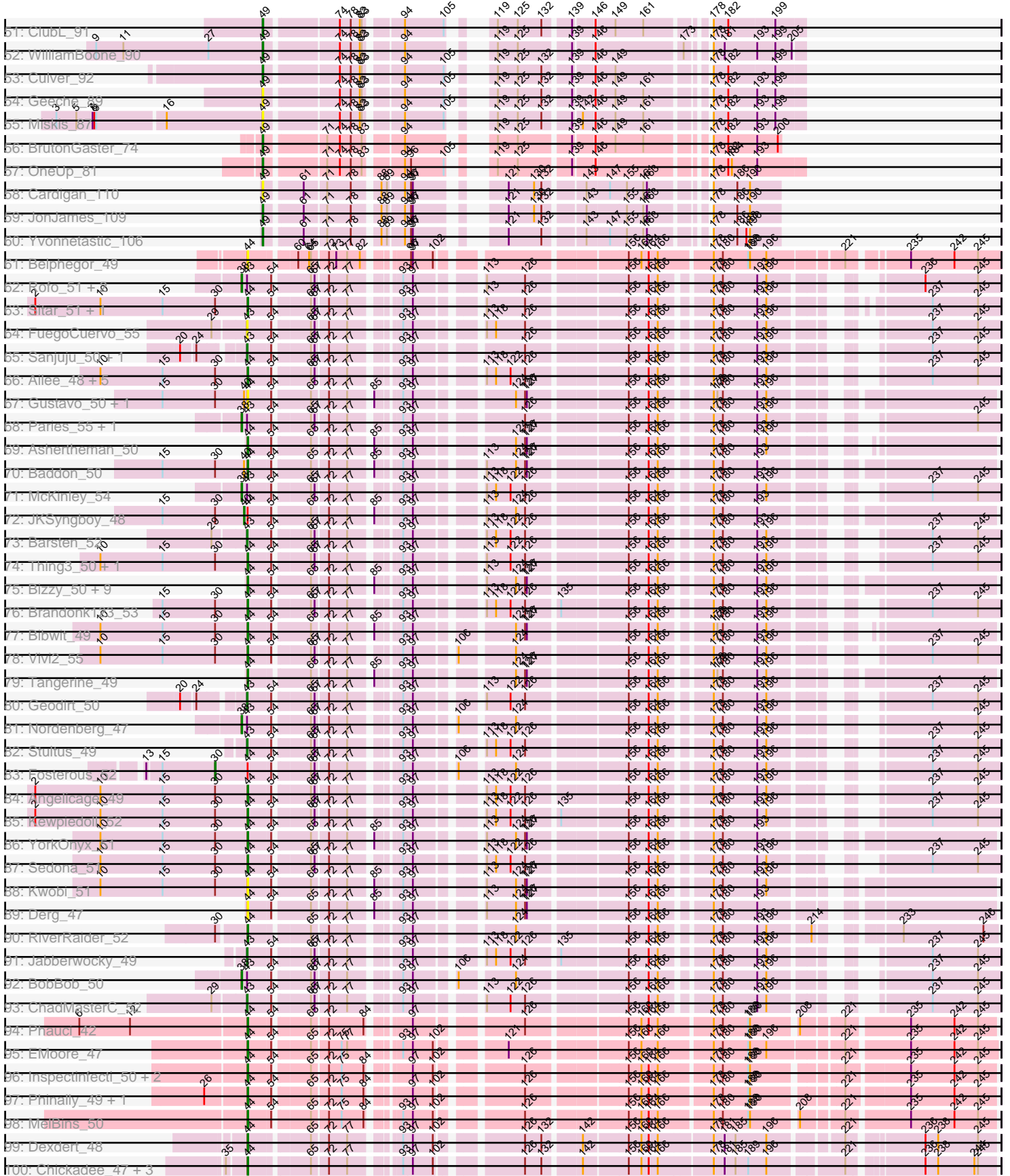


Pham 202611



Pham 202611



Pham 202611

r01: EdmundFerry_46 + 2	35	44		85	72	71		99	7	102				126	132	142	156	160	166	178	184	188	196			206	208	242	246		
r02: APunk_52 + 4				85	72	71		91	70	72						142	156	166	166	178	184	188	196			216	216	224	224		
r03: Zlitch_54				85	72	71		91	70	72						142	156	166	166	178	184	188	196			216	216	224	224		
r04: Zipp_52 + 3				85	72	71		91	70	72						142	156	166	166	178	184	188	196			216	216	224	224		
r05: ViaConnectus_51				85	72	71		91	70	72						142	156	166	166	178	184	188	196			216	216	224	224		
r06: Tardus_53				85	72	71	84	91	70	72		110	114	122	126	142	144	166	166	178	184	188	196			216	216	224	224	236	238
r07: Lilbeanie_53				71	78			94	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r08: DatBot_90				72	78			94	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r09: SpeedDemon_950				91	72	78		94	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r10: Mollmur_94				91	72	78		94	70	72		101				142	144	156	156	166	178	184	188	196			216	216	224	224	
r11: Daredevil_84				72	78			94	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r12: Bantam_94				61	78			94	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r13: Townmatter_86				80	88	72	71	91	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r14: ObLaDi_40				80	88	72	71	91	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r15: Aleemily_39 + 2				80	88	72	71	91	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r16: Morgana_40				80	72			91	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r17: Altadena_37				80	72			91	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r18: Circuit_35				80	72			91	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r19: Bumble_35				80	72			91	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r20: Llmact1015_40 + 2				80	72			91	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r21: Kievey_38				80	72			91	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r22: Bolt007_38				80	72			91	70	72						142	144	156	156	166	178	184	188	196			216	216	224	224	
r23: TripleJ_55				80	72	81		91	70	72		108				142	144	156	156	166	178	184	188	196			216	216	224	224	
r24: HC_46	21			44	55	85	76	82	91	70	72		108	113		132	138	156	166	178	184	188	196			216	216	224	224		
r25: Brujita_49 + 1				50	55	85	76	82	91	70	72		108	113		132	138	156	166	178	184	188	196			216	216	224	224		
r26: QueenHazel_44 + 1				50	55	85	76	82	91	70	72		108	113		132	138	156	166	178	184	188	196			216	216	224	224		
r27: Babsiella_48				50	55	85	76	82	91	70	72		108	113	123	138	143	156	166	178	184	188	196			216	216	224	224		
r28: Spash_58				41	50	86	73	79	91	70	72		108	113	123	138	143	156	166	178	184	188	196			216	216	224	224		
r29: Che9c_61				41	50	86	73	79	91	70	72		108	113	123	138	143	156	166	178	184	188	196			216	216	224	224		
r30: Rebel_44 + 14				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r31: Kevin1_50 + 2				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r32: EGUnicom_49				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r33: Philonius_48				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r34: Schnauzer_49 + 14				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r35: Scitech_45				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r36: Bosection6_48				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r37: Shweta_46				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r38: MichelleMyBell_48				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r39: SkinnyPete_45	11	28		50	55	85	76	82	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r40: Silvy_46 + 1				50	55	85	76	82	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r41: Camster_47 + 6				50	55	85	76	82	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r42: CactusJack_46 + 15	1	28		50	55	85	76	82	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r43: TechAge_46 + 20	1	28		50	55	85	76	82	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r44: FirstPlacePU_47				50	55	85	76	82	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r45: Pygmy_50				50	55	85	76	82	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r46: Xavia_54	32	33		41	50	86	73	79	91	70	72		108	113	121	138	143	156	166	178	184	188	196			216	216	224	224		
r47: Nazo_49 + 1				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r48: ThuaThua_53	23			50	55	85	76	82	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r49: Phayonce_47 + 1				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		
r50: Purky_52				41	50	86	73	79	91	70	72		108	113		134	138	156	166	178	184	188	196			216	216	224	224		



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 202611 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202611 has 313 members, 53 are drafts.

Phages represented in each track:

- Track 1 : Sejanus\_64
- Track 2 : Mask\_64, Dori\_64
- Track 3 : EastWest\_36
- Track 4 : Beans\_33
- Track 5 : Brent\_33, Franzy\_33
- Track 6 : Jawnski\_33
- Track 7 : Piccoletto\_33
- Track 8 : NathanVaag\_33
- Track 9 : King2\_33
- Track 10 : LeeroyJ\_35, BigDome\_35, Timinator\_35
- Track 11 : Sicarius2\_36
- Track 12 : Wyborn\_36
- Track 13 : Jordan\_35, Zartrosa\_35, JKerns\_35, Pippa\_35
- Track 14 : StevieBAY\_35, GravityBall\_35
- Track 15 : Martha\_35, BossLady\_35, Grekaycon\_35, TaeYoung\_35
- Track 16 : Shade\_35, Sonny\_35
- Track 17 : BarretLemon\_35
- Track 18 : Abba\_36
- Track 19 : Nostromo\_35
- Track 20 : Pelletreau\_48, Westrich\_47, Gravel\_48
- Track 21 : Ruchi\_38, Vulpecula\_38
- Track 22 : Galaxy\_38, Jamun\_38
- Track 23 : KendraB23\_49, Toad24\_41
- Track 24 : TaylorSipht\_39
- Track 25 : Orcanus\_39
- Track 26 : Chickaboom\_40
- Track 27 : Abidatro\_39
- Track 28 : Basilisk\_39
- Track 29 : Eesa\_38
- Track 30 : Brynnie\_38
- Track 31 : Zhuangyuan\_45
- Track 32 : HannahPhantana\_42, Coral\_41, Bedetta\_46, Cote\_43, Jerole\_51, Amelia\_41, Bibble12\_45
- Track 33 : Antrice\_48
- Track 34 : Colusalem\_44
- Track 35 : Polka\_41, Kepler\_43, Melons\_43, Lunar\_43
- Track 36 : Kuleana\_43

- Track 37 : LittleTokyo\_41
- Track 38 : Daob\_43
- Track 39 : Andrew\_42
- Track 40 : StuartMinion\_36
- Track 41 : AmiCi24\_40, RedFox\_41, Juno112\_40, Atlantica\_41, Rattail\_41, PhluffyCoco\_41, HamCheese\_40
- Track 42 : Leona\_40
- Track 43 : Camara\_41, KHumphrey\_41, Glotell\_43
- Track 44 : Renna12\_40
- Track 45 : B3\_37
- Track 46 : Doucette\_41
- Track 47 : PFR1\_36, PFR2\_38
- Track 48 : PhinkBoden\_90, Cucurbita\_92, Lozinak\_91, Bachita\_93, Engineer\_92, Smoothie\_92
- Track 49 : Norvs\_91, Toniann\_91, Aphelion\_90
- Track 50 : Abscondus\_90, Dusty\_87
- Track 51 : ClubL\_91
- Track 52 : WilliamBoone\_90
- Track 53 : Culver\_92
- Track 54 : Geeche\_89
- Track 55 : Miskis\_87
- Track 56 : BrutonGaster\_74
- Track 57 : OneUp\_81
- Track 58 : Cardigan\_110
- Track 59 : JonJames\_109
- Track 60 : Yvonnetastic\_106
- Track 61 : Belphegor\_49
- Track 62 : Rofo\_51, Charming\_52, Tangent\_52
- Track 63 : Sitar\_51, Lennon\_51
- Track 64 : FuegoCuervo\_55
- Track 65 : Sanjuju\_50, Fitzgerald\_50
- Track 66 : Ailee\_48, MoontowerMania\_51, Affeca\_49, Keitabear\_51, Shivanishola\_51, Love\_56
- Track 67 : Gustavo\_50, Saronaya\_50
- Track 68 : Paries\_55, Galadriel\_52
- Track 69 : Ashertheman\_50
- Track 70 : Baddon\_50
- Track 71 : McKinley\_54
- Track 72 : JKSyngboy\_48
- Track 73 : Barsten\_52
- Track 74 : Thing3\_50, Kamashten\_50
- Track 75 : Bizzy\_50, Baumdotcom\_48, Ribeye\_50, Flatwoods\_50, Tycho\_49, StorminNorm\_49, SchottB\_48, Gaea\_49, LilHam\_47, Kroos\_50
- Track 76 : Brandonk123\_53
- Track 77 : Bibwit\_49
- Track 78 : Vivi2\_55
- Track 79 : Tangerine\_49
- Track 80 : Geodirt\_50
- Track 81 : Nordenberg\_47
- Track 82 : Stultus\_49
- Track 83 : Fosterous\_52
- Track 84 : Angelicage\_49
- Track 85 : Kewpiedoll\_52

- Track 86 : YorkOnyx\_51
- Track 87 : Sedona\_51
- Track 88 : Kwobi\_51
- Track 89 : Derg\_47
- Track 90 : RiverRaider\_52
- Track 91 : Jabberwocky\_49
- Track 92 : BobBob\_50
- Track 93 : ChadMasterC\_52
- Track 94 : Phauci\_42
- Track 95 : EMoore\_47
- Track 96 : Inspectinfecti\_50, Ali17\_47, Hans\_51
- Track 97 : Phinally\_49, Leonard\_49
- Track 98 : MelBins\_50
- Track 99 : Dextert\_48
- Track 100 : Chickadee\_47, Kwekel\_47, Tiamoceli\_48, Twonlo\_45
- Track 101 : EdmundFerry\_46, GTE6\_47, RoadKill\_45
- Track 102 : APunk\_52, Sampson\_51, Scioto\_52, Natkenzie\_51, Abblin\_51
- Track 103 : Zitch\_54
- Track 104 : Zipp\_52, Delrey21\_51, DoctorFroggo\_51, Verity\_51
- Track 105 : ViaConlectus\_51
- Track 106 : Tardus\_53
- Track 107 : Lilbeanie\_53
- Track 108 : DatBoi\_90
- Track 109 : SpeedDemon\_950
- Track 110 : Mollymur\_94
- Track 111 : Daredevil\_84
- Track 112 : Bantam\_94
- Track 113 : Towmatter\_86
- Track 114 : ObLaDi\_40
- Track 115 : Aleemily\_39, ModicumRichard\_40, Cafasso\_40
- Track 116 : Morgana\_40
- Track 117 : Altadena\_37
- Track 118 : Circuit\_35
- Track 119 : Bumble\_35
- Track 120 : Lilmac1015\_40, CalWood4100\_40, Prairie\_37
- Track 121 : Klevey\_38
- Track 122 : Bolt007\_38
- Track 123 : TripleJ\_55
- Track 124 : HC\_46
- Track 125 : Brujita\_49, Island3\_49
- Track 126 : QueenHazel\_44, Xula\_43
- Track 127 : Babsiella\_48
- Track 128 : Sbash\_58
- Track 129 : Che9c\_61
- Track 130 : Rebel\_44, ShrimpFriedEgg\_52, Nenae\_52, Jamie19\_46, Purgamenstris\_52, Raymond7\_46, Panchino\_45, BabeRuth\_53, Andies\_45, Phrann\_49, Redi\_52, Hanako\_52, PhancyPhin\_52, SpongeBob\_46, Snekmaggedon\_46
- Track 131 : Kevin1\_50, Rubeelu\_51, Butters\_51
- Track 132 : EGUnicorn\_49
- Track 133 : Philonius\_48
- Track 134 : Schnauzer\_49, Duplicity\_48, Fulbright\_47, Melville\_51, Carcharodon\_48, Phloss\_46, Gex\_48, Magsby\_48, Silvafighter\_49, Tapioca\_50,

- Parmesanjohn\_48, Xerxes\_48, Chewbacca\_50, Pipsqueaks\_48, Smurph\_48
- Track 135 : Scitech\_45
  - Track 136 : Bosection6\_48
  - Track 137 : Shweta\_46
  - Track 138 : MichelleMyBell\_48
  - Track 139 : SkinnyPete\_45
  - Track 140 : Silvy\_46, Aggie\_46
  - Track 141 : Camster\_47, Bogie\_50, GreaseLightnin\_47, Phineas\_48, Shipwreck\_50, HUHilltop\_48, Sonah\_47
  - Track 142 : CactusJack\_46, StressBall\_46, Willsammy\_45, Xeno\_48, Atcoo\_46, Glaske\_46, StevieRay\_46, Brusacoram\_46, Gavriela\_46, Phalm\_46, Megiddo\_46, Bunnies\_47, Ksquared\_46, KilKor\_46, Thespis\_46, Juniormint\_47
  - Track 143 : Techage\_46, Malithi\_47, Phegasus\_47, Arib1\_47, Zilizebeth\_47, Charlie\_48, Bartholomew\_46, Journey\_47, Vidya\_46, Dynamo\_47, Kari\_46, Jebeks\_48, Fishburne\_46, Langerak\_47, Jung\_45, Margethe\_47, Majeke\_47, Necropolis\_46, Polkaroo\_47, Venti\_47, Donovan\_47
  - Track 144 : FirstPlacePfu\_47
  - Track 145 : Pygmy\_50
  - Track 146 : Xavia\_54
  - Track 147 : Nazo\_49, BigNuz\_48
  - Track 148 : ThulaThula\_53
  - Track 149 : Phayonce\_47, Mao1\_65
  - Track 150 : Purky\_52
  - Track 151 : Jace\_32
  - Track 152 : Lukepolites\_37
  - Track 153 : VanLee\_37
  - Track 154 : ValentiniPuff\_98

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

The start number called the most often in the published annotations is 44, it was called in 118 of the 260 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- APunk\_52, Abba\_36, Abblin\_51, Affeca\_49, Ailee\_48, Ali17\_47, Andies\_45, Angelicage\_49, Ashertheman\_50, BabeRuth\_53, Baddon\_50, BarretLemon\_35, Baumdotcom\_48, Beans\_33, Belphegor\_49, Bibwit\_49, BigDome\_35, Bizzy\_50, Bosection6\_48, BossLady\_35, Brandonk123\_53, Brent\_33, Brujita\_49, Butters\_51, Carcharodon\_48, Chewbacca\_50, Chickadee\_47, Delrey21\_51, Derg\_47, Dextert\_48, DoctorFroggo\_51, Dori\_64, Duplicity\_48, EGUnicorn\_49, EMoore\_47, EastWest\_36, EdmundFerry\_46, Flatwoods\_50, Franzy\_33, Fulbright\_47, GTE6\_47, Gaea\_49, Gex\_48, GravityBall\_35, Grekaycon\_35, Gustavo\_50, Hanako\_52, Hans\_51, Inspectinfecti\_50, Island3\_49, JKerns\_35, Jamie19\_46, Jawnski\_33, Jordan\_35, Kamashten\_50, Keitabear\_51, Kevin1\_50, Kewpiedoll\_52, King2\_33, Kroos\_50, Kwekel\_47, Kwobi\_51, LeeroyJ\_35, Lennon\_51, Leonard\_49, LilHam\_47, Lilbeanie\_53, Love\_56, Magsby\_48, Martha\_35, Mask\_64, MelBins\_50, Melville\_51, MoontowerMania\_51, NathanVaag\_33, Natkenzie\_51, Nенаe\_52, Nostromo\_35, Panchino\_45, Parmesanjohn\_48, PhancyPhin\_52, Phauci\_42, Phinally\_49, Phloss\_46, Phrann\_49, Piccoletto\_33, Pippa\_35, Pipsqueaks\_48, Purgamenstris\_52, Raymond7\_46, Rebel\_44, Redi\_52, Ribeye\_50, RiverRaider\_52, RoadKill\_45,



Rubeelu\_51, Sampson\_51, Saronaya\_50, Schnauzer\_49, SchottB\_48, Scioto\_52, Scitech\_45, Sedona\_51, Shade\_35, Shivanishola\_51, ShrimpFriedEgg\_52, Shweta\_46, Sicarius2\_36, Silvafighter\_49, Sitar\_51, Smurph\_48, Snekmaggon\_46, Sonny\_35, SpongeBob\_46, StevieBAY\_35, StorminNorm\_49, TaeYoung\_35, Tangerine\_49, Tapioca\_50, Tardus\_53, Thing3\_50, ThulaThula\_53, Tiamoceli\_48, Timinator\_35, TripleJ\_55, Twonlo\_45, Tycho\_49, Verity\_51, ViaConlectus\_51, Vivi2\_55, Wyborn\_36, Xerxes\_48, YorkOnyx\_51, Zartrosa\_35, Zipp\_52, Zitch\_54,

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

- Fosterous\_52, JKSyngboy\_48,

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

- Abidatro\_39, Abscondus\_90, Aggie\_46, Aleemily\_39, Altadena\_37, Amelia\_41, AmiCi24\_40, Andrew\_42, Antrice\_48, Aphelion\_90, Arib1\_47, Atcoo\_46, Atlantica\_41, B3\_37, Babsiella\_48, Bachita\_93, Bantam\_94, Barsten\_52, Bartholomew\_46, Basilisk\_39, Bedetta\_46, Bible12\_45, BigNuz\_48, BobBob\_50, Bogie\_50, Bolt007\_38, Brusacoram\_46, BrutonGaster\_74, Brynnie\_38, Bumble\_35, Bunnies\_47, CactusJack\_46, Cafasso\_40, CalWood4100\_40, Camara\_41, Camster\_47, Cardigan\_110, ChadMasterC\_52, Charlie\_48, Charming\_52, Che9c\_61, Chickaboom\_40, Circuit\_35, ClubL\_91, Colusalem\_44, Coral\_41, Cote\_43, Cucurbita\_92, Culver\_92, Daob\_43, Daredevil\_84, DatBoi\_90, Donovan\_47, Doucette\_41, Dusty\_87, Dynamo\_47, Eesa\_38, Engineer\_92, FirstPlacePfu\_47, Fishburne\_46, Fitzgerald\_50, FuegoCuervo\_55, Galadriel\_52, Galaxy\_38, Gavriela\_46, Geeche\_89, Geodirt\_50, Glaske\_46, Glotell\_43, Gravel\_48, GreaseLightnin\_47, HC\_46, HUHilltop\_48, HamCheese\_40, HannahPhantana\_42, Jabberwocky\_49, Jace\_32, Jamun\_38, Jebeks\_48, Jerole\_51, JonJames\_109, Journey\_47, Jung\_45, Juniormint\_47, Juno112\_40, KHumphrey\_41, Kari\_46, KendraB23\_49, Kepler\_43, KilKor\_46, Klevey\_38, Ksquared\_46, Kuleana\_43, Langerak\_47, Leona\_40, Lilmac1015\_40, LittleTokyo\_41, Lozinak\_91, Lukepolites\_37, Lunar\_43, Majeke\_47, Malithi\_47, Mangethe\_47, Mao1\_65, McKinley\_54, Megiddo\_46, Melons\_43, MichelleMyBell\_48, Miskis\_87, ModicumRichard\_40, Mollymur\_94, Morgana\_40, Nazo\_49, Necropolis\_46, Nordenberg\_47, Norvs\_91, ObLaDi\_40, OneUp\_81, Orcanus\_39, PFR1\_36, PFR2\_38, Paries\_55, Pelletreau\_48, Phalm\_46, Phayonce\_47, Phegasus\_47, Philonius\_48, Phineas\_48, PhinkBoden\_90, PhluffyCoco\_41, Polka\_41, Polkaroo\_47, Prairie\_37, Purky\_52, Pygmy\_50, QueenHazel\_44, Rattail\_41, RedFox\_41, Renna12\_40, Rofo\_51, Ruchi\_38, Sanjuju\_50, Sbash\_58, Sejanus\_64, Shipwreck\_50, Silvy\_46, SkinnyPete\_45, Smoothie\_92, Sonah\_47, SpeedDemon\_950, StevieRay\_46, StressBall\_46, StuartMinion\_36, Stultus\_49, Tangent\_52, TaylorSipt\_39, Techage\_46, Thespis\_46, Toad24\_41, Toniann\_91, Towmatter\_86, ValentiniPuff\_98, VanLee\_37, Venti\_47, Vidya\_46, Vulpecula\_38, Westrich\_47, WilliamBoone\_90, Willsammy\_45, Xavia\_54, Xeno\_48, Xula\_43, Yvonnestic\_106, Zhuangyuan\_45, Zilizebeth\_47,

### Summary by start number:

Start 30:

- Found in 24 of 313 ( 7.7% ) of genes in pham
- Manual Annotations of this start: 1 of 260
- Called 4.2% of time when present
- Phage (with cluster) where this start called: Fosterous\_52 (DE1),

Start 33:

- Found in 1 of 313 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 260
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jace\_32 (singleton),

#### Start 37:

- Found in 18 of 313 ( 5.8% ) of genes in pham
- Manual Annotations of this start: 11 of 260
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abidatro\_39 (AS1), Antrice\_48 (AS2), Basilisk\_39 (AS1), Brynnie\_38 (AS1), Chickaboom\_40 (AS1), Eesa\_38 (AS1), Galaxy\_38 (AS1), Gravel\_48 (AS1), Jamun\_38 (AS1), KendraB23\_49 (AS1), Orcanus\_39 (AS1), Pelletreau\_48 (AS1), Ruchi\_38 (AS1), TaylorSipt\_39 (AS1), Toad24\_41 (AS1), Vulpecula\_38 (AS1), Westrich\_47 (AS1), Zhuangyuan\_45 (AS2),

#### Start 38:

- Found in 10 of 313 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 8 of 260
- Called 80.0% of time when present
- Phage (with cluster) where this start called: BobBob\_50 (DE1), Charming\_52 (DE1), Galadriel\_52 (DE1), McKinley\_54 (DE1), Nordenberg\_47 (DE1), Paries\_55 (DE1), Rofo\_51 (DE1), Tangent\_52 (DE1),

#### Start 39:

- Found in 6 of 313 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 5 of 260
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bantam\_94 (DL), Daredevil\_84 (DL), DatBoi\_90 (DL), Mollymur\_94 (DL), SpeedDemon\_950 (DL), Towmatter\_86 (DL),

#### Start 40:

- Found in 42 of 313 ( 13.4% ) of genes in pham
- Manual Annotations of this start: 25 of 260
- Called 90.5% of time when present
- Phage (with cluster) where this start called: Altadena\_37 (FH), Amelia\_41 (AS2), AmiCi24\_40 (AS3), Andrew\_42 (AS3), Atlantica\_41 (AS3), Bedetta\_46 (AS2), Bibble12\_45 (AS2), Bolt007\_38 (FH), Bumble\_35 (FH), CalWood4100\_40 (FH), Camara\_41 (AS3), Circuit\_35 (FH), Colusalem\_44 (AS2), Coral\_41 (AS2), Cote\_43 (AS2), Daob\_43 (AS2), Glotell\_43 (AS3), HamCheese\_40 (AS3), HannahPhantana\_42 (AS2), JKSyngboy\_48 (DE1), Jerole\_51 (AS2), Juno112\_40 (AS3), KHumphrey\_41 (AS3), Kepler\_43 (AS2), Klevey\_38 (FH), Kuleana\_43 (AS2), Leona\_40 (AS3), Lilmac1015\_40 (FH), LittleTokyo\_41 (AS2), Lunar\_43 (AS2), Melons\_43 (AS2), PhluffyCoco\_41 (AS3), Polka\_41 (AS2), Prairie\_37 (FH), Rattail\_41 (AS3), RedFox\_41 (AS3), Renna12\_40 (AS3), StuartMinion\_36 (AS3),

#### Start 41:

- Found in 6 of 313 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 5 of 260
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aleemily\_39 (DZ), Cafasso\_40 (DZ), ModicumRichard\_40 (DZ), Morgana\_40 (DZ), ObLaDi\_40 (DZ), VanLee\_37 (singleton),

Start 42:

- Found in 1 of 313 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 260
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Doucette\_41 (BW),

Start 43:

- Found in 16 of 313 ( 5.1% ) of genes in pham
- Manual Annotations of this start: 7 of 260
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Barsten\_52 (DE1), ChadMasterC\_52 (DE1), Fitzgerald\_50 (DE1), FuegoCuervo\_55 (DE1), Geodirt\_50 (DE1), Jabberwocky\_49 (DE1), Sanjuju\_50 (DE1), Stultus\_49 (DE1),

Start 44:

- Found in 138 of 313 ( 44.1% ) of genes in pham
- Manual Annotations of this start: 118 of 260
- Called 98.6% of time when present
- Phage (with cluster) where this start called: APunk\_52 (DE4), Abba\_36 (AO3), Abblin\_51 (DE4), Affeca\_49 (DE1), Ailee\_48 (DE1), Ali17\_47 (DE2), Andies\_45 (N), Angelicage\_49 (DE1), Ashertheman\_50 (DE1), BabeRuth\_53 (N), Baddon\_50 (DE1), BarretLemon\_35 (AO2), Baumdotcom\_48 (DE1), Beans\_33 (AO1), Belphegor\_49 (DE), Bibwit\_49 (DE1), BigDome\_35 (AO2), Bizzy\_50 (DE1), Bosection6\_48 (N), BossLady\_35 (AO2), Brandonk123\_53 (DE1), Brent\_33 (AO1), Brujita\_49 (I1), Butters\_51 (N), Carcharodon\_48 (N), Chewbacca\_50 (N), Chickadee\_47 (DE3), Delrey21\_51 (DE4), Derg\_47 (DE1), Dextert\_48 (DE3), DoctorFroggo\_51 (DE4), Dori\_64 (AD), Duplicity\_48 (N), EGUnicorn\_49 (N), EMOore\_47 (DE2), EastWest\_36 (AO), EdmundFerry\_46 (DE3), Flatwoods\_50 (DE1), Franzy\_33 (AO1), Fulbright\_47 (N), GTE6\_47 (DE3), Gaea\_49 (DE1), Gex\_48 (N), GravityBall\_35 (AO2), Grekaycon\_35 (AO2), Gustavo\_50 (DE1), Hanako\_52 (N), Hans\_51 (DE2), Inspectinfecti\_50 (DE2), Island3\_49 (I1), JKerns\_35 (AO2), Jamie19\_46 (N), Jawnski\_33 (AO1), Jordan\_35 (AO2), Kamashten\_50 (DE1), Keitabear\_51 (DE1), Kevin1\_50 (N), Kewpiedoll\_52 (DE1), King2\_33 (AO1), Kroos\_50 (DE1), Kwekel\_47 (DE3), Kwobi\_51 (DE1), LeeroyJ\_35 (AO2), Lennon\_51 (DE1), Leonard\_49 (DE2), LilHam\_47 (DE1), Lilbeanie\_53 (DE5), Love\_56 (DE1), Magsby\_48 (N), Martha\_35 (AO2), Mask\_64 (AD), MelBins\_50 (DE2), Melville\_51 (N), MoontowerMania\_51 (DE1), NathanVaag\_33 (AO1), Natkenzie\_51 (DE4), Nenae\_52 (N), Nostromo\_35 (AO3), Panchino\_45 (N), Parmesanjohn\_48 (N), PhancyPhin\_52 (N), Phauci\_42 (DE2), Phinally\_49 (DE2), Phloss\_46 (N), Phrann\_49 (N), Piccoletto\_33 (AO1), Pippa\_35 (AO2), Pipsqueaks\_48 (N), Purgamenstris\_52 (N), Raymond7\_46 (N), Rebel\_44 (N), Redi\_52 (N), Ribeye\_50 (DE1), RiverRaider\_52 (DE1), RoadKill\_45 (DE3), Rubeelu\_51 (N), Sampson\_51 (DE4), Saronaya\_50 (DE1), Schnauzer\_49 (N), SchottB\_48 (DE1), Scioto\_52 (DE4), Scitech\_45 (N), Sedona\_51 (DE1), Shade\_35 (AO2), Shivanishola\_51 (DE1), ShrimpFriedEgg\_52 (N), Shweta\_46 (N), Sicarius2\_36 (AO2), Silvafighter\_49 (N), Sitar\_51 (DE1), Smurph\_48 (N), Snekmaggedon\_46 (N), Sonny\_35 (AO2), SpongeBob\_46 (N), StevieBAY\_35 (AO2), StorminNorm\_49 (DE1), TaeYoung\_35 (AO2), Tangerine\_49 (DE1), Tapioca\_50 (N), Tardus\_53 (DE4), Thing3\_50 (DE1), ThulaThula\_53 (P5), Tiamoceli\_48 (DE3), Timinator\_35 (AO2), TripleJ\_55 (FJ), Twonlo\_45 (DE3), Tycho\_49 (DE1), Verity\_51 (DE4), ViaConlectus\_51 (DE4), Vivi2\_55 (DE1), Wyborn\_36 (AO2), Xerxes\_48 (N), YorkOnyx\_51 (DE1), Zartrosa\_35 (AO2), Zipp\_52 (DE4), Zitch\_54 (DE4),

Start 45:

- Found in 2 of 313 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 260
- Called 50.0% of time when present
- Phage (with cluster) where this start called: ValentiniPuff\_98 (singleton),

#### Start 47:

- Found in 45 of 313 ( 14.4% ) of genes in pham
- Manual Annotations of this start: 1 of 260
- Called 2.2% of time when present
- Phage (with cluster) where this start called: B3\_37 (BV),

#### Start 48:

- Found in 1 of 313 ( 0.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lukepolites\_37 (singleton),

#### Start 49:

- Found in 21 of 313 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 16 of 260
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abscondus\_90 (CQ1), Aphelion\_90 (CQ1), Bachita\_93 (CQ1), BrutonGaster\_74 (CQ2), Cardigan\_110 (DD), ClubL\_91 (CQ1), Cucurbita\_92 (CQ1), Culver\_92 (CQ1), Dusty\_87 (CQ1), Engineer\_92 (CQ1), Geeche\_89 (CQ1), JonJames\_109 (DD), Lozinak\_91 (CQ1), Miskis\_87 (CQ1), Norvs\_91 (CQ1), OneUp\_81 (CQ2), PhinkBoden\_90 (CQ1), Smoothie\_92 (CQ1), Toniann\_91 (CQ1), WilliamBoone\_90 (CQ1), Yvonnetastic\_106 (DD),

#### Start 50:

- Found in 66 of 313 ( 21.1% ) of genes in pham
- Manual Annotations of this start: 57 of 260
- Called 95.5% of time when present
- Phage (with cluster) where this start called: Aggie\_46 (N), Arib1\_47 (P1), Atcoo\_46 (P1), Babsiella\_48 (I1), Bartholomew\_46 (P1), BigNuz\_48 (P4), Bogie\_50 (P1), Brusacoram\_46 (P1), Bunnies\_47 (P1), CactusJack\_46 (P1), Camster\_47 (P1), Charlie\_48 (N), Che9c\_61 (I2), Donovan\_47 (P1), Dynamo\_47 (P1), FirstPlacePfu\_47 (P1), Fishburne\_46 (P1), Gavriela\_46 (P1), Glaske\_46 (P1), GreaseLightnin\_47 (P1), HC\_46 (I1), HUHilltop\_48 (P1), Jebeks\_48 (P1), Journey\_47 (N), Jung\_45 (P1), Juniormint\_47 (P1), Kari\_46 (P1), KilKor\_46 (P1), Ksquared\_46 (P1), Langerak\_47 (P1), Majeke\_47 (P1), Malithi\_47 (P1), Mangethe\_47 (P1), Mao1\_65 (AD), Megiddo\_46 (P1), Nazo\_49 (P4), Necropolis\_46 (P1), PFR1\_36 (BX), PFR2\_38 (BX), Phalm\_46 (P1), Phayonce\_47 (P5), Phegasus\_47 (P1), Philonius\_48 (N), Phineas\_48 (P1), Polkaroo\_47 (P1), Purky\_52 (P6), QueenHazel\_44 (I1), Sbash\_58 (I2), Sejanus\_64 (AD), Shipwreck\_50 (P1), Silvy\_46 (N), SkinnyPete\_45 (N), Sonah\_47 (P1), StevieRay\_46 (P1), StressBall\_46 (P1), Techage\_46 (P1), Thespis\_46 (P1), Venti\_47 (P1), Vidya\_46 (P1), Willsammy\_45 (P1), Xeno\_48 (N), Xula\_43 (I1), Zilizebeth\_47 (P1),

#### Start 51:

- Found in 1 of 313 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 260
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MichelleMyBell\_48 (N),

Start 52:

- Found in 1 of 313 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 260
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Xavia\_54 (P3),

Start 55:

- Found in 54 of 313 ( 17.3% ) of genes in pham
- Manual Annotations of this start: 1 of 260
- Called 1.9% of time when present
- Phage (with cluster) where this start called: Pygmy\_50 (P1),

**Summary by clusters:**

There are 33 clusters represented in this pham: singleton, AS2, DD, DE, DL, BV, BW, DZ, FH, FJ, BX, I1, I2, CQ2, CQ1, AS3, P3, AS1, P1, P6, AD, P4, P5, AO, N, AO3, AO2, AO1, DE1, DE2, DE3, DE4, DE5,

Info for manual annotations of cluster AD:

- Start number 44 was manually annotated 2 times for cluster AD.
- Start number 50 was manually annotated 2 times for cluster AD.

Info for manual annotations of cluster AO:

- Start number 44 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:

- Start number 44 was manually annotated 7 times for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 44 was manually annotated 17 times for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 44 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster AS1:

- Start number 37 was manually annotated 11 times for cluster AS1.

Info for manual annotations of cluster AS2:

- Start number 40 was manually annotated 11 times for cluster AS2.

Info for manual annotations of cluster AS3:

- Start number 40 was manually annotated 7 times for cluster AS3.

Info for manual annotations of cluster BV:

- Start number 47 was manually annotated 1 time for cluster BV.

Info for manual annotations of cluster BW:

- Start number 42 was manually annotated 1 time for cluster BW.

Info for manual annotations of cluster CQ1:

- Start number 49 was manually annotated 12 times for cluster CQ1.

Info for manual annotations of cluster CQ2:

- Start number 49 was manually annotated 2 times for cluster CQ2.

Info for manual annotations of cluster DD:

- Start number 49 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DE1:

- Start number 30 was manually annotated 1 time for cluster DE1.
- Start number 38 was manually annotated 8 times for cluster DE1.
- Start number 40 was manually annotated 1 time for cluster DE1.
- Start number 43 was manually annotated 7 times for cluster DE1.
- Start number 44 was manually annotated 27 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 44 was manually annotated 8 times for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 44 was manually annotated 7 times for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 44 was manually annotated 9 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 44 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DL:

- Start number 39 was manually annotated 5 times for cluster DL.

Info for manual annotations of cluster DZ:

- Start number 41 was manually annotated 4 times for cluster DZ.

Info for manual annotations of cluster FH:

- Start number 40 was manually annotated 6 times for cluster FH.

Info for manual annotations of cluster FJ:

- Start number 44 was manually annotated 1 time for cluster FJ.

Info for manual annotations of cluster I1:

- Start number 44 was manually annotated 2 times for cluster I1.
- Start number 50 was manually annotated 4 times for cluster I1.

Info for manual annotations of cluster I2:

- Start number 50 was manually annotated 2 times for cluster I2.

Info for manual annotations of cluster N:

- Start number 44 was manually annotated 34 times for cluster N.
- Start number 50 was manually annotated 7 times for cluster N.
- Start number 51 was manually annotated 1 time for cluster N.

Info for manual annotations of cluster P1:

- Start number 50 was manually annotated 38 times for cluster P1.

- Start number 55 was manually annotated 1 time for cluster P1.

Info for manual annotations of cluster P3:

- Start number 52 was manually annotated 1 time for cluster P3.

Info for manual annotations of cluster P4:

- Start number 50 was manually annotated 2 times for cluster P4.

Info for manual annotations of cluster P5:

- Start number 44 was manually annotated 1 time for cluster P5.
- Start number 50 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster P6:

- Start number 50 was manually annotated 1 time for cluster P6.

### ***Gene Information:***

Gene: APunk\_52 Start: 43066, Stop: 44106, Start Num: 44

Candidate Starts for APunk\_52:

(Start: 44 @43066 has 118 MA's), (65, 43156), (72, 43180), (73, 43192), (77, 43210), (97, 43288), (102, 43321), (142, 43495), (156, 43561), (166, 43609), (178, 43681), (180, 43696), (185, 43717), (189, 43738), (190, 43741), (218, 43846), (221, 43879), (224, 43891), (242, 44038), (245, 44074),

Gene: Abba\_36 Start: 28749, Stop: 29633, Start Num: 44

Candidate Starts for Abba\_36:

(Start: 44 @28749 has 118 MA's), (70, 28854), (72, 28860), (75, 28881), (90, 28938), (93, 28953), (97, 28968), (100, 28989), (121, 29073), (144, 29190), (147, 29211), (164, 29271), (166, 29286), (172, 29313), (178, 29370), (181, 29388), (184, 29400), (196, 29457), (227, 29586), (230, 29595),

Gene: Abblin\_51 Start: 43588, Stop: 44628, Start Num: 44

Candidate Starts for Abblin\_51:

(Start: 44 @43588 has 118 MA's), (65, 43678), (72, 43702), (73, 43714), (77, 43732), (97, 43810), (102, 43843), (142, 44017), (156, 44083), (166, 44131), (178, 44203), (180, 44218), (185, 44239), (189, 44260), (190, 44263), (218, 44368), (221, 44401), (224, 44413), (242, 44560), (245, 44596),

Gene: Abidatro\_39 Start: 26326, Stop: 27126, Start Num: 37

Candidate Starts for Abidatro\_39:

(Start: 37 @26326 has 11 MA's), (62, 26422), (65, 26431), (72, 26455), (77, 26485), (103, 26602), (144, 26815), (153, 26860), (178, 26980), (193, 27052), (194, 27055), (202, 27094),

Gene: Abscondus\_90 Start: 55792, Stop: 56517, Start Num: 49

Candidate Starts for Abscondus\_90:

(3, 55459), (5, 55492), (7, 55519), (8, 55522), (9, 55525), (16, 55633), (Start: 49 @55792 has 16 MA's), (74, 55900), (78, 55918), (82, 55933), (83, 55936), (94, 55987), (105, 56050), (119, 56077), (125, 56110), (132, 56149), (139, 56188), (146, 56218), (149, 56245), (161, 56290), (178, 56371), (182, 56395), (193, 56440), (199, 56470),

Gene: Affeca\_49 Start: 42918, Stop: 43916, Start Num: 44

Candidate Starts for Affeca\_49:

(10, 42675), (15, 42777), (Start: 30 @42864 has 1 MA's), (Start: 44 @42918 has 118 MA's), (54, 42954), (65, 43005), (67, 43011), (72, 43029), (77, 43059), (93, 43122), (97, 43137), (113, 43218),

(118, 43233), (122, 43257), (126, 43281), (156, 43428), (164, 43461), (166, 43476), (178, 43545), (180, 43560), (193, 43617), (196, 43632), (237, 43809), (245, 43881),

Gene: Aggie\_46 Start: 32126, Stop: 33115, Start Num: 50

Candidate Starts for Aggie\_46:

(4, 31805), (17, 31973), (28, 32036), (Start: 50 @32126 has 57 MA's), (Start: 55 @32141 has 1 MA's), (65, 32189), (76, 32240), (99, 32336), (108, 32375), (138, 32510), (162, 32621), (164, 32624), (170, 32663), (176, 32687), (178, 32705), (187, 32750), (194, 32780), (196, 32792), (229, 32936), (241, 33035), (245, 33083),

Gene: Ailee\_48 Start: 42523, Stop: 43524, Start Num: 44

Candidate Starts for Ailee\_48:

(10, 42280), (15, 42382), (Start: 30 @42469 has 1 MA's), (Start: 44 @42523 has 118 MA's), (54, 42559), (65, 42610), (67, 42616), (72, 42634), (77, 42664), (93, 42727), (97, 42742), (113, 42823), (118, 42838), (122, 42862), (126, 42886), (156, 43033), (164, 43066), (166, 43081), (178, 43150), (180, 43165), (193, 43222), (196, 43237), (237, 43417), (245, 43489),

Gene: Aleemily\_39 Start: 32837, Stop: 33721, Start Num: 41

Candidate Starts for Aleemily\_39:

(Start: 41 @32837 has 5 MA's), (60, 32909), (64, 32927), (68, 32939), (73, 32966), (77, 32984), (97, 33071), (124, 33236), (148, 33368), (156, 33392), (162, 33419), (164, 33425), (177, 33506), (178, 33512), (186, 33551), (208, 33653),

Gene: Ali17\_47 Start: 41267, Stop: 42328, Start Num: 44

Candidate Starts for Ali17\_47:

(Start: 44 @41267 has 118 MA's), (54, 41303), (65, 41354), (72, 41378), (75, 41399), (84, 41435), (97, 41486), (102, 41519), (126, 41630), (156, 41777), (160, 41798), (164, 41810), (166, 41825), (178, 41906), (180, 41921), (189, 41963), (190, 41966), (221, 42095), (235, 42191), (242, 42263), (245, 42299),

Gene: Altadena\_37 Start: 28014, Stop: 28847, Start Num: 40

Candidate Starts for Altadena\_37:

(Start: 40 @28014 has 25 MA's), (65, 28104), (72, 28128), (97, 28236), (121, 28341), (144, 28461), (153, 28500), (178, 28638), (186, 28677),

Gene: Amelia\_41 Start: 26090, Stop: 26884, Start Num: 40

Candidate Starts for Amelia\_41:

(Start: 40 @26090 has 25 MA's), (65, 26183), (73, 26219), (77, 26237), (86, 26270), (103, 26354), (131, 26501), (132, 26504), (153, 26618), (166, 26672), (178, 26738), (188, 26792), (198, 26837), (202, 26852),

Gene: AmiCi24\_40 Start: 26013, Stop: 26810, Start Num: 40

Candidate Starts for AmiCi24\_40:

(Start: 40 @26013 has 25 MA's), (65, 26109), (77, 26163), (103, 26280), (111, 26316), (131, 26427), (144, 26499), (150, 26535), (153, 26544), (178, 26664), (183, 26691), (196, 26751),

Gene: Andies\_45 Start: 32643, Stop: 33707, Start Num: 44

Candidate Starts for Andies\_45:

(18, 32529), (Start: 44 @32643 has 118 MA's), (Start: 47 @32655 has 1 MA's), (62, 32721), (63, 32724), (65, 32730), (72, 32754), (75, 32775), (76, 32781), (79, 32793), (80, 32796), (82, 32805), (93, 32847), (97, 32862), (134, 33054), (149, 33135), (153, 33147), (156, 33156), (164, 33189), (166, 33204), (172, 33231), (178, 33285), (180, 33300), (184, 33315), (186, 33324), (192, 33354), (196, 33372), (197, 33378), (213, 33429), (222, 33486), (227, 33522), (229, 33528), (240, 33618), (241,



33627), (245, 33675), (246, 33684),

Gene: Andrew\_42 Start: 25907, Stop: 26704, Start Num: 40

Candidate Starts for Andrew\_42:

(Start: 40 @25907 has 25 MA's), (65, 26003), (73, 26039), (77, 26057), (80, 26069), (103, 26174), (111, 26210), (131, 26321), (144, 26393), (150, 26429), (153, 26438), (178, 26558), (183, 26585), (196, 26645),

Gene: Angelicage\_49 Start: 43336, Stop: 44331, Start Num: 44

Candidate Starts for Angelicage\_49:

(2, 42985), (10, 43093), (15, 43195), (Start: 30 @43282 has 1 MA's), (Start: 44 @43336 has 118 MA's), (54, 43372), (65, 43423), (67, 43429), (72, 43447), (77, 43477), (93, 43540), (97, 43555), (113, 43636), (118, 43651), (122, 43675), (126, 43699), (156, 43846), (164, 43879), (166, 43894), (178, 43963), (180, 43978), (193, 44035), (196, 44050), (237, 44224), (245, 44296),

Gene: Antrice\_48 Start: 27283, Stop: 28095, Start Num: 37

Candidate Starts for Antrice\_48:

(Start: 37 @27283 has 11 MA's), (Start: 50 @27328 has 57 MA's), (65, 27391), (72, 27415), (74, 27433), (77, 27445), (80, 27457), (103, 27562), (109, 27592), (121, 27664), (131, 27712), (144, 27784), (178, 27949), (196, 28036),

Gene: Aphelion\_90 Start: 56388, Stop: 57113, Start Num: 49

Candidate Starts for Aphelion\_90:

(5, 56088), (7, 56115), (8, 56118), (9, 56121), (16, 56229), (Start: 49 @56388 has 16 MA's), (74, 56496), (78, 56514), (82, 56529), (83, 56532), (94, 56583), (105, 56646), (119, 56673), (125, 56706), (132, 56745), (139, 56784), (146, 56814), (149, 56841), (161, 56886), (178, 56967), (182, 56991), (193, 57036), (199, 57066),

Gene: Arib1\_47 Start: 32549, Stop: 33544, Start Num: 50

Candidate Starts for Arib1\_47:

(4, 32228), (17, 32396), (28, 32459), (Start: 50 @32549 has 57 MA's), (Start: 55 @32564 has 1 MA's), (65, 32612), (76, 32663), (99, 32759), (108, 32798), (138, 32933), (162, 33044), (164, 33047), (170, 33086), (176, 33110), (178, 33128), (187, 33173), (194, 33203), (196, 33215), (229, 33362), (241, 33461), (245, 33509), (247, 33533),

Gene: Ashertheman\_50 Start: 42632, Stop: 43633, Start Num: 44

Candidate Starts for Ashertheman\_50:

(Start: 44 @42632 has 118 MA's), (54, 42668), (65, 42722), (72, 42746), (77, 42776), (85, 42806), (93, 42839), (97, 42854), (124, 42983), (126, 42998), (127, 43001), (156, 43145), (164, 43178), (166, 43193), (178, 43262), (180, 43277), (193, 43334), (196, 43349),

Gene: Atcoo\_46 Start: 33030, Stop: 34004, Start Num: 50

Candidate Starts for Atcoo\_46:

(Start: 50 @33030 has 57 MA's), (Start: 55 @33048 has 1 MA's), (65, 33096), (76, 33147), (80, 33162), (82, 33171), (108, 33282), (138, 33417), (162, 33528), (164, 33531), (170, 33570), (176, 33594), (178, 33612), (187, 33657), (194, 33687), (196, 33699), (213, 33756), (229, 33825), (241, 33924), (245, 33972),

Gene: Atlantica\_41 Start: 26015, Stop: 26812, Start Num: 40

Candidate Starts for Atlantica\_41:

(Start: 40 @26015 has 25 MA's), (65, 26111), (77, 26165), (103, 26282), (111, 26318), (131, 26429), (144, 26501), (150, 26537), (153, 26546), (178, 26666), (183, 26693), (196, 26753),

Gene: B3\_37 Start: 26812, Stop: 27609, Start Num: 47

Candidate Starts for B3\_37:

(31, 26755), (Start: 47 @26812 has 1 MA's), (65, 26887), (73, 26923), (131, 27193), (147, 27280), (156, 27307), (178, 27412), (183, 27439), (184, 27442), (185, 27448), (194, 27487),

Gene: BabeRuth\_53 Start: 34364, Stop: 35428, Start Num: 44

Candidate Starts for BabeRuth\_53:

(18, 34250), (Start: 44 @34364 has 118 MA's), (Start: 47 @34376 has 1 MA's), (62, 34442), (63, 34445), (65, 34451), (72, 34475), (75, 34496), (76, 34502), (79, 34514), (80, 34517), (82, 34526), (93, 34568), (97, 34583), (134, 34775), (149, 34856), (153, 34868), (156, 34877), (164, 34910), (166, 34925), (172, 34952), (178, 35006), (180, 35021), (184, 35036), (186, 35045), (192, 35075), (196, 35093), (197, 35099), (213, 35150), (222, 35207), (227, 35243), (229, 35249), (240, 35339), (241, 35348), (245, 35396), (246, 35405),

Gene: Babsiella\_48 Start: 33402, Stop: 34397, Start Num: 50

Candidate Starts for Babsiella\_48:

(21, 33267), (Start: 50 @33402 has 57 MA's), (Start: 55 @33417 has 1 MA's), (65, 33465), (76, 33516), (82, 33540), (108, 33651), (138, 33786), (162, 33897), (164, 33900), (170, 33939), (176, 33963), (178, 33981), (187, 34026), (194, 34056), (196, 34068), (213, 34125), (229, 34215), (241, 34314), (245, 34362), (247, 34386),

Gene: Bachita\_93 Start: 56837, Stop: 57562, Start Num: 49

Candidate Starts for Bachita\_93:

(5, 56537), (7, 56564), (8, 56567), (9, 56570), (25, 56732), (Start: 49 @56837 has 16 MA's), (74, 56945), (78, 56963), (82, 56978), (83, 56981), (94, 57032), (105, 57095), (119, 57122), (125, 57155), (132, 57194), (139, 57233), (146, 57263), (149, 57290), (161, 57335), (178, 57416), (182, 57440), (193, 57485), (199, 57515),

Gene: Baddon\_50 Start: 43605, Stop: 44627, Start Num: 44

Candidate Starts for Baddon\_50:

(15, 43464), (Start: 30 @43551 has 1 MA's), (Start: 40 @43599 has 25 MA's), (Start: 44 @43605 has 118 MA's), (54, 43641), (65, 43695), (72, 43719), (77, 43749), (85, 43779), (93, 43812), (97, 43827), (113, 43908), (124, 43956), (126, 43971), (127, 43974), (156, 44118), (164, 44151), (166, 44166), (178, 44235), (180, 44250), (193, 44307),

Gene: Bantam\_94 Start: 63033, Stop: 62203, Start Num: 39

Candidate Starts for Bantam\_94:

(Start: 39 @63033 has 5 MA's), (72, 62910), (78, 62874), (94, 62805), (121, 62697), (149, 62532), (155, 62514), (178, 62406), (211, 62262),

Gene: BarretLemon\_35 Start: 29827, Stop: 30672, Start Num: 44

Candidate Starts for BarretLemon\_35:

(Start: 44 @29827 has 118 MA's), (65, 29920), (66, 29923), (72, 29944), (77, 29974), (97, 30052), (106, 30109), (121, 30157), (131, 30208), (132, 30211), (134, 30226), (144, 30274), (147, 30292), (164, 30352), (172, 30394), (176, 30433), (178, 30451), (181, 30469), (186, 30490), (189, 30508), (210, 30589), (213, 30595),

Gene: Barsten\_52 Start: 43289, Stop: 44287, Start Num: 43

Candidate Starts for Barsten\_52:

(29, 43238), (Start: 43 @43289 has 7 MA's), (54, 43325), (65, 43376), (67, 43382), (72, 43400), (77, 43430), (93, 43493), (97, 43508), (113, 43589), (118, 43604), (122, 43628), (126, 43652), (156, 43799), (164, 43832), (166, 43847), (178, 43916), (180, 43931), (193, 43988), (196, 44003), (237, 44180), (245, 44252),

Gene: Bartholomew\_46 Start: 32543, Stop: 33535, Start Num: 50

Candidate Starts for Bartholomew\_46:

(4, 32222), (17, 32390), (28, 32453), (Start: 50 @32543 has 57 MA's), (Start: 55 @32558 has 1 MA's), (65, 32606), (76, 32657), (99, 32753), (108, 32792), (138, 32927), (162, 33038), (164, 33041), (170, 33080), (176, 33104), (178, 33122), (187, 33167), (194, 33197), (196, 33209), (229, 33353), (241, 33452), (245, 33500), (247, 33524),

Gene: Basilisk\_39 Start: 26840, Stop: 27646, Start Num: 37

Candidate Starts for Basilisk\_39:

(Start: 37 @26840 has 11 MA's), (62, 26936), (65, 26945), (73, 26981), (77, 26999), (150, 27374), (164, 27419), (178, 27500), (201, 27611), (202, 27614),

Gene: Baumdotcom\_48 Start: 42032, Stop: 43054, Start Num: 44

Candidate Starts for Baumdotcom\_48:

(Start: 44 @42032 has 118 MA's), (54, 42068), (65, 42122), (72, 42146), (77, 42176), (85, 42206), (93, 42239), (97, 42254), (113, 42335), (124, 42383), (126, 42398), (127, 42401), (156, 42545), (164, 42578), (166, 42593), (178, 42662), (180, 42677), (193, 42734), (196, 42749),

Gene: Beans\_33 Start: 29523, Stop: 30368, Start Num: 44

Candidate Starts for Beans\_33:

(Start: 44 @29523 has 118 MA's), (65, 29610), (70, 29628), (72, 29634), (75, 29655), (97, 29742), (106, 29799), (121, 29847), (144, 29964), (164, 30042), (168, 30069), (172, 30084), (176, 30123), (178, 30141), (181, 30159), (186, 30180), (189, 30198),

Gene: Bedetta\_46 Start: 26237, Stop: 27031, Start Num: 40

Candidate Starts for Bedetta\_46:

(Start: 40 @26237 has 25 MA's), (65, 26330), (73, 26366), (77, 26384), (86, 26417), (103, 26501), (131, 26648), (132, 26651), (153, 26765), (166, 26819), (178, 26885), (188, 26939), (198, 26984), (202, 26999),

Gene: Belphegor\_49 Start: 43122, Stop: 44186, Start Num: 44

Candidate Starts for Belphegor\_49:

(Start: 44 @43122 has 118 MA's), (60, 43188), (64, 43206), (65, 43209), (72, 43233), (73, 43245), (77, 43263), (82, 43284), (96, 43338), (97, 43341), (102, 43374), (156, 43632), (160, 43653), (164, 43665), (166, 43680), (178, 43761), (180, 43776), (189, 43818), (190, 43821), (196, 43848), (221, 43959), (235, 44040), (242, 44112), (245, 44148),

Gene: Bible12\_45 Start: 26085, Stop: 26879, Start Num: 40

Candidate Starts for Bible12\_45:

(Start: 40 @26085 has 25 MA's), (65, 26178), (73, 26214), (77, 26232), (86, 26265), (103, 26349), (131, 26496), (132, 26499), (153, 26613), (166, 26667), (178, 26733), (188, 26787), (198, 26832), (202, 26847),

Gene: Bibwit\_49 Start: 42164, Stop: 43165, Start Num: 44

Candidate Starts for Bibwit\_49:

(10, 41921), (15, 42023), (Start: 30 @42110 has 1 MA's), (Start: 44 @42164 has 118 MA's), (54, 42200), (65, 42254), (72, 42278), (77, 42308), (85, 42338), (93, 42371), (97, 42386), (124, 42515), (126, 42530), (127, 42533), (156, 42677), (164, 42710), (166, 42725), (178, 42794), (179, 42800), (180, 42809), (193, 42866), (196, 42881),

Gene: BigDome\_35 Start: 29819, Stop: 30664, Start Num: 44

Candidate Starts for BigDome\_35:

(Start: 44 @29819 has 118 MA's), (65, 29912), (66, 29915), (72, 29936), (77, 29966), (97, 30044), (106, 30101), (121, 30149), (131, 30200), (132, 30203), (134, 30218), (144, 30266), (147, 30284), (164, 30344), (172, 30386), (176, 30425), (178, 30443), (181, 30461), (186, 30482), (189, 30500), (196, 30530), (204, 30569), (210, 30581), (213, 30587),

Gene: BigNuz\_48 Start: 34451, Stop: 35503, Start Num: 50

Candidate Starts for BigNuz\_48:

(Start: 47 @34433 has 1 MA's), (Start: 50 @34451 has 57 MA's), (59, 34490), (66, 34526), (72, 34547), (73, 34559), (79, 34586), (108, 34739), (113, 34766), (122, 34805), (137, 34886), (138, 34892), (156, 34967), (162, 34994), (178, 35075), (183, 35102), (228, 35318), (229, 35324), (241, 35423), (245, 35471),

Gene: Bizzy\_50 Start: 42320, Stop: 43342, Start Num: 44

Candidate Starts for Bizzy\_50:

(Start: 44 @42320 has 118 MA's), (54, 42356), (65, 42410), (72, 42434), (77, 42464), (85, 42494), (93, 42527), (97, 42542), (113, 42623), (124, 42671), (126, 42686), (127, 42689), (156, 42833), (164, 42866), (166, 42881), (178, 42950), (180, 42965), (193, 43022), (196, 43037),

Gene: BobBob\_50 Start: 42507, Stop: 43514, Start Num: 38

Candidate Starts for BobBob\_50:

(Start: 38 @42507 has 8 MA's), (Start: 43 @42516 has 7 MA's), (54, 42552), (65, 42603), (67, 42609), (72, 42627), (77, 42657), (93, 42720), (97, 42735), (106, 42786), (124, 42864), (156, 43026), (164, 43059), (166, 43074), (178, 43143), (180, 43158), (193, 43215), (196, 43230), (237, 43407), (245, 43479),

Gene: Bogie\_50 Start: 34801, Stop: 35775, Start Num: 50

Candidate Starts for Bogie\_50:

(Start: 50 @34801 has 57 MA's), (Start: 55 @34819 has 1 MA's), (65, 34867), (76, 34918), (82, 34942), (108, 35053), (138, 35188), (162, 35299), (164, 35302), (170, 35341), (176, 35365), (178, 35383), (187, 35428), (194, 35458), (196, 35470), (213, 35527), (229, 35596), (241, 35695), (245, 35743),

Gene: Bolt007\_38 Start: 30497, Stop: 31360, Start Num: 40

Candidate Starts for Bolt007\_38:

(Start: 40 @30497 has 25 MA's), (65, 30587), (72, 30611), (97, 30719), (121, 30824), (144, 30944), (178, 31121), (186, 31160), (188, 31175), (197, 31214), (216, 31277),

Gene: Bosection6\_48 Start: 32109, Stop: 33173, Start Num: 44

Candidate Starts for Bosection6\_48:

(1, 31737), (18, 31995), (Start: 44 @32109 has 118 MA's), (Start: 47 @32121 has 1 MA's), (62, 32187), (63, 32190), (65, 32196), (72, 32220), (75, 32241), (76, 32247), (79, 32259), (80, 32262), (82, 32271), (93, 32313), (97, 32328), (134, 32520), (149, 32601), (153, 32613), (156, 32622), (164, 32655), (166, 32670), (172, 32697), (178, 32751), (180, 32766), (184, 32781), (186, 32790), (192, 32820), (196, 32838), (197, 32844), (213, 32895), (222, 32952), (227, 32988), (229, 32994), (240, 33084), (241, 33093), (245, 33141), (246, 33150),

Gene: BossLady\_35 Start: 29796, Stop: 30644, Start Num: 44

Candidate Starts for BossLady\_35:

(Start: 44 @29796 has 118 MA's), (65, 29886), (66, 29889), (72, 29910), (76, 29937), (77, 29940), (97, 30018), (106, 30075), (121, 30123), (131, 30174), (132, 30177), (144, 30240), (147, 30258), (164, 30318), (172, 30360), (176, 30399), (178, 30417), (181, 30435), (186, 30456), (189, 30474), (196, 30504), (210, 30555), (226, 30621),

Gene: Brandonk123\_53 Start: 43467, Stop: 44465, Start Num: 44

Candidate Starts for Brandonk123\_53:

(15, 43326), (Start: 30 @43413 has 1 MA's), (Start: 44 @43467 has 118 MA's), (54, 43503), (65, 43554), (67, 43560), (72, 43578), (77, 43608), (93, 43671), (97, 43686), (113, 43767), (118, 43782), (122, 43806), (126, 43830), (135, 43878), (156, 43977), (164, 44010), (166, 44025), (178, 44094), (180, 44109), (193, 44166), (196, 44181), (237, 44358), (245, 44430),

Gene: Brent\_33 Start: 29486, Stop: 30331, Start Num: 44

Candidate Starts for Brent\_33:

(Start: 44 @29486 has 118 MA's), (65, 29576), (70, 29594), (72, 29600), (75, 29621), (81, 29648), (97, 29708), (106, 29765), (121, 29813), (144, 29930), (164, 30008), (168, 30035), (172, 30050), (176, 30089), (178, 30107), (181, 30125), (186, 30146), (189, 30164), (199, 30209),

Gene: Brujita\_49 Start: 34787, Stop: 35854, Start Num: 44

Candidate Starts for Brujita\_49:

(Start: 44 @34787 has 118 MA's), (Start: 47 @34799 has 1 MA's), (62, 34865), (65, 34874), (72, 34898), (75, 34919), (76, 34925), (80, 34940), (82, 34949), (93, 34991), (97, 35006), (113, 35093), (153, 35291), (164, 35333), (166, 35348), (172, 35375), (175, 35396), (178, 35429), (180, 35444), (184, 35459), (186, 35468), (192, 35498), (196, 35516), (197, 35522), (206, 35555), (213, 35573), (228, 35666), (229, 35672), (241, 35771), (245, 35819), (247, 35843),

Gene: Brusacoram\_46 Start: 32536, Stop: 33510, Start Num: 50

Candidate Starts for Brusacoram\_46:

(Start: 50 @32536 has 57 MA's), (Start: 55 @32554 has 1 MA's), (65, 32602), (76, 32653), (80, 32668), (82, 32677), (108, 32788), (138, 32923), (162, 33034), (164, 33037), (170, 33076), (176, 33100), (178, 33118), (187, 33163), (194, 33193), (196, 33205), (213, 33262), (229, 33331), (241, 33430), (245, 33478),

Gene: BrutonGaster\_74 Start: 51893, Stop: 52576, Start Num: 49

Candidate Starts for BrutonGaster\_74:

(Start: 49 @51893 has 16 MA's), (71, 51980), (74, 52001), (78, 52019), (83, 52037), (94, 52088), (119, 52178), (125, 52211), (139, 52289), (146, 52319), (149, 52346), (161, 52391), (178, 52472), (182, 52496), (193, 52541), (200, 52571),

Gene: Brynnie\_38 Start: 26718, Stop: 27524, Start Num: 37

Candidate Starts for Brynnie\_38:

(Start: 37 @26718 has 11 MA's), (62, 26814), (65, 26823), (73, 26859), (77, 26877), (117, 27069), (150, 27252), (178, 27378), (201, 27489),

Gene: Bumble\_35 Start: 28079, Stop: 28930, Start Num: 40

Candidate Starts for Bumble\_35:

(Start: 40 @28079 has 25 MA's), (65, 28169), (72, 28193), (97, 28301), (121, 28406), (153, 28565), (164, 28604), (178, 28685), (186, 28724), (228, 28919),

Gene: Bunnies\_47 Start: 32550, Stop: 33524, Start Num: 50

Candidate Starts for Bunnies\_47:

(Start: 50 @32550 has 57 MA's), (Start: 55 @32568 has 1 MA's), (65, 32616), (76, 32667), (80, 32682), (82, 32691), (108, 32802), (138, 32937), (162, 33048), (164, 33051), (170, 33090), (176, 33114), (178, 33132), (187, 33177), (194, 33207), (196, 33219), (213, 33276), (229, 33345), (241, 33444), (245, 33492),

Gene: Butters\_51 Start: 34063, Stop: 35127, Start Num: 44

Candidate Starts for Butters\_51:

(Start: 44 @34063 has 118 MA's), (Start: 47 @34075 has 1 MA's), (62, 34141), (65, 34150), (72, 34174), (75, 34195), (76, 34201), (80, 34216), (82, 34225), (93, 34267), (97, 34282), (113, 34369), (153, 34567), (164, 34609), (166, 34624), (172, 34651), (175, 34672), (178, 34705), (180, 34720), (184, 34735), (186, 34744), (192, 34774), (196, 34792), (197, 34798), (206, 34831), (213, 34849), (228, 34942), (229, 34948), (240, 35038), (241, 35047), (245, 35095), (246, 35104),

Gene: CactusJack\_46 Start: 32800, Stop: 33774, Start Num: 50

Candidate Starts for CactusJack\_46:

(Start: 50 @32800 has 57 MA's), (Start: 55 @32818 has 1 MA's), (65, 32866), (76, 32917), (80, 32932), (82, 32941), (108, 33052), (138, 33187), (162, 33298), (164, 33301), (170, 33340), (176, 33364), (178, 33382), (187, 33427), (194, 33457), (196, 33469), (213, 33526), (229, 33595), (241, 33694), (245, 33742),

Gene: Cafasso\_40 Start: 33411, Stop: 34295, Start Num: 41

Candidate Starts for Cafasso\_40:

(Start: 41 @33411 has 5 MA's), (60, 33483), (64, 33501), (68, 33513), (73, 33540), (77, 33558), (97, 33645), (124, 33810), (148, 33942), (156, 33966), (162, 33993), (164, 33999), (177, 34080), (178, 34086), (186, 34125), (208, 34227),

Gene: CalWood4100\_40 Start: 29991, Stop: 30845, Start Num: 40

Candidate Starts for CalWood4100\_40:

(Start: 40 @29991 has 25 MA's), (65, 30081), (72, 30105), (97, 30213), (121, 30318), (144, 30438), (178, 30615), (186, 30654), (216, 30771),

Gene: Camara\_41 Start: 26017, Stop: 26814, Start Num: 40

Candidate Starts for Camara\_41:

(Start: 40 @26017 has 25 MA's), (65, 26113), (77, 26167), (103, 26284), (111, 26320), (131, 26431), (144, 26503), (150, 26539), (153, 26548), (178, 26668), (196, 26755),

Gene: Camster\_47 Start: 32557, Stop: 33531, Start Num: 50

Candidate Starts for Camster\_47:

(Start: 50 @32557 has 57 MA's), (Start: 55 @32575 has 1 MA's), (65, 32623), (76, 32674), (82, 32698), (108, 32809), (138, 32944), (162, 33055), (164, 33058), (170, 33097), (176, 33121), (178, 33139), (187, 33184), (194, 33214), (196, 33226), (213, 33283), (229, 33352), (241, 33451), (245, 33499),

Gene: Carcharodon\_48 Start: 33458, Stop: 34519, Start Num: 44

Candidate Starts for Carcharodon\_48:

(Start: 44 @33458 has 118 MA's), (Start: 47 @33470 has 1 MA's), (62, 33536), (63, 33539), (65, 33545), (72, 33569), (75, 33590), (76, 33596), (79, 33608), (80, 33611), (82, 33620), (93, 33662), (97, 33677), (113, 33764), (134, 33869), (136, 33878), (144, 33923), (149, 33950), (153, 33962), (160, 33992), (164, 34004), (166, 34019), (172, 34046), (175, 34067), (178, 34100), (180, 34115), (181, 34118), (184, 34130), (186, 34139), (196, 34187), (197, 34193), (213, 34244), (218, 34268), (222, 34301), (223, 34304), (227, 34334), (229, 34340), (237, 34412), (240, 34430), (241, 34439), (245, 34487), (246, 34496),

Gene: Cardigan\_110 Start: 63451, Stop: 64143, Start Num: 49

Candidate Starts for Cardigan\_110:

(Start: 49 @63451 has 16 MA's), (61, 63505), (71, 63538), (78, 63577), (88, 63613), (89, 63622), (94, 63646), (96, 63655), (97, 63658), (121, 63754), (130, 63796), (132, 63808), (143, 63865), (147, 63901), (155, 63925), (161, 63952), (163, 63958), (178, 64033), (186, 64072), (190, 64093),

Gene: ChadMasterC\_52 Start: 44688, Stop: 45686, Start Num: 43

Candidate Starts for ChadMasterC\_52:

(29, 44637), (Start: 43 @44688 has 7 MA's), (54, 44724), (65, 44775), (67, 44781), (72, 44799), (77, 44829), (93, 44892), (97, 44907), (113, 44988), (122, 45027), (126, 45051), (156, 45198), (164, 45231), (166, 45246), (178, 45315), (180, 45330), (193, 45387), (196, 45402), (237, 45579), (245, 45651),

Gene: Charlie\_48 Start: 31920, Stop: 32912, Start Num: 50

Candidate Starts for Charlie\_48:

(4, 31599), (17, 31767), (28, 31830), (Start: 50 @31920 has 57 MA's), (Start: 55 @31935 has 1 MA's), (65, 31983), (76, 32034), (99, 32130), (108, 32169), (138, 32304), (162, 32415), (164, 32418), (170, 32457), (176, 32481), (178, 32499), (187, 32544), (194, 32574), (196, 32586), (229, 32730), (241, 32829), (245, 32877), (247, 32901),

Gene: Charming\_52 Start: 42946, Stop: 43956, Start Num: 38

Candidate Starts for Charming\_52:

(Start: 38 @42946 has 8 MA's), (Start: 43 @42955 has 7 MA's), (54, 42991), (65, 43045), (67, 43051), (72, 43069), (77, 43099), (93, 43162), (97, 43177), (113, 43258), (126, 43321), (156, 43468), (164, 43501), (166, 43516), (178, 43585), (180, 43600), (193, 43657), (196, 43672), (236, 43837), (245, 43921),

Gene: Che9c\_61 Start: 43643, Stop: 44704, Start Num: 50

Candidate Starts for Che9c\_61:

(Start: 47 @43625 has 1 MA's), (Start: 50 @43643 has 57 MA's), (61, 43703), (64, 43712), (66, 43718), (72, 43739), (73, 43751), (79, 43778), (108, 43931), (113, 43958), (137, 44078), (143, 44105), (156, 44159), (162, 44186), (167, 44213), (178, 44267), (183, 44294), (228, 44519), (229, 44525), (246, 44681),

Gene: Chewbacca\_50 Start: 33458, Stop: 34519, Start Num: 44

Candidate Starts for Chewbacca\_50:

(Start: 44 @33458 has 118 MA's), (Start: 47 @33470 has 1 MA's), (62, 33536), (63, 33539), (65, 33545), (72, 33569), (75, 33590), (76, 33596), (79, 33608), (80, 33611), (82, 33620), (93, 33662), (97, 33677), (113, 33764), (134, 33869), (136, 33878), (144, 33923), (149, 33950), (153, 33962), (160, 33992), (164, 34004), (166, 34019), (172, 34046), (175, 34067), (178, 34100), (180, 34115), (181, 34118), (184, 34130), (186, 34139), (196, 34187), (197, 34193), (213, 34244), (218, 34268), (222, 34301), (223, 34304), (227, 34334), (229, 34340), (237, 34412), (240, 34430), (241, 34439), (245, 34487), (246, 34496),

Gene: Chickaboom\_40 Start: 26337, Stop: 27143, Start Num: 37

Candidate Starts for Chickaboom\_40:

(Start: 37 @26337 has 11 MA's), (62, 26433), (65, 26442), (77, 26496), (87, 26535), (97, 26574), (150, 26871), (178, 26997), (201, 27108),

Gene: Chickadee\_47 Start: 39366, Stop: 40424, Start Num: 44

Candidate Starts for Chickadee\_47:

(35, 39336), (Start: 44 @39366 has 118 MA's), (65, 39453), (72, 39477), (77, 39507), (93, 39570), (97, 39585), (102, 39618), (126, 39729), (132, 39756), (142, 39810), (156, 39876), (160, 39897), (164, 39909), (166, 39924), (178, 40008), (181, 40026), (185, 40044), (189, 40065), (196, 40095), (221, 40206), (236, 40311), (238, 40332), (244, 40389), (245, 40395),

Gene: Circuit\_35 Start: 29044, Stop: 29892, Start Num: 40

Candidate Starts for Circuit\_35:

(Start: 40 @29044 has 25 MA's), (65, 29134), (72, 29158), (97, 29266), (121, 29371), (153, 29530), (164, 29569), (178, 29650), (186, 29689),

Gene: ClubL\_91 Start: 55523, Stop: 56248, Start Num: 49

Candidate Starts for ClubL\_91:

(Start: 49 @55523 has 16 MA's), (74, 55631), (78, 55649), (82, 55664), (83, 55667), (94, 55718), (105, 55781), (119, 55808), (125, 55841), (132, 55880), (139, 55919), (146, 55949), (149, 55976), (161, 56021), (178, 56102), (182, 56126), (199, 56201),

Gene: Colusalem\_44 Start: 26067, Stop: 26861, Start Num: 40

Candidate Starts for Colusalem\_44:

(Start: 40 @26067 has 25 MA's), (65, 26160), (73, 26196), (77, 26214), (86, 26247), (94, 26280), (103, 26331), (131, 26478), (132, 26481), (153, 26595), (166, 26649), (178, 26715), (188, 26769), (198, 26814), (202, 26829),

Gene: Coral\_41 Start: 25938, Stop: 26732, Start Num: 40

Candidate Starts for Coral\_41:

(Start: 40 @25938 has 25 MA's), (65, 26031), (73, 26067), (77, 26085), (86, 26118), (103, 26202), (131, 26349), (132, 26352), (153, 26466), (166, 26520), (178, 26586), (188, 26640), (198, 26685), (202, 26700),

Gene: Cote\_43 Start: 26415, Stop: 27209, Start Num: 40

Candidate Starts for Cote\_43:

(Start: 40 @26415 has 25 MA's), (65, 26508), (73, 26544), (77, 26562), (86, 26595), (103, 26679), (131, 26826), (132, 26829), (153, 26943), (166, 26997), (178, 27063), (188, 27117), (198, 27162), (202, 27177),

Gene: Cucurbita\_92 Start: 57344, Stop: 58069, Start Num: 49

Candidate Starts for Cucurbita\_92:

(5, 57044), (7, 57071), (8, 57074), (9, 57077), (25, 57239), (Start: 49 @57344 has 16 MA's), (74, 57452), (78, 57470), (82, 57485), (83, 57488), (94, 57539), (105, 57602), (119, 57629), (125, 57662), (132, 57701), (139, 57740), (146, 57770), (149, 57797), (161, 57842), (178, 57923), (182, 57947), (193, 57992), (199, 58022),

Gene: Culver\_92 Start: 55420, Stop: 56145, Start Num: 49

Candidate Starts for Culver\_92:

(Start: 49 @55420 has 16 MA's), (74, 55528), (78, 55546), (82, 55561), (83, 55564), (94, 55615), (105, 55678), (119, 55705), (125, 55738), (132, 55777), (139, 55816), (146, 55846), (149, 55873), (178, 55999), (182, 56023), (199, 56098),

Gene: Daob\_43 Start: 26423, Stop: 27217, Start Num: 40

Candidate Starts for Daob\_43:

(Start: 40 @26423 has 25 MA's), (65, 26516), (73, 26552), (77, 26570), (86, 26603), (103, 26687), (131, 26834), (132, 26837), (153, 26951), (158, 26975), (178, 27071), (188, 27125), (202, 27185),

Gene: Daredevil\_84 Start: 58699, Stop: 57869, Start Num: 39

Candidate Starts for Daredevil\_84:

(Start: 39 @58699 has 5 MA's), (61, 58609), (78, 58537), (94, 58468), (107, 58402), (121, 58360), (149, 58195), (155, 58177), (178, 58069), (182, 58045), (211, 57931), (219, 57877),

Gene: DatBoi\_90 Start: 62181, Stop: 61351, Start Num: 39

Candidate Starts for DatBoi\_90:

(Start: 39 @62181 has 5 MA's), (72, 62058), (78, 62022), (94, 61953), (121, 61845), (149, 61680), (155, 61662), (169, 61593), (178, 61554),

Gene: Delrey21\_51 Start: 44353, Stop: 45396, Start Num: 44



Candidate Starts for Delrey21\_51:

(Start: 44 @44353 has 118 MA's), (65, 44443), (72, 44467), (73, 44479), (97, 44575), (142, 44782), (156, 44848), (166, 44896), (178, 44968), (180, 44983), (185, 45004), (189, 45025), (190, 45028), (196, 45055), (218, 45133), (221, 45166), (224, 45178), (238, 45301), (242, 45328), (245, 45364),

Gene: Derg\_47 Start: 41912, Stop: 42934, Start Num: 44

Candidate Starts for Derg\_47:

(Start: 44 @41912 has 118 MA's), (54, 41948), (65, 42002), (72, 42026), (77, 42056), (85, 42086), (93, 42119), (97, 42134), (113, 42215), (124, 42263), (126, 42278), (127, 42281), (156, 42425), (164, 42458), (166, 42473), (178, 42542), (180, 42557), (193, 42614),

Gene: Dextert\_48 Start: 39661, Stop: 40713, Start Num: 44

Candidate Starts for Dextert\_48:

(Start: 44 @39661 has 118 MA's), (65, 39748), (72, 39772), (77, 39802), (93, 39865), (97, 39880), (102, 39913), (126, 40024), (132, 40051), (142, 40105), (156, 40171), (160, 40192), (164, 40204), (166, 40219), (178, 40303), (181, 40321), (185, 40339), (196, 40390), (221, 40492), (236, 40600), (238, 40621), (245, 40684),

Gene: DoctorFroggo\_51 Start: 44353, Stop: 45396, Start Num: 44

Candidate Starts for DoctorFroggo\_51:

(Start: 44 @44353 has 118 MA's), (65, 44443), (72, 44467), (73, 44479), (97, 44575), (142, 44782), (156, 44848), (166, 44896), (178, 44968), (180, 44983), (185, 45004), (189, 45025), (190, 45028), (196, 45055), (218, 45133), (221, 45166), (224, 45178), (238, 45301), (242, 45328), (245, 45364),

Gene: Donovan\_47 Start: 32566, Stop: 33558, Start Num: 50

Candidate Starts for Donovan\_47:

(4, 32245), (17, 32413), (28, 32476), (Start: 50 @32566 has 57 MA's), (Start: 55 @32581 has 1 MA's), (65, 32629), (76, 32680), (99, 32776), (108, 32815), (138, 32950), (162, 33061), (164, 33064), (170, 33103), (176, 33127), (178, 33145), (187, 33190), (194, 33220), (196, 33232), (229, 33376), (241, 33475), (245, 33523), (247, 33547),

Gene: Dori\_64 Start: 50133, Stop: 51218, Start Num: 44

Candidate Starts for Dori\_64:

(Start: 44 @50133 has 118 MA's), (53, 50169), (62, 50208), (65, 50217), (72, 50241), (75, 50262), (80, 50283), (82, 50292), (87, 50310), (92, 50343), (97, 50364), (99, 50379), (100, 50385), (104, 50406), (118, 50466), (129, 50526), (132, 50541), (145, 50613), (146, 50616), (164, 50700), (166, 50715), (172, 50742), (178, 50799), (180, 50814), (181, 50817), (184, 50829), (185, 50835), (186, 50838), (192, 50868), (196, 50886), (197, 50892), (213, 50943), (218, 50967), (222, 51000), (223, 51003), (227, 51033), (229, 51039), (234, 51072), (241, 51138), (243, 51162), (246, 51195),

Gene: Doucette\_41 Start: 28699, Stop: 29496, Start Num: 42

Candidate Starts for Doucette\_41:

(14, 28546), (36, 28684), (Start: 42 @28699 has 1 MA's), (46, 28711), (65, 28795), (73, 28831), (77, 28849), (79, 28858), (93, 28912), (108, 28981), (121, 29038), (122, 29041), (147, 29176), (148, 29179), (178, 29311), (183, 29338), (186, 29350), (191, 29377),

Gene: Duplicity\_48 Start: 33467, Stop: 34528, Start Num: 44

Candidate Starts for Duplicity\_48:

(Start: 44 @33467 has 118 MA's), (Start: 47 @33479 has 1 MA's), (62, 33545), (63, 33548), (65, 33554), (72, 33578), (75, 33599), (76, 33605), (79, 33617), (80, 33620), (82, 33629), (93, 33671), (97, 33686), (113, 33773), (134, 33878), (136, 33887), (144, 33932), (149, 33959), (153, 33971), (160, 34001), (164, 34013), (166, 34028), (172, 34055), (175, 34076), (178, 34109), (180, 34124), (181, 34127), (184, 34139), (186, 34148), (196, 34196), (197, 34202), (213, 34253), (218, 34277), (222,

34310), (223, 34313), (227, 34343), (229, 34349), (237, 34421), (240, 34439), (241, 34448), (245, 34496), (246, 34505),

Gene: Dusty\_87 Start: 55039, Stop: 55764, Start Num: 49

Candidate Starts for Dusty\_87:

(3, 54706), (5, 54739), (7, 54766), (8, 54769), (9, 54772), (16, 54880), (Start: 49 @55039 has 16 MA's), (74, 55147), (78, 55165), (82, 55180), (83, 55183), (94, 55234), (105, 55297), (119, 55324), (125, 55357), (132, 55396), (139, 55435), (146, 55465), (149, 55492), (161, 55537), (178, 55618), (182, 55642), (193, 55687), (199, 55717),

Gene: Dynamo\_47 Start: 33026, Stop: 34018, Start Num: 50

Candidate Starts for Dynamo\_47:

(4, 32705), (17, 32873), (28, 32936), (Start: 50 @33026 has 57 MA's), (Start: 55 @33041 has 1 MA's), (65, 33089), (76, 33140), (99, 33236), (108, 33275), (138, 33410), (162, 33521), (164, 33524), (170, 33563), (176, 33587), (178, 33605), (187, 33650), (194, 33680), (196, 33692), (229, 33836), (241, 33935), (245, 33983), (247, 34007),

Gene: EGUunicorn\_49 Start: 32155, Stop: 33219, Start Num: 44

Candidate Starts for EGUunicorn\_49:

(18, 32041), (Start: 44 @32155 has 118 MA's), (Start: 47 @32167 has 1 MA's), (62, 32233), (63, 32236), (65, 32242), (72, 32266), (75, 32287), (76, 32293), (79, 32305), (80, 32308), (82, 32317), (93, 32359), (97, 32374), (134, 32566), (149, 32647), (153, 32659), (156, 32668), (164, 32701), (166, 32716), (172, 32743), (178, 32797), (180, 32812), (184, 32827), (186, 32836), (192, 32866), (196, 32884), (197, 32890), (213, 32941), (222, 32998), (227, 33034), (229, 33040), (237, 33112), (240, 33130), (241, 33139), (245, 33187), (246, 33196),

Gene: EMoore\_47 Start: 42468, Stop: 43541, Start Num: 44

Candidate Starts for EMoore\_47:

(Start: 44 @42468 has 118 MA's), (54, 42504), (65, 42555), (72, 42579), (75, 42600), (77, 42609), (93, 42672), (97, 42687), (102, 42720), (121, 42804), (156, 42978), (160, 42999), (166, 43026), (178, 43107), (180, 43122), (189, 43164), (190, 43167), (196, 43194), (221, 43305), (235, 43401), (242, 43473), (245, 43509),

Gene: EastWest\_36 Start: 29042, Stop: 29902, Start Num: 44

Candidate Starts for EastWest\_36:

(Start: 44 @29042 has 118 MA's), (59, 29114), (66, 29150), (70, 29165), (72, 29171), (82, 29222), (97, 29279), (121, 29384), (131, 29435), (132, 29438), (144, 29501), (147, 29519), (164, 29579), (172, 29621), (176, 29660), (178, 29678), (181, 29696), (183, 29705), (186, 29717), (192, 29747), (196, 29765),

Gene: EdmundFerry\_46 Start: 39437, Stop: 40492, Start Num: 44

Candidate Starts for EdmundFerry\_46:

(35, 39407), (Start: 44 @39437 has 118 MA's), (65, 39524), (72, 39548), (77, 39578), (93, 39641), (97, 39656), (102, 39689), (126, 39800), (132, 39827), (142, 39881), (156, 39947), (160, 39968), (164, 39980), (166, 39995), (178, 40079), (181, 40097), (185, 40115), (189, 40136), (196, 40166), (221, 40274), (236, 40379), (238, 40400), (244, 40457), (245, 40463),

Gene: Eesa\_38 Start: 27219, Stop: 28025, Start Num: 37

Candidate Starts for Eesa\_38:

(Start: 37 @27219 has 11 MA's), (62, 27315), (65, 27324), (73, 27360), (77, 27378), (120, 27579), (136, 27672), (150, 27753), (157, 27771), (178, 27879), (202, 27993),

Gene: Engineer\_92 Start: 56810, Stop: 57535, Start Num: 49

Candidate Starts for Engineer\_92:

(5, 56510), (7, 56537), (8, 56540), (9, 56543), (25, 56705), (Start: 49 @56810 has 16 MA's), (74, 56918), (78, 56936), (82, 56951), (83, 56954), (94, 57005), (105, 57068), (119, 57095), (125, 57128), (132, 57167), (139, 57206), (146, 57236), (149, 57263), (161, 57308), (178, 57389), (182, 57413), (193, 57458), (199, 57488),

Gene: FirstPlacePfu\_47 Start: 32575, Stop: 33567, Start Num: 50

Candidate Starts for FirstPlacePfu\_47:

(17, 32422), (28, 32485), (Start: 50 @32575 has 57 MA's), (Start: 55 @32590 has 1 MA's), (65, 32638), (76, 32689), (99, 32785), (108, 32824), (138, 32959), (162, 33070), (164, 33073), (170, 33112), (176, 33136), (178, 33154), (187, 33199), (194, 33229), (196, 33241), (229, 33385), (241, 33484), (245, 33532), (247, 33556),

Gene: Fishburne\_46 Start: 32543, Stop: 33535, Start Num: 50

Candidate Starts for Fishburne\_46:

(4, 32222), (17, 32390), (28, 32453), (Start: 50 @32543 has 57 MA's), (Start: 55 @32558 has 1 MA's), (65, 32606), (76, 32657), (99, 32753), (108, 32792), (138, 32927), (162, 33038), (164, 33041), (170, 33080), (176, 33104), (178, 33122), (187, 33167), (194, 33197), (196, 33209), (229, 33353), (241, 33452), (245, 33500), (247, 33524),

Gene: Fitzgerald\_50 Start: 43949, Stop: 44947, Start Num: 43

Candidate Starts for Fitzgerald\_50:

(20, 43865), (24, 43886), (Start: 43 @43949 has 7 MA's), (54, 43985), (65, 44036), (67, 44042), (72, 44060), (77, 44090), (93, 44153), (97, 44168), (126, 44312), (156, 44459), (164, 44492), (166, 44507), (178, 44576), (180, 44591), (193, 44648), (196, 44663), (237, 44840), (245, 44912),

Gene: Flatwoods\_50 Start: 42261, Stop: 43283, Start Num: 44

Candidate Starts for Flatwoods\_50:

(Start: 44 @42261 has 118 MA's), (54, 42297), (65, 42351), (72, 42375), (77, 42405), (85, 42435), (93, 42468), (97, 42483), (113, 42564), (124, 42612), (126, 42627), (127, 42630), (156, 42774), (164, 42807), (166, 42822), (178, 42891), (180, 42906), (193, 42963), (196, 42978),

Gene: Fosterous\_52 Start: 43368, Stop: 44420, Start Num: 30

Candidate Starts for Fosterous\_52:

(13, 43260), (15, 43281), (Start: 30 @43368 has 1 MA's), (Start: 44 @43422 has 118 MA's), (54, 43458), (65, 43509), (67, 43515), (72, 43533), (77, 43563), (93, 43626), (97, 43641), (106, 43692), (124, 43770), (156, 43932), (164, 43965), (166, 43980), (178, 44049), (180, 44064), (193, 44121), (196, 44136), (237, 44313), (245, 44385),

Gene: Franzy\_33 Start: 29485, Stop: 30330, Start Num: 44

Candidate Starts for Franzy\_33:

(Start: 44 @29485 has 118 MA's), (65, 29575), (70, 29593), (72, 29599), (75, 29620), (81, 29647), (97, 29707), (106, 29764), (121, 29812), (144, 29929), (164, 30007), (168, 30034), (172, 30049), (176, 30088), (178, 30106), (181, 30124), (186, 30145), (189, 30163), (199, 30208),

Gene: FuegoCuervo\_55 Start: 42559, Stop: 43557, Start Num: 43

Candidate Starts for FuegoCuervo\_55:

(29, 42508), (Start: 43 @42559 has 7 MA's), (54, 42595), (65, 42646), (67, 42652), (72, 42670), (77, 42700), (93, 42763), (97, 42778), (113, 42859), (118, 42874), (126, 42922), (156, 43069), (164, 43102), (166, 43117), (178, 43186), (180, 43201), (193, 43258), (196, 43273), (237, 43450), (245, 43522),

Gene: Fulbright\_47 Start: 32547, Stop: 33608, Start Num: 44

Candidate Starts for Fulbright\_47:

(Start: 44 @32547 has 118 MA's), (Start: 47 @32559 has 1 MA's), (62, 32625), (63, 32628), (65, 32634), (72, 32658), (75, 32679), (76, 32685), (79, 32697), (80, 32700), (82, 32709), (93, 32751), (97, 32766), (113, 32853), (134, 32958), (136, 32967), (144, 33012), (149, 33039), (153, 33051), (160, 33081), (164, 33093), (166, 33108), (172, 33135), (175, 33156), (178, 33189), (180, 33204), (181, 33207), (184, 33219), (186, 33228), (196, 33276), (197, 33282), (213, 33333), (218, 33357), (222, 33390), (223, 33393), (227, 33423), (229, 33429), (237, 33501), (240, 33519), (241, 33528), (245, 33576), (246, 33585),

Gene: GTE6\_47 Start: 39899, Stop: 40960, Start Num: 44

Candidate Starts for GTE6\_47:

(35, 39869), (Start: 44 @39899 has 118 MA's), (65, 39986), (72, 40010), (77, 40040), (93, 40103), (97, 40118), (102, 40151), (126, 40262), (132, 40289), (142, 40343), (156, 40409), (160, 40430), (164, 40442), (166, 40457), (178, 40541), (181, 40559), (185, 40577), (189, 40598), (196, 40628), (221, 40739), (236, 40847), (238, 40868), (244, 40925), (245, 40931),

Gene: Gaea\_49 Start: 41917, Stop: 42939, Start Num: 44

Candidate Starts for Gaea\_49:

(Start: 44 @41917 has 118 MA's), (54, 41953), (65, 42007), (72, 42031), (77, 42061), (85, 42091), (93, 42124), (97, 42139), (113, 42220), (124, 42268), (126, 42283), (127, 42286), (156, 42430), (164, 42463), (166, 42478), (178, 42547), (180, 42562), (193, 42619), (196, 42634),

Gene: Galadriel\_52 Start: 43406, Stop: 44413, Start Num: 38

Candidate Starts for Galadriel\_52:

(Start: 38 @43406 has 8 MA's), (Start: 43 @43415 has 7 MA's), (54, 43451), (65, 43502), (67, 43508), (72, 43526), (77, 43556), (93, 43619), (97, 43634), (126, 43778), (156, 43925), (164, 43958), (166, 43973), (178, 44042), (180, 44057), (193, 44114), (196, 44129), (245, 44378),

Gene: Galaxy\_38 Start: 26092, Stop: 26898, Start Num: 37

Candidate Starts for Galaxy\_38:

(Start: 37 @26092 has 11 MA's), (62, 26188), (65, 26197), (77, 26251), (120, 26452), (136, 26545), (150, 26626), (178, 26752), (202, 26866),

Gene: Gavriela\_46 Start: 32800, Stop: 33774, Start Num: 50

Candidate Starts for Gavriela\_46:

(Start: 50 @32800 has 57 MA's), (Start: 55 @32818 has 1 MA's), (65, 32866), (76, 32917), (80, 32932), (82, 32941), (108, 33052), (138, 33187), (162, 33298), (164, 33301), (170, 33340), (176, 33364), (178, 33382), (187, 33427), (194, 33457), (196, 33469), (213, 33526), (229, 33595), (241, 33694), (245, 33742),

Gene: Geeche\_89 Start: 55875, Stop: 56600, Start Num: 49

Candidate Starts for Geeche\_89:

(Start: 49 @55875 has 16 MA's), (74, 55983), (78, 56001), (82, 56016), (83, 56019), (94, 56070), (105, 56133), (119, 56160), (125, 56193), (132, 56232), (139, 56271), (146, 56301), (149, 56328), (161, 56373), (178, 56454), (182, 56478), (193, 56523), (199, 56553),

Gene: Geodirt\_50 Start: 44037, Stop: 45035, Start Num: 43

Candidate Starts for Geodirt\_50:

(20, 43953), (24, 43974), (Start: 43 @44037 has 7 MA's), (54, 44073), (65, 44124), (67, 44130), (72, 44148), (77, 44178), (93, 44241), (97, 44256), (113, 44337), (122, 44376), (126, 44400), (156, 44547), (164, 44580), (166, 44595), (178, 44664), (180, 44679), (193, 44736), (196, 44751), (237, 44928), (245, 45000),

Gene: Gex\_48 Start: 33474, Stop: 34535, Start Num: 44

Candidate Starts for Gex\_48:

(Start: 44 @33474 has 118 MA's), (Start: 47 @33486 has 1 MA's), (62, 33552), (63, 33555), (65, 33561), (72, 33585), (75, 33606), (76, 33612), (79, 33624), (80, 33627), (82, 33636), (93, 33678), (97, 33693), (113, 33780), (134, 33885), (136, 33894), (144, 33939), (149, 33966), (153, 33978), (160, 34008), (164, 34020), (166, 34035), (172, 34062), (175, 34083), (178, 34116), (180, 34131), (181, 34134), (184, 34146), (186, 34155), (196, 34203), (197, 34209), (213, 34260), (218, 34284), (222, 34317), (223, 34320), (227, 34350), (229, 34356), (237, 34428), (240, 34446), (241, 34455), (245, 34503), (246, 34512),

Gene: Glaske\_46 Start: 32800, Stop: 33774, Start Num: 50

Candidate Starts for Glaske\_46:

(Start: 50 @32800 has 57 MA's), (Start: 55 @32818 has 1 MA's), (65, 32866), (76, 32917), (80, 32932), (82, 32941), (108, 33052), (138, 33187), (162, 33298), (164, 33301), (170, 33340), (176, 33364), (178, 33382), (187, 33427), (194, 33457), (196, 33469), (213, 33526), (229, 33595), (241, 33694), (245, 33742),

Gene: Glotell\_43 Start: 26173, Stop: 26970, Start Num: 40

Candidate Starts for Glotell\_43:

(Start: 40 @26173 has 25 MA's), (65, 26269), (77, 26323), (103, 26440), (111, 26476), (131, 26587), (144, 26659), (150, 26695), (153, 26704), (178, 26824), (196, 26911),

Gene: Gravel\_48 Start: 27192, Stop: 27998, Start Num: 37

Candidate Starts for Gravel\_48:

(Start: 37 @27192 has 11 MA's), (62, 27288), (65, 27297), (73, 27333), (77, 27351), (98, 27432), (136, 27645), (150, 27726), (157, 27744), (178, 27852), (202, 27966),

Gene: GravityBall\_35 Start: 29827, Stop: 30672, Start Num: 44

Candidate Starts for GravityBall\_35:

(Start: 44 @29827 has 118 MA's), (65, 29920), (66, 29923), (72, 29944), (77, 29974), (97, 30052), (106, 30109), (121, 30157), (131, 30208), (132, 30211), (134, 30226), (141, 30256), (144, 30274), (147, 30292), (164, 30352), (172, 30394), (176, 30433), (178, 30451), (181, 30469), (186, 30490), (189, 30508), (204, 30577), (210, 30589), (213, 30595),

Gene: GreaseLightnin\_47 Start: 32779, Stop: 33753, Start Num: 50

Candidate Starts for GreaseLightnin\_47:

(Start: 50 @32779 has 57 MA's), (Start: 55 @32797 has 1 MA's), (65, 32845), (76, 32896), (82, 32920), (108, 33031), (138, 33166), (162, 33277), (164, 33280), (170, 33319), (176, 33343), (178, 33361), (187, 33406), (194, 33436), (196, 33448), (213, 33505), (229, 33574), (241, 33673), (245, 33721),

Gene: Grekaycon\_35 Start: 29742, Stop: 30590, Start Num: 44

Candidate Starts for Grekaycon\_35:

(Start: 44 @29742 has 118 MA's), (65, 29832), (66, 29835), (72, 29856), (76, 29883), (77, 29886), (97, 29964), (106, 30021), (121, 30069), (131, 30120), (132, 30123), (144, 30186), (147, 30204), (164, 30264), (172, 30306), (176, 30345), (178, 30363), (181, 30381), (186, 30402), (189, 30420), (196, 30450), (210, 30501), (226, 30567),

Gene: Gustavo\_50 Start: 42537, Stop: 43559, Start Num: 44

Candidate Starts for Gustavo\_50:

(15, 42396), (Start: 30 @42483 has 1 MA's), (Start: 40 @42531 has 25 MA's), (Start: 44 @42537 has 118 MA's), (54, 42573), (65, 42627), (72, 42651), (77, 42681), (85, 42711), (93, 42744), (97, 42759), (124, 42888), (126, 42903), (127, 42906), (156, 43050), (164, 43083), (166, 43098), (178, 43167), (179, 43173), (180, 43182), (193, 43239), (196, 43254),

Gene: HC\_46 Start: 32186, Stop: 33181, Start Num: 50

Candidate Starts for HC\_46:

(21, 32051), (Start: 50 @32186 has 57 MA's), (Start: 55 @32201 has 1 MA's), (65, 32249), (76, 32300), (82, 32324), (108, 32435), (138, 32570), (162, 32681), (164, 32684), (170, 32723), (176, 32747), (178, 32765), (187, 32810), (194, 32840), (196, 32852), (217, 32930), (229, 32999), (241, 33098), (245, 33146), (247, 33170),

Gene: HUHilltop\_48 Start: 33058, Stop: 34032, Start Num: 50

Candidate Starts for HUHilltop\_48:

(Start: 50 @33058 has 57 MA's), (Start: 55 @33076 has 1 MA's), (65, 33124), (76, 33175), (82, 33199), (108, 33310), (138, 33445), (162, 33556), (164, 33559), (170, 33598), (176, 33622), (178, 33640), (187, 33685), (194, 33715), (196, 33727), (213, 33784), (229, 33853), (241, 33952), (245, 34000),

Gene: HamCheese\_40 Start: 26001, Stop: 26798, Start Num: 40

Candidate Starts for HamCheese\_40:

(Start: 40 @26001 has 25 MA's), (65, 26097), (77, 26151), (103, 26268), (111, 26304), (131, 26415), (144, 26487), (150, 26523), (153, 26532), (178, 26652), (183, 26679), (196, 26739),

Gene: Hanako\_52 Start: 34364, Stop: 35428, Start Num: 44

Candidate Starts for Hanako\_52:

(18, 34250), (Start: 44 @34364 has 118 MA's), (Start: 47 @34376 has 1 MA's), (62, 34442), (63, 34445), (65, 34451), (72, 34475), (75, 34496), (76, 34502), (79, 34514), (80, 34517), (82, 34526), (93, 34568), (97, 34583), (134, 34775), (149, 34856), (153, 34868), (156, 34877), (164, 34910), (166, 34925), (172, 34952), (178, 35006), (180, 35021), (184, 35036), (186, 35045), (192, 35075), (196, 35093), (197, 35099), (213, 35150), (222, 35207), (227, 35243), (229, 35249), (240, 35339), (241, 35348), (245, 35396), (246, 35405),

Gene: HannahPhantana\_42 Start: 26085, Stop: 26879, Start Num: 40

Candidate Starts for HannahPhantana\_42:

(Start: 40 @26085 has 25 MA's), (65, 26178), (73, 26214), (77, 26232), (86, 26265), (103, 26349), (131, 26496), (132, 26499), (153, 26613), (166, 26667), (178, 26733), (188, 26787), (198, 26832), (202, 26847),

Gene: Hans\_51 Start: 41907, Stop: 42968, Start Num: 44

Candidate Starts for Hans\_51:

(Start: 44 @41907 has 118 MA's), (54, 41943), (65, 41994), (72, 42018), (75, 42039), (84, 42075), (97, 42126), (102, 42159), (126, 42270), (156, 42417), (160, 42438), (164, 42450), (166, 42465), (178, 42546), (180, 42561), (189, 42603), (190, 42606), (221, 42735), (235, 42831), (242, 42903), (245, 42939),

Gene: Inspectinfecti\_50 Start: 42353, Stop: 43414, Start Num: 44

Candidate Starts for Inspectinfecti\_50:

(Start: 44 @42353 has 118 MA's), (54, 42389), (65, 42440), (72, 42464), (75, 42485), (84, 42521), (97, 42572), (102, 42605), (126, 42716), (156, 42863), (160, 42884), (164, 42896), (166, 42911), (178, 42992), (180, 43007), (189, 43049), (190, 43052), (221, 43181), (235, 43277), (242, 43349), (245, 43385),

Gene: Island3\_49 Start: 34787, Stop: 35854, Start Num: 44

Candidate Starts for Island3\_49:

(Start: 44 @34787 has 118 MA's), (Start: 47 @34799 has 1 MA's), (62, 34865), (65, 34874), (72, 34898), (75, 34919), (76, 34925), (80, 34940), (82, 34949), (93, 34991), (97, 35006), (113, 35093), (153, 35291), (164, 35333), (166, 35348), (172, 35375), (175, 35396), (178, 35429), (180, 35444),

(184, 35459), (186, 35468), (192, 35498), (196, 35516), (197, 35522), (206, 35555), (213, 35573), (228, 35666), (229, 35672), (241, 35771), (245, 35819), (247, 35843),

Gene: JKSyngboy\_48 Start: 43130, Stop: 44158, Start Num: 40

Candidate Starts for JKSyngboy\_48:

(15, 42995), (Start: 30 @43082 has 1 MA's), (Start: 40 @43130 has 25 MA's), (Start: 44 @43136 has 118 MA's), (54, 43172), (65, 43226), (72, 43250), (77, 43280), (85, 43310), (93, 43343), (97, 43358), (113, 43439), (124, 43487), (126, 43502), (156, 43649), (164, 43682), (166, 43697), (178, 43766), (180, 43781), (193, 43838),

Gene: JKerns\_35 Start: 29691, Stop: 30554, Start Num: 44

Candidate Starts for JKerns\_35:

(Start: 44 @29691 has 118 MA's), (65, 29781), (66, 29784), (72, 29805), (82, 29856), (97, 29913), (121, 30018), (140, 30108), (142, 30120), (144, 30135), (164, 30213), (168, 30240), (172, 30255), (176, 30297), (178, 30315), (181, 30333), (186, 30354), (189, 30372), (204, 30441), (213, 30459), (226, 30531),

Gene: Jabberwocky\_49 Start: 44097, Stop: 45095, Start Num: 43

Candidate Starts for Jabberwocky\_49:

(Start: 43 @44097 has 7 MA's), (54, 44133), (65, 44184), (67, 44190), (72, 44208), (77, 44238), (93, 44301), (97, 44316), (113, 44397), (118, 44412), (122, 44436), (126, 44460), (135, 44508), (156, 44607), (164, 44640), (166, 44655), (178, 44724), (180, 44739), (193, 44796), (196, 44811), (237, 44988), (245, 45060),

Gene: Jace\_32 Start: 26355, Stop: 27233, Start Num: 33

Candidate Starts for Jace\_32:

(Start: 33 @26355 has 1 MA's), (58, 26445), (65, 26478), (72, 26502), (80, 26544), (93, 26595), (97, 26610), (102, 26643), (144, 26847), (148, 26871), (153, 26886), (154, 26889), (162, 26922), (166, 26940), (178, 27024), (186, 27063), (189, 27081),

Gene: Jamie19\_46 Start: 32655, Stop: 33719, Start Num: 44

Candidate Starts for Jamie19\_46:

(18, 32541), (Start: 44 @32655 has 118 MA's), (Start: 47 @32667 has 1 MA's), (62, 32733), (63, 32736), (65, 32742), (72, 32766), (75, 32787), (76, 32793), (79, 32805), (80, 32808), (82, 32817), (93, 32859), (97, 32874), (134, 33066), (149, 33147), (153, 33159), (156, 33168), (164, 33201), (166, 33216), (172, 33243), (178, 33297), (180, 33312), (184, 33327), (186, 33336), (192, 33366), (196, 33384), (197, 33390), (213, 33441), (222, 33498), (227, 33534), (229, 33540), (240, 33630), (241, 33639), (245, 33687), (246, 33696),

Gene: Jamun\_38 Start: 26377, Stop: 27183, Start Num: 37

Candidate Starts for Jamun\_38:

(Start: 37 @26377 has 11 MA's), (62, 26473), (65, 26482), (77, 26536), (120, 26737), (136, 26830), (150, 26911), (178, 27037), (202, 27151),

Gene: Jawnski\_33 Start: 29492, Stop: 30337, Start Num: 44

Candidate Starts for Jawnski\_33:

(Start: 44 @29492 has 118 MA's), (65, 29579), (70, 29597), (72, 29603), (75, 29624), (97, 29711), (106, 29768), (121, 29816), (144, 29933), (164, 30011), (168, 30038), (172, 30053), (178, 30110), (181, 30128), (186, 30149), (189, 30167),

Gene: Jebeks\_48 Start: 32603, Stop: 33595, Start Num: 50

Candidate Starts for Jebeks\_48:

(4, 32282), (17, 32450), (28, 32513), (Start: 50 @32603 has 57 MA's), (Start: 55 @32618 has 1 MA's), (65, 32666), (76, 32717), (99, 32813), (108, 32852), (138, 32987), (162, 33098), (164, 33101), (170, 33140), (176, 33164), (178, 33182), (187, 33227), (194, 33257), (196, 33269), (229, 33413), (241, 33512), (245, 33560), (247, 33584),

Gene: Jerole\_51 Start: 26209, Stop: 27003, Start Num: 40

Candidate Starts for Jerole\_51:

(Start: 40 @26209 has 25 MA's), (65, 26302), (73, 26338), (77, 26356), (86, 26389), (103, 26473), (131, 26620), (132, 26623), (153, 26737), (166, 26791), (178, 26857), (188, 26911), (198, 26956), (202, 26971),

Gene: JonJames\_109 Start: 63983, Stop: 64675, Start Num: 49

Candidate Starts for JonJames\_109:

(Start: 49 @63983 has 16 MA's), (61, 64037), (71, 64070), (78, 64109), (88, 64145), (89, 64154), (94, 64178), (96, 64187), (97, 64190), (121, 64286), (130, 64328), (132, 64340), (143, 64397), (155, 64457), (161, 64484), (163, 64490), (178, 64565), (186, 64604), (190, 64625),

Gene: Jordan\_35 Start: 29741, Stop: 30604, Start Num: 44

Candidate Starts for Jordan\_35:

(Start: 44 @29741 has 118 MA's), (65, 29831), (66, 29834), (72, 29855), (82, 29906), (97, 29963), (121, 30068), (140, 30158), (142, 30170), (144, 30185), (164, 30263), (168, 30290), (172, 30305), (176, 30347), (178, 30365), (181, 30383), (186, 30404), (189, 30422), (204, 30491), (213, 30509), (226, 30581),

Gene: Journey\_47 Start: 31920, Stop: 32912, Start Num: 50

Candidate Starts for Journey\_47:

(4, 31599), (17, 31767), (28, 31830), (Start: 50 @31920 has 57 MA's), (Start: 55 @31935 has 1 MA's), (65, 31983), (76, 32034), (99, 32130), (108, 32169), (138, 32304), (162, 32415), (164, 32418), (170, 32457), (176, 32481), (178, 32499), (187, 32544), (194, 32574), (196, 32586), (229, 32730), (241, 32829), (245, 32877), (247, 32901),

Gene: Jung\_45 Start: 32501, Stop: 33496, Start Num: 50

Candidate Starts for Jung\_45:

(4, 32180), (17, 32348), (28, 32411), (Start: 50 @32501 has 57 MA's), (Start: 55 @32516 has 1 MA's), (65, 32564), (76, 32615), (99, 32711), (108, 32750), (138, 32885), (162, 32996), (164, 32999), (170, 33038), (176, 33062), (178, 33080), (187, 33125), (194, 33155), (196, 33167), (229, 33314), (241, 33413), (245, 33461), (247, 33485),

Gene: Juniormint\_47 Start: 32572, Stop: 33546, Start Num: 50

Candidate Starts for Juniormint\_47:

(Start: 50 @32572 has 57 MA's), (Start: 55 @32590 has 1 MA's), (65, 32638), (76, 32689), (80, 32704), (82, 32713), (108, 32824), (138, 32959), (162, 33070), (164, 33073), (170, 33112), (176, 33136), (178, 33154), (187, 33199), (194, 33229), (196, 33241), (213, 33298), (229, 33367), (241, 33466), (245, 33514),

Gene: Juno112\_40 Start: 26017, Stop: 26814, Start Num: 40

Candidate Starts for Juno112\_40:

(Start: 40 @26017 has 25 MA's), (65, 26113), (77, 26167), (103, 26284), (111, 26320), (131, 26431), (144, 26503), (150, 26539), (153, 26548), (178, 26668), (183, 26695), (196, 26755),

Gene: KHumphrey\_41 Start: 26016, Stop: 26813, Start Num: 40

Candidate Starts for KHumphrey\_41:



(Start: 40 @26016 has 25 MA's), (65, 26112), (77, 26166), (103, 26283), (111, 26319), (131, 26430), (144, 26502), (150, 26538), (153, 26547), (178, 26667), (196, 26754),

Gene: Kamashten\_50 Start: 42629, Stop: 43627, Start Num: 44

Candidate Starts for Kamashten\_50:

(10, 42386), (15, 42488), (Start: 30 @42575 has 1 MA's), (Start: 44 @42629 has 118 MA's), (54, 42665), (65, 42716), (67, 42722), (72, 42740), (77, 42770), (93, 42833), (97, 42848), (113, 42929), (122, 42968), (126, 42992), (156, 43139), (164, 43172), (166, 43187), (178, 43256), (180, 43271), (193, 43328), (196, 43343), (237, 43520), (245, 43592),

Gene: Kari\_46 Start: 32540, Stop: 33532, Start Num: 50

Candidate Starts for Kari\_46:

(4, 32219), (17, 32387), (28, 32450), (Start: 50 @32540 has 57 MA's), (Start: 55 @32555 has 1 MA's), (65, 32603), (76, 32654), (99, 32750), (108, 32789), (138, 32924), (162, 33035), (164, 33038), (170, 33077), (176, 33101), (178, 33119), (187, 33164), (194, 33194), (196, 33206), (229, 33350), (241, 33449), (245, 33497), (247, 33521),

Gene: Keitabear\_51 Start: 44151, Stop: 45146, Start Num: 44

Candidate Starts for Keitabear\_51:

(10, 43908), (15, 44010), (Start: 30 @44097 has 1 MA's), (Start: 44 @44151 has 118 MA's), (54, 44187), (65, 44238), (67, 44244), (72, 44262), (77, 44292), (93, 44355), (97, 44370), (113, 44451), (118, 44466), (122, 44490), (126, 44514), (156, 44661), (164, 44694), (166, 44709), (178, 44778), (180, 44793), (193, 44850), (196, 44865), (237, 45039), (245, 45111),

Gene: KendraB23\_49 Start: 27385, Stop: 28191, Start Num: 37

Candidate Starts for KendraB23\_49:

(Start: 37 @27385 has 11 MA's), (62, 27481), (65, 27490), (72, 27514), (73, 27526), (77, 27544), (136, 27838), (150, 27919), (157, 27937), (178, 28045), (183, 28072), (202, 28159),

Gene: Kepler\_43 Start: 26833, Stop: 27627, Start Num: 40

Candidate Starts for Kepler\_43:

(Start: 40 @26833 has 25 MA's), (65, 26926), (73, 26962), (77, 26980), (86, 27013), (103, 27097), (131, 27244), (132, 27247), (153, 27361), (158, 27385), (178, 27481), (188, 27535), (198, 27580), (202, 27595),

Gene: Kevin1\_50 Start: 33499, Stop: 34563, Start Num: 44

Candidate Starts for Kevin1\_50:

(Start: 44 @33499 has 118 MA's), (Start: 47 @33511 has 1 MA's), (62, 33577), (65, 33586), (72, 33610), (75, 33631), (76, 33637), (80, 33652), (82, 33661), (93, 33703), (97, 33718), (113, 33805), (153, 34003), (164, 34045), (166, 34060), (172, 34087), (175, 34108), (178, 34141), (180, 34156), (184, 34171), (186, 34180), (192, 34210), (196, 34228), (197, 34234), (206, 34267), (213, 34285), (228, 34378), (229, 34384), (240, 34474), (241, 34483), (245, 34531), (246, 34540),

Gene: Kewpiedoll\_52 Start: 43580, Stop: 44578, Start Num: 44

Candidate Starts for Kewpiedoll\_52:

(2, 43229), (10, 43337), (15, 43439), (Start: 30 @43526 has 1 MA's), (Start: 44 @43580 has 118 MA's), (54, 43616), (65, 43667), (67, 43673), (72, 43691), (77, 43721), (93, 43784), (97, 43799), (113, 43880), (118, 43895), (122, 43919), (126, 43943), (135, 43991), (156, 44090), (164, 44123), (166, 44138), (178, 44207), (180, 44222), (193, 44279), (196, 44294), (237, 44471), (245, 44543),

Gene: KilKor\_46 Start: 32800, Stop: 33774, Start Num: 50

Candidate Starts for KilKor\_46:

(Start: 50 @32800 has 57 MA's), (Start: 55 @32818 has 1 MA's), (65, 32866), (76, 32917), (80, 32932), (82, 32941), (108, 33052), (138, 33187), (162, 33298), (164, 33301), (170, 33340), (176, 33364), (178, 33382), (187, 33427), (194, 33457), (196, 33469), (213, 33526), (229, 33595), (241, 33694), (245, 33742),

Gene: King2\_33 Start: 29481, Stop: 30326, Start Num: 44

Candidate Starts for King2\_33:

(Start: 44 @29481 has 118 MA's), (65, 29571), (70, 29589), (72, 29595), (75, 29616), (81, 29643), (97, 29703), (106, 29760), (121, 29808), (144, 29925), (160, 29991), (164, 30003), (168, 30030), (172, 30045), (176, 30084), (178, 30102), (181, 30120), (186, 30141), (189, 30159), (196, 30189), (199, 30204),

Gene: Klevey\_38 Start: 29418, Stop: 30272, Start Num: 40

Candidate Starts for Klevey\_38:

(Start: 40 @29418 has 25 MA's), (65, 29508), (72, 29532), (97, 29640), (121, 29745), (144, 29865), (178, 30042), (183, 30069), (186, 30081), (216, 30198),

Gene: Kroos\_50 Start: 42820, Stop: 43842, Start Num: 44

Candidate Starts for Kroos\_50:

(Start: 44 @42820 has 118 MA's), (54, 42856), (65, 42910), (72, 42934), (77, 42964), (85, 42994), (93, 43027), (97, 43042), (113, 43123), (124, 43171), (126, 43186), (127, 43189), (156, 43333), (164, 43366), (166, 43381), (178, 43450), (180, 43465), (193, 43522), (196, 43537),

Gene: Ksquared\_46 Start: 32550, Stop: 33524, Start Num: 50

Candidate Starts for Ksquared\_46:

(Start: 50 @32550 has 57 MA's), (Start: 55 @32568 has 1 MA's), (65, 32616), (76, 32667), (80, 32682), (82, 32691), (108, 32802), (138, 32937), (162, 33048), (164, 33051), (170, 33090), (176, 33114), (178, 33132), (187, 33177), (194, 33207), (196, 33219), (213, 33276), (229, 33345), (241, 33444), (245, 33492),

Gene: Kuleana\_43 Start: 26408, Stop: 27208, Start Num: 40

Candidate Starts for Kuleana\_43:

(Start: 40 @26408 has 25 MA's), (65, 26504), (73, 26540), (77, 26558), (103, 26675), (111, 26711), (131, 26825), (132, 26828), (144, 26897), (153, 26942), (178, 27062), (188, 27116), (202, 27176),

Gene: Kwekel\_47 Start: 39327, Stop: 40385, Start Num: 44

Candidate Starts for Kwekel\_47:

(35, 39297), (Start: 44 @39327 has 118 MA's), (65, 39414), (72, 39438), (77, 39468), (93, 39531), (97, 39546), (102, 39579), (126, 39690), (132, 39717), (142, 39771), (156, 39837), (160, 39858), (164, 39870), (166, 39885), (178, 39969), (181, 39987), (185, 40005), (189, 40026), (196, 40056), (221, 40167), (236, 40272), (238, 40293), (244, 40350), (245, 40356),

Gene: Kwobi\_51 Start: 43246, Stop: 44268, Start Num: 44

Candidate Starts for Kwobi\_51:

(10, 43003), (15, 43105), (Start: 30 @43192 has 1 MA's), (Start: 44 @43246 has 118 MA's), (54, 43282), (65, 43336), (72, 43360), (77, 43390), (85, 43420), (93, 43453), (97, 43468), (113, 43549), (124, 43597), (126, 43612), (127, 43615), (156, 43759), (164, 43792), (166, 43807), (178, 43876), (180, 43891), (193, 43948), (196, 43963),

Gene: Langerak\_47 Start: 32559, Stop: 33551, Start Num: 50

Candidate Starts for Langerak\_47:

(4, 32238), (17, 32406), (28, 32469), (Start: 50 @32559 has 57 MA's), (Start: 55 @32574 has 1 MA's), (65, 32622), (76, 32673), (99, 32769), (108, 32808), (138, 32943), (162, 33054), (164, 33057), (170,

33096), (176, 33120), (178, 33138), (187, 33183), (194, 33213), (196, 33225), (229, 33369), (241, 33468), (245, 33516), (247, 33540),

Gene: LeeroyJ\_35 Start: 29826, Stop: 30671, Start Num: 44

Candidate Starts for LeeroyJ\_35:

(Start: 44 @29826 has 118 MA's), (65, 29919), (66, 29922), (72, 29943), (77, 29973), (97, 30051), (106, 30108), (121, 30156), (131, 30207), (132, 30210), (134, 30225), (144, 30273), (147, 30291), (164, 30351), (172, 30393), (176, 30432), (178, 30450), (181, 30468), (186, 30489), (189, 30507), (196, 30537), (204, 30576), (210, 30588), (213, 30594),

Gene: Lennon\_51 Start: 44231, Stop: 45241, Start Num: 44

Candidate Starts for Lennon\_51:

(2, 43880), (10, 43988), (15, 44090), (Start: 30 @44177 has 1 MA's), (Start: 44 @44231 has 118 MA's), (54, 44267), (65, 44318), (67, 44324), (72, 44342), (77, 44372), (93, 44435), (97, 44450), (113, 44531), (126, 44594), (156, 44741), (164, 44774), (166, 44789), (178, 44858), (180, 44873), (193, 44930), (196, 44945), (237, 45134), (245, 45206),

Gene: Leona\_40 Start: 26088, Stop: 26888, Start Num: 40

Candidate Starts for Leona\_40:

(Start: 40 @26088 has 25 MA's), (65, 26184), (77, 26238), (80, 26250), (98, 26319), (103, 26355), (109, 26385), (144, 26577), (153, 26622), (178, 26742), (196, 26829),

Gene: Leonard\_49 Start: 42000, Stop: 43061, Start Num: 44

Candidate Starts for Leonard\_49:

(26, 41934), (Start: 44 @42000 has 118 MA's), (54, 42036), (65, 42087), (72, 42111), (75, 42132), (84, 42168), (97, 42219), (102, 42252), (126, 42363), (156, 42510), (160, 42531), (164, 42543), (166, 42558), (178, 42639), (180, 42654), (189, 42696), (190, 42699), (221, 42828), (235, 42924), (242, 42996), (245, 43032),

Gene: LilHam\_47 Start: 41425, Stop: 42447, Start Num: 44

Candidate Starts for LilHam\_47:

(Start: 44 @41425 has 118 MA's), (54, 41461), (65, 41515), (72, 41539), (77, 41569), (85, 41599), (93, 41632), (97, 41647), (113, 41728), (124, 41776), (126, 41791), (127, 41794), (156, 41938), (164, 41971), (166, 41986), (178, 42055), (180, 42070), (193, 42127), (196, 42142),

Gene: Lilbeanie\_53 Start: 38965, Stop: 40047, Start Num: 44

Candidate Starts for Lilbeanie\_53:

(Start: 44 @38965 has 118 MA's), (65, 39055), (72, 39079), (73, 39091), (75, 39100), (84, 39136), (97, 39187), (110, 39247), (114, 39271), (128, 39340), (142, 39412), (148, 39451), (164, 39508), (166, 39523), (172, 39550), (178, 39604), (236, 39937), (237, 39949), (239, 39961), (245, 40018),

Gene: Lilmac1015\_40 Start: 29991, Stop: 30845, Start Num: 40

Candidate Starts for Lilmac1015\_40:

(Start: 40 @29991 has 25 MA's), (65, 30081), (72, 30105), (97, 30213), (121, 30318), (144, 30438), (178, 30615), (186, 30654), (216, 30771),

Gene: LittleTokyo\_41 Start: 25961, Stop: 26755, Start Num: 40

Candidate Starts for LittleTokyo\_41:

(Start: 40 @25961 has 25 MA's), (61, 26048), (65, 26060), (77, 26114), (82, 26135), (98, 26195), (103, 26231), (120, 26309), (131, 26372), (139, 26414), (144, 26444), (153, 26489), (166, 26543), (178, 26609), (196, 26696), (202, 26723),

Gene: Love\_56 Start: 44855, Stop: 45853, Start Num: 44

Candidate Starts for Love\_56:

(10, 44612), (15, 44714), (Start: 30 @44801 has 1 MA's), (Start: 44 @44855 has 118 MA's), (54, 44891), (65, 44942), (67, 44948), (72, 44966), (77, 44996), (93, 45059), (97, 45074), (113, 45155), (118, 45170), (122, 45194), (126, 45218), (156, 45365), (164, 45398), (166, 45413), (178, 45482), (180, 45497), (193, 45554), (196, 45569), (237, 45746), (245, 45818),

Gene: Lozinak\_91 Start: 56648, Stop: 57373, Start Num: 49

Candidate Starts for Lozinak\_91:

(5, 56348), (7, 56375), (8, 56378), (9, 56381), (25, 56543), (Start: 49 @56648 has 16 MA's), (74, 56756), (78, 56774), (82, 56789), (83, 56792), (94, 56843), (105, 56906), (119, 56933), (125, 56966), (132, 57005), (139, 57044), (146, 57074), (149, 57101), (161, 57146), (178, 57227), (182, 57251), (193, 57296), (199, 57326),

Gene: Lukepolites\_37 Start: 29627, Stop: 30544, Start Num: 48

Candidate Starts for Lukepolites\_37:

(Start: 40 @29600 has 25 MA's), (48, 29627), (61, 29696), (65, 29708), (72, 29732), (73, 29744), (80, 29774), (92, 29825), (97, 29846), (121, 29951), (132, 30005), (142, 30056), (144, 30071), (147, 30092), (164, 30149), (166, 30164), (178, 30230), (180, 30245), (198, 30329), (236, 30533),

Gene: Lunar\_43 Start: 26749, Stop: 27543, Start Num: 40

Candidate Starts for Lunar\_43:

(Start: 40 @26749 has 25 MA's), (65, 26842), (73, 26878), (77, 26896), (86, 26929), (103, 27013), (131, 27160), (132, 27163), (153, 27277), (158, 27301), (178, 27397), (188, 27451), (198, 27496), (202, 27511),

Gene: Magsby\_48 Start: 33475, Stop: 34536, Start Num: 44

Candidate Starts for Magsby\_48:

(Start: 44 @33475 has 118 MA's), (Start: 47 @33487 has 1 MA's), (62, 33553), (63, 33556), (65, 33562), (72, 33586), (75, 33607), (76, 33613), (79, 33625), (80, 33628), (82, 33637), (93, 33679), (97, 33694), (113, 33781), (134, 33886), (136, 33895), (144, 33940), (149, 33967), (153, 33979), (160, 34009), (164, 34021), (166, 34036), (172, 34063), (175, 34084), (178, 34117), (180, 34132), (181, 34135), (184, 34147), (186, 34156), (196, 34204), (197, 34210), (213, 34261), (218, 34285), (222, 34318), (223, 34321), (227, 34351), (229, 34357), (237, 34429), (240, 34447), (241, 34456), (245, 34504), (246, 34513),

Gene: Majeke\_47 Start: 32584, Stop: 33576, Start Num: 50

Candidate Starts for Majeke\_47:

(4, 32263), (17, 32431), (28, 32494), (Start: 50 @32584 has 57 MA's), (Start: 55 @32599 has 1 MA's), (65, 32647), (76, 32698), (99, 32794), (108, 32833), (138, 32968), (162, 33079), (164, 33082), (170, 33121), (176, 33145), (178, 33163), (187, 33208), (194, 33238), (196, 33250), (229, 33394), (241, 33493), (245, 33541), (247, 33565),

Gene: Malithi\_47 Start: 32459, Stop: 33451, Start Num: 50

Candidate Starts for Malithi\_47:

(4, 32138), (17, 32306), (28, 32369), (Start: 50 @32459 has 57 MA's), (Start: 55 @32474 has 1 MA's), (65, 32522), (76, 32573), (99, 32669), (108, 32708), (138, 32843), (162, 32954), (164, 32957), (170, 32996), (176, 33020), (178, 33038), (187, 33083), (194, 33113), (196, 33125), (229, 33269), (241, 33368), (245, 33416), (247, 33440),

Gene: Mangethe\_47 Start: 32584, Stop: 33576, Start Num: 50

Candidate Starts for Mangethe\_47:

(4, 32263), (17, 32431), (28, 32494), (Start: 50 @32584 has 57 MA's), (Start: 55 @32599 has 1 MA's), (65, 32647), (76, 32698), (99, 32794), (108, 32833), (138, 32968), (162, 33079), (164, 33082), (170,

33121), (176, 33145), (178, 33163), (187, 33208), (194, 33238), (196, 33250), (229, 33394), (241, 33493), (245, 33541), (247, 33565),

Gene: Mao1\_65 Start: 48471, Stop: 49460, Start Num: 50

Candidate Starts for Mao1\_65:

(23, 48357), (Start: 50 @48471 has 57 MA's), (60, 48516), (65, 48537), (73, 48573), (76, 48588), (97, 48669), (108, 48723), (116, 48741), (143, 48879), (150, 48915), (161, 48957), (162, 48960), (164, 48963), (176, 49026), (178, 49044), (181, 49062), (183, 49071), (186, 49083), (194, 49119), (196, 49131), (201, 49155), (203, 49164), (213, 49191), (219, 49227), (220, 49230), (225, 49251), (229, 49281), (241, 49380), (243, 49404), (246, 49437),

Gene: Martha\_35 Start: 29743, Stop: 30591, Start Num: 44

Candidate Starts for Martha\_35:

(Start: 44 @29743 has 118 MA's), (65, 29833), (66, 29836), (72, 29857), (76, 29884), (77, 29887), (97, 29965), (106, 30022), (121, 30070), (131, 30121), (132, 30124), (144, 30187), (147, 30205), (164, 30265), (172, 30307), (176, 30346), (178, 30364), (181, 30382), (186, 30403), (189, 30421), (196, 30451), (210, 30502), (226, 30568),

Gene: Mask\_64 Start: 50876, Stop: 51961, Start Num: 44

Candidate Starts for Mask\_64:

(Start: 44 @50876 has 118 MA's), (53, 50912), (62, 50951), (65, 50960), (72, 50984), (75, 51005), (80, 51026), (82, 51035), (87, 51053), (92, 51086), (97, 51107), (99, 51122), (100, 51128), (104, 51149), (118, 51209), (129, 51269), (132, 51284), (145, 51356), (146, 51359), (164, 51443), (166, 51458), (172, 51485), (178, 51542), (180, 51557), (181, 51560), (184, 51572), (185, 51578), (186, 51581), (192, 51611), (196, 51629), (197, 51635), (213, 51686), (218, 51710), (222, 51743), (223, 51746), (227, 51776), (229, 51782), (234, 51815), (241, 51881), (243, 51905), (246, 51938),

Gene: McKinley\_54 Start: 43977, Stop: 44984, Start Num: 38

Candidate Starts for McKinley\_54:

(Start: 38 @43977 has 8 MA's), (Start: 43 @43986 has 7 MA's), (54, 44022), (65, 44073), (67, 44079), (72, 44097), (77, 44127), (93, 44190), (97, 44205), (113, 44286), (118, 44301), (122, 44325), (126, 44349), (156, 44496), (164, 44529), (166, 44544), (178, 44613), (180, 44628), (193, 44685), (196, 44700), (237, 44877), (245, 44949),

Gene: Megiddo\_46 Start: 32800, Stop: 33774, Start Num: 50

Candidate Starts for Megiddo\_46:

(Start: 50 @32800 has 57 MA's), (Start: 55 @32818 has 1 MA's), (65, 32866), (76, 32917), (80, 32932), (82, 32941), (108, 33052), (138, 33187), (162, 33298), (164, 33301), (170, 33340), (176, 33364), (178, 33382), (187, 33427), (194, 33457), (196, 33469), (213, 33526), (229, 33595), (241, 33694), (245, 33742),

Gene: MelBins\_50 Start: 42252, Stop: 43313, Start Num: 44

Candidate Starts for MelBins\_50:

(Start: 44 @42252 has 118 MA's), (54, 42288), (65, 42339), (72, 42363), (75, 42384), (84, 42420), (93, 42456), (97, 42471), (102, 42504), (126, 42615), (156, 42762), (160, 42783), (164, 42795), (166, 42810), (178, 42891), (180, 42906), (189, 42948), (190, 42951), (208, 43020), (221, 43080), (235, 43176), (242, 43248), (245, 43284),

Gene: Melons\_43 Start: 26563, Stop: 27357, Start Num: 40

Candidate Starts for Melons\_43:

(Start: 40 @26563 has 25 MA's), (65, 26656), (73, 26692), (77, 26710), (86, 26743), (103, 26827), (131, 26974), (132, 26977), (153, 27091), (158, 27115), (178, 27211), (188, 27265), (198, 27310), (202, 27325),

Gene: Melville\_51 Start: 33459, Stop: 34520, Start Num: 44

Candidate Starts for Melville\_51:

(Start: 44 @33459 has 118 MA's), (Start: 47 @33471 has 1 MA's), (62, 33537), (63, 33540), (65, 33546), (72, 33570), (75, 33591), (76, 33597), (79, 33609), (80, 33612), (82, 33621), (93, 33663), (97, 33678), (113, 33765), (134, 33870), (136, 33879), (144, 33924), (149, 33951), (153, 33963), (160, 33993), (164, 34005), (166, 34020), (172, 34047), (175, 34068), (178, 34101), (180, 34116), (181, 34119), (184, 34131), (186, 34140), (196, 34188), (197, 34194), (213, 34245), (218, 34269), (222, 34302), (223, 34305), (227, 34335), (229, 34341), (237, 34413), (240, 34431), (241, 34440), (245, 34488), (246, 34497),

Gene: MichelleMyBell\_48 Start: 32199, Stop: 33182, Start Num: 51

Candidate Starts for MichelleMyBell\_48:

(Start: 51 @32199 has 1 MA's), (72, 32286), (73, 32298), (76, 32313), (80, 32328), (81, 32334), (97, 32394), (108, 32448), (116, 32466), (119, 32475), (127, 32523), (132, 32547), (143, 32604), (150, 32640), (161, 32682), (162, 32685), (164, 32688), (165, 32694), (166, 32703), (176, 32751), (178, 32769), (181, 32787), (186, 32808), (194, 32844), (196, 32856), (203, 32889), (220, 32949), (225, 32973), (229, 33003), (232, 33021), (241, 33102), (243, 33126), (246, 33159),

Gene: Miskis\_87 Start: 54557, Stop: 55282, Start Num: 49

Candidate Starts for Miskis\_87:

(3, 54224), (5, 54257), (7, 54284), (8, 54287), (9, 54290), (16, 54398), (Start: 49 @54557 has 16 MA's), (74, 54665), (78, 54683), (82, 54698), (83, 54701), (94, 54752), (105, 54815), (119, 54842), (125, 54875), (132, 54914), (139, 54953), (142, 54965), (146, 54983), (149, 55010), (161, 55055), (178, 55136), (182, 55160), (193, 55205), (199, 55235),

Gene: ModicumRichard\_40 Start: 33410, Stop: 34294, Start Num: 41

Candidate Starts for ModicumRichard\_40:

(Start: 41 @33410 has 5 MA's), (60, 33482), (64, 33500), (68, 33512), (73, 33539), (77, 33557), (97, 33644), (124, 33809), (148, 33941), (156, 33965), (162, 33992), (164, 33998), (177, 34079), (178, 34085), (186, 34124), (208, 34226),

Gene: Mollymur\_94 Start: 63842, Stop: 63024, Start Num: 39

Candidate Starts for Mollymur\_94:

(Start: 39 @63842 has 5 MA's), (61, 63752), (72, 63716), (78, 63680), (94, 63611), (121, 63503), (149, 63332), (155, 63314), (169, 63245), (178, 63206), (181, 63188), (182, 63182), (190, 63146), (196, 63125), (209, 63071),

Gene: MoontowerMania\_51 Start: 43863, Stop: 44861, Start Num: 44

Candidate Starts for MoontowerMania\_51:

(10, 43620), (15, 43722), (Start: 30 @43809 has 1 MA's), (Start: 44 @43863 has 118 MA's), (54, 43899), (65, 43950), (67, 43956), (72, 43974), (77, 44004), (93, 44067), (97, 44082), (113, 44163), (118, 44178), (122, 44202), (126, 44226), (156, 44373), (164, 44406), (166, 44421), (178, 44490), (180, 44505), (193, 44562), (196, 44577), (237, 44754), (245, 44826),

Gene: Morgana\_40 Start: 33361, Stop: 34245, Start Num: 41

Candidate Starts for Morgana\_40:

(Start: 38 @33355 has 8 MA's), (Start: 41 @33361 has 5 MA's), (60, 33433), (64, 33451), (68, 33463), (73, 33490), (77, 33508), (97, 33595), (124, 33760), (138, 33838), (148, 33892), (156, 33916), (162, 33943), (164, 33949), (177, 34030), (178, 34036), (186, 34075), (208, 34177),

Gene: NathanVaag\_33 Start: 29495, Stop: 30340, Start Num: 44

Candidate Starts for NathanVaag\_33:

(Start: 44 @29495 has 118 MA's), (65, 29582), (70, 29600), (72, 29606), (75, 29627), (97, 29714), (106, 29771), (121, 29819), (144, 29936), (164, 30014), (168, 30041), (172, 30056), (178, 30113), (181, 30131), (186, 30152), (189, 30170), (196, 30200),

Gene: Natkenzie\_51 Start: 43588, Stop: 44628, Start Num: 44

Candidate Starts for Natkenzie\_51:

(Start: 44 @43588 has 118 MA's), (65, 43678), (72, 43702), (73, 43714), (77, 43732), (97, 43810), (102, 43843), (142, 44017), (156, 44083), (166, 44131), (178, 44203), (180, 44218), (185, 44239), (189, 44260), (190, 44263), (218, 44368), (221, 44401), (224, 44413), (242, 44560), (245, 44596),

Gene: Nazo\_49 Start: 34648, Stop: 35700, Start Num: 50

Candidate Starts for Nazo\_49:

(Start: 47 @34630 has 1 MA's), (Start: 50 @34648 has 57 MA's), (59, 34687), (66, 34723), (72, 34744), (73, 34756), (79, 34783), (108, 34936), (113, 34963), (122, 35002), (137, 35083), (138, 35089), (156, 35164), (162, 35191), (178, 35272), (183, 35299), (228, 35515), (229, 35521), (241, 35620), (245, 35668),

Gene: Necropolis\_46 Start: 32615, Stop: 33607, Start Num: 50

Candidate Starts for Necropolis\_46:

(4, 32294), (17, 32462), (28, 32525), (Start: 50 @32615 has 57 MA's), (Start: 55 @32630 has 1 MA's), (65, 32678), (76, 32729), (99, 32825), (108, 32864), (138, 32999), (162, 33110), (164, 33113), (170, 33152), (176, 33176), (178, 33194), (187, 33239), (194, 33269), (196, 33281), (229, 33425), (241, 33524), (245, 33572), (247, 33596),

Gene: Nenae\_52 Start: 34366, Stop: 35430, Start Num: 44

Candidate Starts for Nenae\_52:

(18, 34252), (Start: 44 @34366 has 118 MA's), (Start: 47 @34378 has 1 MA's), (62, 34444), (63, 34447), (65, 34453), (72, 34477), (75, 34498), (76, 34504), (79, 34516), (80, 34519), (82, 34528), (93, 34570), (97, 34585), (134, 34777), (149, 34858), (153, 34870), (156, 34879), (164, 34912), (166, 34927), (172, 34954), (178, 35008), (180, 35023), (184, 35038), (186, 35047), (192, 35077), (196, 35095), (197, 35101), (213, 35152), (222, 35209), (227, 35245), (229, 35251), (240, 35341), (241, 35350), (245, 35398), (246, 35407),

Gene: Nordenberg\_47 Start: 42762, Stop: 43769, Start Num: 38

Candidate Starts for Nordenberg\_47:

(Start: 38 @42762 has 8 MA's), (Start: 43 @42771 has 7 MA's), (54, 42807), (65, 42858), (67, 42864), (72, 42882), (77, 42912), (93, 42975), (97, 42990), (106, 43041), (124, 43119), (156, 43281), (164, 43314), (166, 43329), (178, 43398), (180, 43413), (193, 43470), (196, 43485), (245, 43734),

Gene: Norvs\_91 Start: 56033, Stop: 56758, Start Num: 49

Candidate Starts for Norvs\_91:

(5, 55733), (7, 55760), (8, 55763), (9, 55766), (16, 55874), (Start: 49 @56033 has 16 MA's), (74, 56141), (78, 56159), (82, 56174), (83, 56177), (94, 56228), (105, 56291), (119, 56318), (125, 56351), (132, 56390), (139, 56429), (146, 56459), (149, 56486), (161, 56531), (178, 56612), (182, 56636), (193, 56681), (199, 56711),

Gene: Nostromo\_35 Start: 28820, Stop: 29710, Start Num: 44

Candidate Starts for Nostromo\_35:

(Start: 44 @28820 has 118 MA's), (70, 28925), (72, 28931), (75, 28952), (93, 29024), (97, 29039), (99, 29054), (121, 29144), (144, 29261), (164, 29342), (166, 29357), (172, 29384), (178, 29441), (181, 29459), (184, 29471), (196, 29528), (210, 29579), (231, 29684),

Gene: ObLaDi\_40 Start: 33395, Stop: 34282, Start Num: 41

Candidate Starts for ObLaDi\_40:

(Start: 38 @33389 has 8 MA's), (Start: 41 @33395 has 5 MA's), (60, 33467), (64, 33485), (68, 33497), (73, 33524), (77, 33542), (97, 33629), (124, 33794), (148, 33929), (156, 33953), (162, 33980), (164, 33986), (177, 34067), (178, 34073), (186, 34112),

Gene: OneUp\_81 Start: 54043, Stop: 54768, Start Num: 49

Candidate Starts for OneUp\_81:

(Start: 49 @54043 has 16 MA's), (71, 54130), (74, 54151), (78, 54169), (83, 54187), (94, 54238), (96, 54247), (105, 54301), (119, 54328), (125, 54361), (139, 54439), (146, 54469), (178, 54622), (182, 54646), (184, 54652), (193, 54691),

Gene: Orcanus\_39 Start: 26742, Stop: 27548, Start Num: 37

Candidate Starts for Orcanus\_39:

(Start: 37 @26742 has 11 MA's), (62, 26838), (65, 26847), (72, 26871), (73, 26883), (77, 26901), (120, 27102), (136, 27195), (150, 27276), (157, 27294), (178, 27402), (202, 27516),

Gene: PFR1\_36 Start: 27536, Stop: 28372, Start Num: 50

Candidate Starts for PFR1\_36:

(Start: 50 @27536 has 57 MA's), (58, 27557), (71, 27620), (77, 27653), (88, 27695), (94, 27728), (107, 27794), (112, 27824), (117, 27836), (123, 27869), (147, 28004), (156, 28031), (163, 28061), (171, 28103), (178, 28151), (181, 28169), (186, 28190), (192, 28220), (195, 28232), (204, 28277), (212, 28304), (218, 28334),

Gene: PFR2\_38 Start: 29105, Stop: 29941, Start Num: 50

Candidate Starts for PFR2\_38:

(Start: 50 @29105 has 57 MA's), (58, 29126), (71, 29189), (77, 29222), (88, 29264), (94, 29297), (107, 29363), (112, 29393), (117, 29405), (123, 29438), (147, 29573), (156, 29600), (163, 29630), (171, 29672), (178, 29720), (181, 29738), (186, 29759), (192, 29789), (195, 29801), (204, 29846), (212, 29873), (218, 29903),

Gene: Panchino\_45 Start: 34001, Stop: 35065, Start Num: 44

Candidate Starts for Panchino\_45:

(18, 33887), (Start: 44 @34001 has 118 MA's), (Start: 47 @34013 has 1 MA's), (62, 34079), (63, 34082), (65, 34088), (72, 34112), (75, 34133), (76, 34139), (79, 34151), (80, 34154), (82, 34163), (93, 34205), (97, 34220), (134, 34412), (149, 34493), (153, 34505), (156, 34514), (164, 34547), (166, 34562), (172, 34589), (178, 34643), (180, 34658), (184, 34673), (186, 34682), (192, 34712), (196, 34730), (197, 34736), (213, 34787), (222, 34844), (227, 34880), (229, 34886), (240, 34976), (241, 34985), (245, 35033), (246, 35042),

Gene: Paries\_55 Start: 44233, Stop: 45240, Start Num: 38

Candidate Starts for Paries\_55:

(Start: 38 @44233 has 8 MA's), (Start: 43 @44242 has 7 MA's), (54, 44278), (65, 44329), (67, 44335), (72, 44353), (77, 44383), (93, 44446), (97, 44461), (126, 44605), (156, 44752), (164, 44785), (166, 44800), (178, 44869), (180, 44884), (193, 44941), (196, 44956), (245, 45205),

Gene: Parmesanjohn\_48 Start: 33478, Stop: 34539, Start Num: 44

Candidate Starts for Parmesanjohn\_48:

(Start: 44 @33478 has 118 MA's), (Start: 47 @33490 has 1 MA's), (62, 33556), (63, 33559), (65, 33565), (72, 33589), (75, 33610), (76, 33616), (79, 33628), (80, 33631), (82, 33640), (93, 33682), (97, 33697), (113, 33784), (134, 33889), (136, 33898), (144, 33943), (149, 33970), (153, 33982), (160, 34012), (164, 34024), (166, 34039), (172, 34066), (175, 34087), (178, 34120), (180, 34135), (181, 34138), (184, 34150), (186, 34159), (196, 34207), (197, 34213), (213, 34264), (218, 34288), (222, 34321), (223, 34324), (227, 34354), (229, 34360), (237, 34432), (240, 34450), (241, 34459), (245,



34507), (246, 34516),

Gene: Pelletreau\_48 Start: 27192, Stop: 27998, Start Num: 37

Candidate Starts for Pelletreau\_48:

(Start: 37 @27192 has 11 MA's), (62, 27288), (65, 27297), (73, 27333), (77, 27351), (98, 27432), (136, 27645), (150, 27726), (157, 27744), (178, 27852), (202, 27966),

Gene: Phalm\_46 Start: 32800, Stop: 33774, Start Num: 50

Candidate Starts for Phalm\_46:

(Start: 50 @32800 has 57 MA's), (Start: 55 @32818 has 1 MA's), (65, 32866), (76, 32917), (80, 32932), (82, 32941), (108, 33052), (138, 33187), (162, 33298), (164, 33301), (170, 33340), (176, 33364), (178, 33382), (187, 33427), (194, 33457), (196, 33469), (213, 33526), (229, 33595), (241, 33694), (245, 33742),

Gene: PhancyPhin\_52 Start: 34360, Stop: 35424, Start Num: 44

Candidate Starts for PhancyPhin\_52:

(18, 34246), (Start: 44 @34360 has 118 MA's), (Start: 47 @34372 has 1 MA's), (62, 34438), (63, 34441), (65, 34447), (72, 34471), (75, 34492), (76, 34498), (79, 34510), (80, 34513), (82, 34522), (93, 34564), (97, 34579), (134, 34771), (149, 34852), (153, 34864), (156, 34873), (164, 34906), (166, 34921), (172, 34948), (178, 35002), (180, 35017), (184, 35032), (186, 35041), (192, 35071), (196, 35089), (197, 35095), (213, 35146), (222, 35203), (227, 35239), (229, 35245), (240, 35335), (241, 35344), (245, 35392), (246, 35401),

Gene: Phauci\_42 Start: 38921, Stop: 39982, Start Num: 44

Candidate Starts for Phauci\_42:

(6, 38648), (12, 38732), (Start: 44 @38921 has 118 MA's), (54, 38957), (65, 39008), (72, 39032), (84, 39089), (97, 39140), (126, 39284), (156, 39431), (160, 39452), (164, 39464), (166, 39479), (178, 39560), (180, 39575), (189, 39617), (190, 39620), (208, 39689), (221, 39749), (235, 39845), (242, 39917), (245, 39953),

Gene: Phayonce\_47 Start: 34633, Stop: 35622, Start Num: 50

Candidate Starts for Phayonce\_47:

(23, 34519), (Start: 50 @34633 has 57 MA's), (60, 34678), (65, 34699), (73, 34735), (76, 34750), (97, 34831), (108, 34885), (116, 34903), (143, 35041), (150, 35077), (161, 35119), (162, 35122), (164, 35125), (176, 35188), (178, 35206), (181, 35224), (183, 35233), (186, 35245), (194, 35281), (196, 35293), (201, 35317), (203, 35326), (213, 35353), (219, 35389), (220, 35392), (225, 35413), (229, 35443), (241, 35542), (243, 35566), (246, 35599),

Gene: Phegasus\_47 Start: 32551, Stop: 33543, Start Num: 50

Candidate Starts for Phegasus\_47:

(4, 32230), (17, 32398), (28, 32461), (Start: 50 @32551 has 57 MA's), (Start: 55 @32566 has 1 MA's), (65, 32614), (76, 32665), (99, 32761), (108, 32800), (138, 32935), (162, 33046), (164, 33049), (170, 33088), (176, 33112), (178, 33130), (187, 33175), (194, 33205), (196, 33217), (229, 33361), (241, 33460), (245, 33508), (247, 33532),

Gene: Philonius\_48 Start: 31652, Stop: 32644, Start Num: 50

Candidate Starts for Philonius\_48:

(Start: 50 @31652 has 57 MA's), (Start: 55 @31670 has 1 MA's), (65, 31718), (76, 31769), (80, 31784), (82, 31793), (108, 31904), (138, 32039), (162, 32150), (164, 32153), (170, 32192), (176, 32216), (178, 32234), (187, 32279), (194, 32309), (196, 32321), (229, 32465), (241, 32564), (245, 32612),

Gene: Phinally\_49 Start: 41997, Stop: 43058, Start Num: 44

Candidate Starts for Phinally\_49:

(26, 41931), (Start: 44 @41997 has 118 MA's), (54, 42033), (65, 42084), (72, 42108), (75, 42129), (84, 42165), (97, 42216), (102, 42249), (126, 42360), (156, 42507), (160, 42528), (164, 42540), (166, 42555), (178, 42636), (180, 42651), (189, 42693), (190, 42696), (221, 42825), (235, 42921), (242, 42993), (245, 43029),

Gene: Phineas\_48 Start: 33393, Stop: 34367, Start Num: 50

Candidate Starts for Phineas\_48:

(Start: 50 @33393 has 57 MA's), (Start: 55 @33411 has 1 MA's), (65, 33459), (76, 33510), (82, 33534), (108, 33645), (138, 33780), (162, 33891), (164, 33894), (170, 33933), (176, 33957), (178, 33975), (187, 34020), (194, 34050), (196, 34062), (213, 34119), (229, 34188), (241, 34287), (245, 34335),

Gene: PhinkBoden\_90 Start: 56438, Stop: 57163, Start Num: 49

Candidate Starts for PhinkBoden\_90:

(5, 56138), (7, 56165), (8, 56168), (9, 56171), (25, 56333), (Start: 49 @56438 has 16 MA's), (74, 56546), (78, 56564), (82, 56579), (83, 56582), (94, 56633), (105, 56696), (119, 56723), (125, 56756), (132, 56795), (139, 56834), (146, 56864), (149, 56891), (161, 56936), (178, 57017), (182, 57041), (193, 57086), (199, 57116),

Gene: Phloss\_46 Start: 32885, Stop: 33946, Start Num: 44

Candidate Starts for Phloss\_46:

(Start: 44 @32885 has 118 MA's), (Start: 47 @32897 has 1 MA's), (62, 32963), (63, 32966), (65, 32972), (72, 32996), (75, 33017), (76, 33023), (79, 33035), (80, 33038), (82, 33047), (93, 33089), (97, 33104), (113, 33191), (134, 33296), (136, 33305), (144, 33350), (149, 33377), (153, 33389), (160, 33419), (164, 33431), (166, 33446), (172, 33473), (175, 33494), (178, 33527), (180, 33542), (181, 33545), (184, 33557), (186, 33566), (196, 33614), (197, 33620), (213, 33671), (218, 33695), (222, 33728), (223, 33731), (227, 33761), (229, 33767), (237, 33839), (240, 33857), (241, 33866), (245, 33914), (246, 33923),

Gene: PhluffyCoco\_41 Start: 26013, Stop: 26810, Start Num: 40

Candidate Starts for PhluffyCoco\_41:

(Start: 40 @26013 has 25 MA's), (65, 26109), (77, 26163), (103, 26280), (111, 26316), (131, 26427), (144, 26499), (150, 26535), (153, 26544), (178, 26664), (183, 26691), (196, 26751),

Gene: Phrann\_49 Start: 34643, Stop: 35707, Start Num: 44

Candidate Starts for Phrann\_49:

(18, 34529), (Start: 44 @34643 has 118 MA's), (Start: 47 @34655 has 1 MA's), (62, 34721), (63, 34724), (65, 34730), (72, 34754), (75, 34775), (76, 34781), (79, 34793), (80, 34796), (82, 34805), (93, 34847), (97, 34862), (134, 35054), (149, 35135), (153, 35147), (156, 35156), (164, 35189), (166, 35204), (172, 35231), (178, 35285), (180, 35300), (184, 35315), (186, 35324), (192, 35354), (196, 35372), (197, 35378), (213, 35429), (222, 35486), (227, 35522), (229, 35528), (240, 35618), (241, 35627), (245, 35675), (246, 35684),

Gene: Piccoletto\_33 Start: 29496, Stop: 30341, Start Num: 44

Candidate Starts for Piccoletto\_33:

(Start: 44 @29496 has 118 MA's), (65, 29583), (70, 29601), (72, 29607), (75, 29628), (97, 29715), (106, 29772), (121, 29820), (123, 29829), (144, 29937), (164, 30015), (168, 30042), (172, 30057), (176, 30096), (178, 30114), (181, 30132), (186, 30153), (189, 30171), (196, 30201),

Gene: Pippa\_35 Start: 29870, Stop: 30733, Start Num: 44

Candidate Starts for Pippa\_35:

(Start: 44 @29870 has 118 MA's), (65, 29960), (66, 29963), (72, 29984), (82, 30035), (97, 30092), (121, 30197), (140, 30287), (142, 30299), (144, 30314), (164, 30392), (168, 30419), (172, 30434), (176, 30476), (178, 30494), (181, 30512), (186, 30533), (189, 30551), (204, 30620), (213, 30638),

(226, 30710),

Gene: Pipsqueaks\_48 Start: 33455, Stop: 34516, Start Num: 44

Candidate Starts for Pipsqueaks\_48:

(Start: 44 @33455 has 118 MA's), (Start: 47 @33467 has 1 MA's), (62, 33533), (63, 33536), (65, 33542), (72, 33566), (75, 33587), (76, 33593), (79, 33605), (80, 33608), (82, 33617), (93, 33659), (97, 33674), (113, 33761), (134, 33866), (136, 33875), (144, 33920), (149, 33947), (153, 33959), (160, 33989), (164, 34001), (166, 34016), (172, 34043), (175, 34064), (178, 34097), (180, 34112), (181, 34115), (184, 34127), (186, 34136), (196, 34184), (197, 34190), (213, 34241), (218, 34265), (222, 34298), (223, 34301), (227, 34331), (229, 34337), (237, 34409), (240, 34427), (241, 34436), (245, 34484), (246, 34493),

Gene: Polka\_41 Start: 25939, Stop: 26733, Start Num: 40

Candidate Starts for Polka\_41:

(Start: 40 @25939 has 25 MA's), (65, 26032), (73, 26068), (77, 26086), (86, 26119), (103, 26203), (131, 26350), (132, 26353), (153, 26467), (158, 26491), (178, 26587), (188, 26641), (198, 26686), (202, 26701),

Gene: Polkaroo\_47 Start: 32547, Stop: 33539, Start Num: 50

Candidate Starts for Polkaroo\_47:

(4, 32226), (17, 32394), (28, 32457), (Start: 50 @32547 has 57 MA's), (Start: 55 @32562 has 1 MA's), (65, 32610), (76, 32661), (99, 32757), (108, 32796), (138, 32931), (162, 33042), (164, 33045), (170, 33084), (176, 33108), (178, 33126), (187, 33171), (194, 33201), (196, 33213), (229, 33357), (241, 33456), (245, 33504), (247, 33528),

Gene: Prairie\_37 Start: 29334, Stop: 30188, Start Num: 40

Candidate Starts for Prairie\_37:

(Start: 40 @29334 has 25 MA's), (65, 29424), (72, 29448), (97, 29556), (121, 29661), (144, 29781), (178, 29958), (186, 29997), (216, 30114),

Gene: Purgamenstris\_52 Start: 34364, Stop: 35428, Start Num: 44

Candidate Starts for Purgamenstris\_52:

(18, 34250), (Start: 44 @34364 has 118 MA's), (Start: 47 @34376 has 1 MA's), (62, 34442), (63, 34445), (65, 34451), (72, 34475), (75, 34496), (76, 34502), (79, 34514), (80, 34517), (82, 34526), (93, 34568), (97, 34583), (134, 34775), (149, 34856), (153, 34868), (156, 34877), (164, 34910), (166, 34925), (172, 34952), (178, 35006), (180, 35021), (184, 35036), (186, 35045), (192, 35075), (196, 35093), (197, 35099), (213, 35150), (222, 35207), (227, 35243), (229, 35249), (240, 35339), (241, 35348), (245, 35396), (246, 35405),

Gene: Purky\_52 Start: 35044, Stop: 36114, Start Num: 50

Candidate Starts for Purky\_52:

(Start: 47 @35026 has 1 MA's), (Start: 50 @35044 has 57 MA's), (61, 35104), (64, 35113), (66, 35119), (72, 35140), (73, 35152), (79, 35179), (108, 35332), (113, 35359), (137, 35479), (143, 35506), (156, 35560), (162, 35587), (167, 35614), (178, 35668), (183, 35695), (228, 35929), (229, 35935), (241, 36034), (245, 36082),

Gene: Pygmy\_50 Start: 34875, Stop: 35831, Start Num: 55

Candidate Starts for Pygmy\_50:

(Start: 50 @34857 has 57 MA's), (Start: 55 @34875 has 1 MA's), (65, 34923), (76, 34974), (82, 34998), (108, 35109), (138, 35244), (162, 35355), (164, 35358), (170, 35397), (176, 35421), (178, 35439), (187, 35484), (194, 35514), (196, 35526), (213, 35583), (229, 35652), (241, 35751), (245, 35799),

Gene: QueenHazel\_44 Start: 32701, Stop: 33696, Start Num: 50

Candidate Starts for QueenHazel\_44:

(21, 32566), (Start: 50 @32701 has 57 MA's), (Start: 55 @32716 has 1 MA's), (65, 32764), (76, 32815), (82, 32839), (108, 32950), (138, 33085), (162, 33196), (164, 33199), (170, 33238), (176, 33262), (178, 33280), (187, 33325), (194, 33355), (196, 33367), (213, 33424), (229, 33514), (241, 33613), (245, 33661), (247, 33685),

Gene: Rattail\_41 Start: 26099, Stop: 26896, Start Num: 40

Candidate Starts for Rattail\_41:

(Start: 40 @26099 has 25 MA's), (65, 26195), (77, 26249), (103, 26366), (111, 26402), (131, 26513), (144, 26585), (150, 26621), (153, 26630), (178, 26750), (183, 26777), (196, 26837),

Gene: Raymond7\_46 Start: 34152, Stop: 35216, Start Num: 44

Candidate Starts for Raymond7\_46:

(18, 34038), (Start: 44 @34152 has 118 MA's), (Start: 47 @34164 has 1 MA's), (62, 34230), (63, 34233), (65, 34239), (72, 34263), (75, 34284), (76, 34290), (79, 34302), (80, 34305), (82, 34314), (93, 34356), (97, 34371), (134, 34563), (149, 34644), (153, 34656), (156, 34665), (164, 34698), (166, 34713), (172, 34740), (178, 34794), (180, 34809), (184, 34824), (186, 34833), (192, 34863), (196, 34881), (197, 34887), (213, 34938), (222, 34995), (227, 35031), (229, 35037), (240, 35127), (241, 35136), (245, 35184), (246, 35193),

Gene: Rebel\_44 Start: 30494, Stop: 31558, Start Num: 44

Candidate Starts for Rebel\_44:

(18, 30380), (Start: 44 @30494 has 118 MA's), (Start: 47 @30506 has 1 MA's), (62, 30572), (63, 30575), (65, 30581), (72, 30605), (75, 30626), (76, 30632), (79, 30644), (80, 30647), (82, 30656), (93, 30698), (97, 30713), (134, 30905), (149, 30986), (153, 30998), (156, 31007), (164, 31040), (166, 31055), (172, 31082), (178, 31136), (180, 31151), (184, 31166), (186, 31175), (192, 31205), (196, 31223), (197, 31229), (213, 31280), (222, 31337), (227, 31373), (229, 31379), (240, 31469), (241, 31478), (245, 31526), (246, 31535),

Gene: RedFox\_41 Start: 26012, Stop: 26809, Start Num: 40

Candidate Starts for RedFox\_41:

(Start: 40 @26012 has 25 MA's), (65, 26108), (77, 26162), (103, 26279), (111, 26315), (131, 26426), (144, 26498), (150, 26534), (153, 26543), (178, 26663), (183, 26690), (196, 26750),

Gene: Redi\_52 Start: 34363, Stop: 35427, Start Num: 44

Candidate Starts for Redi\_52:

(18, 34249), (Start: 44 @34363 has 118 MA's), (Start: 47 @34375 has 1 MA's), (62, 34441), (63, 34444), (65, 34450), (72, 34474), (75, 34495), (76, 34501), (79, 34513), (80, 34516), (82, 34525), (93, 34567), (97, 34582), (134, 34774), (149, 34855), (153, 34867), (156, 34876), (164, 34909), (166, 34924), (172, 34951), (178, 35005), (180, 35020), (184, 35035), (186, 35044), (192, 35074), (196, 35092), (197, 35098), (213, 35149), (222, 35206), (227, 35242), (229, 35248), (240, 35338), (241, 35347), (245, 35395), (246, 35404),

Gene: Renna12\_40 Start: 26070, Stop: 26870, Start Num: 40

Candidate Starts for Renna12\_40:

(Start: 40 @26070 has 25 MA's), (65, 26166), (77, 26220), (80, 26232), (98, 26301), (103, 26337), (109, 26367), (144, 26559), (153, 26604), (178, 26724), (183, 26751), (196, 26811),

Gene: Ribeye\_50 Start: 43238, Stop: 44260, Start Num: 44

Candidate Starts for Ribeye\_50:

(Start: 44 @43238 has 118 MA's), (54, 43274), (65, 43328), (72, 43352), (77, 43382), (85, 43412), (93, 43445), (97, 43460), (113, 43541), (124, 43589), (126, 43604), (127, 43607), (156, 43751), (164, 43784), (166, 43799), (178, 43868), (180, 43883), (193, 43940), (196, 43955),

Gene: RiverRaider\_52 Start: 41929, Stop: 42948, Start Num: 44

Candidate Starts for RiverRaider\_52:

(Start: 30 @41884 has 1 MA's), (Start: 44 @41929 has 118 MA's), (65, 42016), (72, 42040), (77, 42070), (93, 42133), (97, 42148), (124, 42277), (156, 42439), (164, 42472), (166, 42487), (178, 42556), (180, 42571), (193, 42628), (196, 42643), (214, 42706), (233, 42796), (246, 42925),

Gene: RoadKill\_45 Start: 38932, Stop: 39990, Start Num: 44

Candidate Starts for RoadKill\_45:

(35, 38902), (Start: 44 @38932 has 118 MA's), (65, 39019), (72, 39043), (77, 39073), (93, 39136), (97, 39151), (102, 39184), (126, 39295), (132, 39322), (142, 39376), (156, 39442), (160, 39463), (164, 39475), (166, 39490), (178, 39574), (181, 39592), (185, 39610), (189, 39631), (196, 39661), (221, 39772), (236, 39877), (238, 39898), (244, 39955), (245, 39961),

Gene: Rofo\_51 Start: 43335, Stop: 44345, Start Num: 38

Candidate Starts for Rofo\_51:

(Start: 38 @43335 has 8 MA's), (Start: 43 @43344 has 7 MA's), (54, 43380), (65, 43434), (67, 43440), (72, 43458), (77, 43488), (93, 43551), (97, 43566), (113, 43647), (126, 43710), (156, 43857), (164, 43890), (166, 43905), (178, 43974), (180, 43989), (193, 44046), (196, 44061), (236, 44226), (245, 44310),

Gene: Rubeelu\_51 Start: 34063, Stop: 35127, Start Num: 44

Candidate Starts for Rubeelu\_51:

(Start: 44 @34063 has 118 MA's), (Start: 47 @34075 has 1 MA's), (62, 34141), (65, 34150), (72, 34174), (75, 34195), (76, 34201), (80, 34216), (82, 34225), (93, 34267), (97, 34282), (113, 34369), (153, 34567), (164, 34609), (166, 34624), (172, 34651), (175, 34672), (178, 34705), (180, 34720), (184, 34735), (186, 34744), (192, 34774), (196, 34792), (197, 34798), (206, 34831), (213, 34849), (228, 34942), (229, 34948), (240, 35038), (241, 35047), (245, 35095), (246, 35104),

Gene: Ruchi\_38 Start: 26786, Stop: 27592, Start Num: 37

Candidate Starts for Ruchi\_38:

(Start: 37 @26786 has 11 MA's), (62, 26882), (65, 26891), (73, 26927), (77, 26945), (136, 27239), (143, 27275), (164, 27365), (178, 27446), (202, 27560),

Gene: Sampson\_51 Start: 43533, Stop: 44573, Start Num: 44

Candidate Starts for Sampson\_51:

(Start: 44 @43533 has 118 MA's), (65, 43623), (72, 43647), (73, 43659), (77, 43677), (97, 43755), (102, 43788), (142, 43962), (156, 44028), (166, 44076), (178, 44148), (180, 44163), (185, 44184), (189, 44205), (190, 44208), (218, 44313), (221, 44346), (224, 44358), (242, 44505), (245, 44541),

Gene: Sanjuju\_50 Start: 44082, Stop: 45080, Start Num: 43

Candidate Starts for Sanjuju\_50:

(20, 43998), (24, 44019), (Start: 43 @44082 has 7 MA's), (54, 44118), (65, 44169), (67, 44175), (72, 44193), (77, 44223), (93, 44286), (97, 44301), (126, 44445), (156, 44592), (164, 44625), (166, 44640), (178, 44709), (180, 44724), (193, 44781), (196, 44796), (237, 44973), (245, 45045),

Gene: Saronaya\_50 Start: 42537, Stop: 43559, Start Num: 44

Candidate Starts for Saronaya\_50:

(15, 42396), (Start: 30 @42483 has 1 MA's), (Start: 40 @42531 has 25 MA's), (Start: 44 @42537 has 118 MA's), (54, 42573), (65, 42627), (72, 42651), (77, 42681), (85, 42711), (93, 42744), (97, 42759), (124, 42888), (126, 42903), (127, 42906), (156, 43050), (164, 43083), (166, 43098), (178, 43167), (179, 43173), (180, 43182), (193, 43239), (196, 43254),

Gene: Sbash\_58 Start: 41406, Stop: 42380, Start Num: 50

Candidate Starts for Sbash\_58:

(Start: 50 @41406 has 57 MA's), (Start: 55 @41421 has 1 MA's), (65, 41469), (69, 41481), (76, 41520), (81, 41541), (82, 41544), (91, 41562), (123, 41709), (134, 41769), (136, 41778), (150, 41850), (153, 41859), (164, 41898), (170, 41937), (176, 41961), (178, 41979), (181, 41997), (186, 42018), (187, 42024), (194, 42054), (228, 42195), (229, 42201), (245, 42348),

Gene: Schnauzer\_49 Start: 33478, Stop: 34539, Start Num: 44

Candidate Starts for Schnauzer\_49:

(Start: 44 @33478 has 118 MA's), (Start: 47 @33490 has 1 MA's), (62, 33556), (63, 33559), (65, 33565), (72, 33589), (75, 33610), (76, 33616), (79, 33628), (80, 33631), (82, 33640), (93, 33682), (97, 33697), (113, 33784), (134, 33889), (136, 33898), (144, 33943), (149, 33970), (153, 33982), (160, 34012), (164, 34024), (166, 34039), (172, 34066), (175, 34087), (178, 34120), (180, 34135), (181, 34138), (184, 34150), (186, 34159), (196, 34207), (197, 34213), (213, 34264), (218, 34288), (222, 34321), (223, 34324), (227, 34354), (229, 34360), (237, 34432), (240, 34450), (241, 34459), (245, 34507), (246, 34516),

Gene: SchottB\_48 Start: 43080, Stop: 44102, Start Num: 44

Candidate Starts for SchottB\_48:

(Start: 44 @43080 has 118 MA's), (54, 43116), (65, 43170), (72, 43194), (77, 43224), (85, 43254), (93, 43287), (97, 43302), (113, 43383), (124, 43431), (126, 43446), (127, 43449), (156, 43593), (164, 43626), (166, 43641), (178, 43710), (180, 43725), (193, 43782), (196, 43797),

Gene: Scioto\_52 Start: 43589, Stop: 44629, Start Num: 44

Candidate Starts for Scioto\_52:

(Start: 44 @43589 has 118 MA's), (65, 43679), (72, 43703), (73, 43715), (77, 43733), (97, 43811), (102, 43844), (142, 44018), (156, 44084), (166, 44132), (178, 44204), (180, 44219), (185, 44240), (189, 44261), (190, 44264), (218, 44369), (221, 44402), (224, 44414), (242, 44561), (245, 44597),

Gene: Scitech\_45 Start: 31494, Stop: 32558, Start Num: 44

Candidate Starts for Scitech\_45:

(Start: 44 @31494 has 118 MA's), (Start: 47 @31506 has 1 MA's), (62, 31572), (63, 31575), (65, 31581), (72, 31605), (75, 31626), (76, 31632), (79, 31644), (80, 31647), (82, 31656), (93, 31698), (97, 31713), (113, 31800), (134, 31905), (136, 31914), (144, 31959), (149, 31986), (153, 31998), (160, 32028), (164, 32040), (166, 32055), (172, 32082), (175, 32103), (178, 32136), (180, 32151), (181, 32154), (184, 32166), (186, 32175), (196, 32223), (197, 32229), (213, 32280), (218, 32304), (222, 32337), (223, 32340), (227, 32370), (229, 32376), (240, 32469), (241, 32478), (243, 32502), (246, 32535),

Gene: Sedona\_51 Start: 43831, Stop: 44826, Start Num: 44

Candidate Starts for Sedona\_51:

(10, 43588), (15, 43690), (Start: 30 @43777 has 1 MA's), (Start: 44 @43831 has 118 MA's), (54, 43867), (65, 43918), (67, 43924), (72, 43942), (77, 43972), (93, 44035), (97, 44050), (113, 44131), (118, 44146), (122, 44170), (126, 44194), (156, 44341), (164, 44374), (166, 44389), (178, 44458), (180, 44473), (193, 44530), (196, 44545), (237, 44719), (245, 44791),

Gene: Sejanus\_64 Start: 49582, Stop: 50574, Start Num: 50

Candidate Starts for Sejanus\_64:

(23, 49468), (Start: 50 @49582 has 57 MA's), (60, 49627), (65, 49648), (72, 49672), (73, 49684), (76, 49699), (96, 49777), (97, 49780), (108, 49834), (116, 49852), (138, 49969), (143, 49990), (150, 50026), (161, 50068), (162, 50071), (164, 50074), (176, 50137), (178, 50155), (181, 50173), (186, 50194), (194, 50230), (196, 50242), (213, 50302), (219, 50338), (220, 50341), (225, 50365), (229, 50395), (232, 50413), (241, 50494), (243, 50518), (246, 50551),

Gene: Shade\_35 Start: 29715, Stop: 30578, Start Num: 44

Candidate Starts for Shade\_35:

(Start: 44 @29715 has 118 MA's), (65, 29805), (66, 29808), (72, 29829), (82, 29880), (97, 29937), (121, 30042), (140, 30132), (142, 30144), (144, 30159), (164, 30237), (168, 30264), (172, 30279), (176, 30321), (178, 30339), (181, 30357), (186, 30378), (189, 30396), (204, 30465), (213, 30483), (226, 30555),

Gene: Shipwreck\_50 Start: 34832, Stop: 35806, Start Num: 50

Candidate Starts for Shipwreck\_50:

(Start: 50 @34832 has 57 MA's), (Start: 55 @34850 has 1 MA's), (65, 34898), (76, 34949), (82, 34973), (108, 35084), (138, 35219), (162, 35330), (164, 35333), (170, 35372), (176, 35396), (178, 35414), (187, 35459), (194, 35489), (196, 35501), (213, 35558), (229, 35627), (241, 35726), (245, 35774),

Gene: Shivanishola\_51 Start: 42552, Stop: 43547, Start Num: 44

Candidate Starts for Shivanishola\_51:

(10, 42309), (15, 42411), (Start: 30 @42498 has 1 MA's), (Start: 44 @42552 has 118 MA's), (54, 42588), (65, 42639), (67, 42645), (72, 42663), (77, 42693), (93, 42756), (97, 42771), (113, 42852), (118, 42867), (122, 42891), (126, 42915), (156, 43062), (164, 43095), (166, 43110), (178, 43179), (180, 43194), (193, 43251), (196, 43266), (237, 43440), (245, 43512),

Gene: ShrimpFriedEgg\_52 Start: 34363, Stop: 35427, Start Num: 44

Candidate Starts for ShrimpFriedEgg\_52:

(18, 34249), (Start: 44 @34363 has 118 MA's), (Start: 47 @34375 has 1 MA's), (62, 34441), (63, 34444), (65, 34450), (72, 34474), (75, 34495), (76, 34501), (79, 34513), (80, 34516), (82, 34525), (93, 34567), (97, 34582), (134, 34774), (149, 34855), (153, 34867), (156, 34876), (164, 34909), (166, 34924), (172, 34951), (178, 35005), (180, 35020), (184, 35035), (186, 35044), (192, 35074), (196, 35092), (197, 35098), (213, 35149), (222, 35206), (227, 35242), (229, 35248), (240, 35338), (241, 35347), (245, 35395), (246, 35404),

Gene: Shweta\_46 Start: 32422, Stop: 33489, Start Num: 44

Candidate Starts for Shweta\_46:

(18, 32308), (Start: 44 @32422 has 118 MA's), (Start: 47 @32434 has 1 MA's), (62, 32500), (63, 32503), (65, 32509), (72, 32533), (75, 32554), (76, 32560), (79, 32572), (80, 32575), (82, 32584), (93, 32626), (97, 32641), (134, 32833), (149, 32914), (153, 32926), (156, 32935), (164, 32968), (166, 32983), (172, 33010), (178, 33064), (180, 33079), (184, 33094), (186, 33103), (192, 33133), (196, 33151), (197, 33157), (213, 33208), (222, 33265), (229, 33307), (241, 33406), (245, 33454), (247, 33478),

Gene: Sicarius2\_36 Start: 29347, Stop: 30198, Start Num: 44

Candidate Starts for Sicarius2\_36:

(Start: 44 @29347 has 118 MA's), (66, 29440), (70, 29455), (72, 29461), (77, 29491), (82, 29512), (97, 29569), (121, 29674), (132, 29728), (144, 29791), (164, 29869), (172, 29911), (176, 29950), (178, 29968), (181, 29986), (186, 30007), (189, 30025), (196, 30055),

Gene: Silvafighter\_49 Start: 33451, Stop: 34512, Start Num: 44

Candidate Starts for Silvafighter\_49:

(Start: 44 @33451 has 118 MA's), (Start: 47 @33463 has 1 MA's), (62, 33529), (63, 33532), (65, 33538), (72, 33562), (75, 33583), (76, 33589), (79, 33601), (80, 33604), (82, 33613), (93, 33655), (97, 33670), (113, 33757), (134, 33862), (136, 33871), (144, 33916), (149, 33943), (153, 33955), (160, 33985), (164, 33997), (166, 34012), (172, 34039), (175, 34060), (178, 34093), (180, 34108), (181, 34111), (184, 34123), (186, 34132), (196, 34180), (197, 34186), (213, 34237), (218, 34261), (222, 34294), (223, 34297), (227, 34327), (229, 34333), (237, 34405), (240, 34423), (241, 34432), (245,

34480), (246, 34489),

Gene: Silvy\_46 Start: 32126, Stop: 33115, Start Num: 50

Candidate Starts for Silvy\_46:

(4, 31805), (17, 31973), (28, 32036), (Start: 50 @32126 has 57 MA's), (Start: 55 @32141 has 1 MA's), (65, 32189), (76, 32240), (99, 32336), (108, 32375), (138, 32510), (162, 32621), (164, 32624), (170, 32663), (176, 32687), (178, 32705), (187, 32750), (194, 32780), (196, 32792), (229, 32936), (241, 33035), (245, 33083),

Gene: Sitar\_51 Start: 44231, Stop: 45241, Start Num: 44

Candidate Starts for Sitar\_51:

(2, 43880), (10, 43988), (15, 44090), (Start: 30 @44177 has 1 MA's), (Start: 44 @44231 has 118 MA's), (54, 44267), (65, 44318), (67, 44324), (72, 44342), (77, 44372), (93, 44435), (97, 44450), (113, 44531), (126, 44594), (156, 44741), (164, 44774), (166, 44789), (178, 44858), (180, 44873), (193, 44930), (196, 44945), (237, 45134), (245, 45206),

Gene: SkinnyPete\_45 Start: 31602, Stop: 32585, Start Num: 50

Candidate Starts for SkinnyPete\_45:

(Start: 50 @31602 has 57 MA's), (65, 31668), (69, 31680), (76, 31719), (91, 31761), (108, 31854), (138, 31989), (161, 32097), (162, 32100), (164, 32103), (170, 32142), (176, 32166), (178, 32184), (183, 32211), (186, 32223), (194, 32259), (196, 32271), (213, 32328), (229, 32403), (241, 32505), (245, 32553),

Gene: Smoothie\_92 Start: 56648, Stop: 57373, Start Num: 49

Candidate Starts for Smoothie\_92:

(5, 56348), (7, 56375), (8, 56378), (9, 56381), (25, 56543), (Start: 49 @56648 has 16 MA's), (74, 56756), (78, 56774), (82, 56789), (83, 56792), (94, 56843), (105, 56906), (119, 56933), (125, 56966), (132, 57005), (139, 57044), (146, 57074), (149, 57101), (161, 57146), (178, 57227), (182, 57251), (193, 57296), (199, 57326),

Gene: Smurph\_48 Start: 33478, Stop: 34539, Start Num: 44

Candidate Starts for Smurph\_48:

(Start: 44 @33478 has 118 MA's), (Start: 47 @33490 has 1 MA's), (62, 33556), (63, 33559), (65, 33565), (72, 33589), (75, 33610), (76, 33616), (79, 33628), (80, 33631), (82, 33640), (93, 33682), (97, 33697), (113, 33784), (134, 33889), (136, 33898), (144, 33943), (149, 33970), (153, 33982), (160, 34012), (164, 34024), (166, 34039), (172, 34066), (175, 34087), (178, 34120), (180, 34135), (181, 34138), (184, 34150), (186, 34159), (196, 34207), (197, 34213), (213, 34264), (218, 34288), (222, 34321), (223, 34324), (227, 34354), (229, 34360), (237, 34432), (240, 34450), (241, 34459), (245, 34507), (246, 34516),

Gene: Snekmaggedon\_46 Start: 32655, Stop: 33719, Start Num: 44

Candidate Starts for Snekmaggedon\_46:

(18, 32541), (Start: 44 @32655 has 118 MA's), (Start: 47 @32667 has 1 MA's), (62, 32733), (63, 32736), (65, 32742), (72, 32766), (75, 32787), (76, 32793), (79, 32805), (80, 32808), (82, 32817), (93, 32859), (97, 32874), (134, 33066), (149, 33147), (153, 33159), (156, 33168), (164, 33201), (166, 33216), (172, 33243), (178, 33297), (180, 33312), (184, 33327), (186, 33336), (192, 33366), (196, 33384), (197, 33390), (213, 33441), (222, 33498), (227, 33534), (229, 33540), (240, 33630), (241, 33639), (245, 33687), (246, 33696),

Gene: Sonah\_47 Start: 32529, Stop: 33503, Start Num: 50

Candidate Starts for Sonah\_47:

(Start: 50 @32529 has 57 MA's), (Start: 55 @32547 has 1 MA's), (65, 32595), (76, 32646), (82, 32670), (108, 32781), (138, 32916), (162, 33027), (164, 33030), (170, 33069), (176, 33093), (178, 33111),



(187, 33156), (194, 33186), (196, 33198), (213, 33255), (229, 33324), (241, 33423), (245, 33471),

Gene: Sonny\_35 Start: 29745, Stop: 30608, Start Num: 44

Candidate Starts for Sonny\_35:

(Start: 44 @29745 has 118 MA's), (65, 29835), (66, 29838), (72, 29859), (82, 29910), (97, 29967), (121, 30072), (140, 30162), (142, 30174), (144, 30189), (164, 30267), (168, 30294), (172, 30309), (176, 30351), (178, 30369), (181, 30387), (186, 30408), (189, 30426), (204, 30495), (213, 30513), (226, 30585),

Gene: SpeedDemon\_950 Start: 64954, Stop: 64124, Start Num: 39

Candidate Starts for SpeedDemon\_950:

(Start: 39 @64954 has 5 MA's), (72, 64831), (78, 64795), (94, 64726), (121, 64618), (149, 64453), (155, 64435), (178, 64327), (190, 64267), (211, 64183),

Gene: SpongeBob\_46 Start: 32655, Stop: 33719, Start Num: 44

Candidate Starts for SpongeBob\_46:

(18, 32541), (Start: 44 @32655 has 118 MA's), (Start: 47 @32667 has 1 MA's), (62, 32733), (63, 32736), (65, 32742), (72, 32766), (75, 32787), (76, 32793), (79, 32805), (80, 32808), (82, 32817), (93, 32859), (97, 32874), (134, 33066), (149, 33147), (153, 33159), (156, 33168), (164, 33201), (166, 33216), (172, 33243), (178, 33297), (180, 33312), (184, 33327), (186, 33336), (192, 33366), (196, 33384), (197, 33390), (213, 33441), (222, 33498), (227, 33534), (229, 33540), (240, 33630), (241, 33639), (245, 33687), (246, 33696),

Gene: StevieBAY\_35 Start: 29827, Stop: 30672, Start Num: 44

Candidate Starts for StevieBAY\_35:

(Start: 44 @29827 has 118 MA's), (65, 29920), (66, 29923), (72, 29944), (77, 29974), (97, 30052), (106, 30109), (121, 30157), (131, 30208), (132, 30211), (134, 30226), (141, 30256), (144, 30274), (147, 30292), (164, 30352), (172, 30394), (176, 30433), (178, 30451), (181, 30469), (186, 30490), (189, 30508), (204, 30577), (210, 30589), (213, 30595),

Gene: StevieRay\_46 Start: 32502, Stop: 33476, Start Num: 50

Candidate Starts for StevieRay\_46:

(Start: 50 @32502 has 57 MA's), (Start: 55 @32520 has 1 MA's), (65, 32568), (76, 32619), (80, 32634), (82, 32643), (108, 32754), (138, 32889), (162, 33000), (164, 33003), (170, 33042), (176, 33066), (178, 33084), (187, 33129), (194, 33159), (196, 33171), (213, 33228), (229, 33297), (241, 33396), (245, 33444),

Gene: StorminNorm\_49 Start: 42171, Stop: 43193, Start Num: 44

Candidate Starts for StorminNorm\_49:

(Start: 44 @42171 has 118 MA's), (54, 42207), (65, 42261), (72, 42285), (77, 42315), (85, 42345), (93, 42378), (97, 42393), (113, 42474), (124, 42522), (126, 42537), (127, 42540), (156, 42684), (164, 42717), (166, 42732), (178, 42801), (180, 42816), (193, 42873), (196, 42888),

Gene: StressBall\_46 Start: 32800, Stop: 33774, Start Num: 50

Candidate Starts for StressBall\_46:

(Start: 50 @32800 has 57 MA's), (Start: 55 @32818 has 1 MA's), (65, 32866), (76, 32917), (80, 32932), (82, 32941), (108, 33052), (138, 33187), (162, 33298), (164, 33301), (170, 33340), (176, 33364), (178, 33382), (187, 33427), (194, 33457), (196, 33469), (213, 33526), (229, 33595), (241, 33694), (245, 33742),

Gene: StuartMinion\_36 Start: 23080, Stop: 23877, Start Num: 40

Candidate Starts for StuartMinion\_36:

(Start: 40 @23080 has 25 MA's), (65, 23176), (77, 23230), (103, 23347), (131, 23494), (144, 23566), (153, 23611), (178, 23731), (196, 23818),

Gene: Stultus\_49 Start: 42729, Stop: 43727, Start Num: 43

Candidate Starts for Stultus\_49:

(Start: 43 @42729 has 7 MA's), (54, 42765), (65, 42816), (67, 42822), (72, 42840), (77, 42870), (93, 42933), (97, 42948), (113, 43029), (118, 43044), (122, 43068), (126, 43092), (156, 43239), (164, 43272), (166, 43287), (178, 43356), (180, 43371), (193, 43428), (196, 43443), (237, 43620), (245, 43692),

Gene: TaeYoung\_35 Start: 29743, Stop: 30591, Start Num: 44

Candidate Starts for TaeYoung\_35:

(Start: 44 @29743 has 118 MA's), (65, 29833), (66, 29836), (72, 29857), (76, 29884), (77, 29887), (97, 29965), (106, 30022), (121, 30070), (131, 30121), (132, 30124), (144, 30187), (147, 30205), (164, 30265), (172, 30307), (176, 30346), (178, 30364), (181, 30382), (186, 30403), (189, 30421), (196, 30451), (210, 30502), (226, 30568),

Gene: Tangent\_52 Start: 42958, Stop: 43968, Start Num: 38

Candidate Starts for Tangent\_52:

(Start: 38 @42958 has 8 MA's), (Start: 43 @42967 has 7 MA's), (54, 43003), (65, 43057), (67, 43063), (72, 43081), (77, 43111), (93, 43174), (97, 43189), (113, 43270), (126, 43333), (156, 43480), (164, 43513), (166, 43528), (178, 43597), (180, 43612), (193, 43669), (196, 43684), (236, 43849), (245, 43933),

Gene: Tangerine\_49 Start: 41949, Stop: 42971, Start Num: 44

Candidate Starts for Tangerine\_49:

(Start: 44 @41949 has 118 MA's), (65, 42039), (72, 42063), (77, 42093), (85, 42123), (93, 42156), (97, 42171), (124, 42300), (126, 42315), (127, 42318), (156, 42462), (164, 42495), (166, 42510), (178, 42579), (179, 42585), (180, 42594), (193, 42651), (196, 42666),

Gene: Tapioca\_50 Start: 33444, Stop: 34505, Start Num: 44

Candidate Starts for Tapioca\_50:

(Start: 44 @33444 has 118 MA's), (Start: 47 @33456 has 1 MA's), (62, 33522), (63, 33525), (65, 33531), (72, 33555), (75, 33576), (76, 33582), (79, 33594), (80, 33597), (82, 33606), (93, 33648), (97, 33663), (113, 33750), (134, 33855), (136, 33864), (144, 33909), (149, 33936), (153, 33948), (160, 33978), (164, 33990), (166, 34005), (172, 34032), (175, 34053), (178, 34086), (180, 34101), (181, 34104), (184, 34116), (186, 34125), (196, 34173), (197, 34179), (213, 34230), (218, 34254), (222, 34287), (223, 34290), (227, 34320), (229, 34326), (237, 34398), (240, 34416), (241, 34425), (245, 34473), (246, 34482),

Gene: Tardus\_53 Start: 43285, Stop: 44328, Start Num: 44

Candidate Starts for Tardus\_53:

(Start: 44 @43285 has 118 MA's), (65, 43375), (72, 43399), (73, 43411), (77, 43429), (97, 43507), (122, 43609), (142, 43714), (156, 43780), (166, 43828), (178, 43900), (180, 43915), (185, 43936), (189, 43957), (190, 43960), (218, 44065), (221, 44098), (224, 44110), (242, 44260), (245, 44296),

Gene: TaylorSipht\_39 Start: 26156, Stop: 26953, Start Num: 37

Candidate Starts for TaylorSipht\_39:

(Start: 37 @26156 has 11 MA's), (61, 26246), (62, 26249), (65, 26258), (77, 26312), (103, 26429), (144, 26642), (153, 26687), (178, 26807), (183, 26834), (193, 26879), (194, 26882), (198, 26906),

Gene: Techage\_46 Start: 32569, Stop: 33561, Start Num: 50

Candidate Starts for Techage\_46:

(4, 32248), (17, 32416), (28, 32479), (Start: 50 @32569 has 57 MA's), (Start: 55 @32584 has 1 MA's), (65, 32632), (76, 32683), (99, 32779), (108, 32818), (138, 32953), (162, 33064), (164, 33067), (170, 33106), (176, 33130), (178, 33148), (187, 33193), (194, 33223), (196, 33235), (229, 33379), (241, 33478), (245, 33526), (247, 33550),

Gene: Thespis\_46 Start: 32536, Stop: 33510, Start Num: 50

Candidate Starts for Thespis\_46:

(Start: 50 @32536 has 57 MA's), (Start: 55 @32554 has 1 MA's), (65, 32602), (76, 32653), (80, 32668), (82, 32677), (108, 32788), (138, 32923), (162, 33034), (164, 33037), (170, 33076), (176, 33100), (178, 33118), (187, 33163), (194, 33193), (196, 33205), (213, 33262), (229, 33331), (241, 33430), (245, 33478),

Gene: Thing3\_50 Start: 42629, Stop: 43627, Start Num: 44

Candidate Starts for Thing3\_50:

(10, 42386), (15, 42488), (Start: 30 @42575 has 1 MA's), (Start: 44 @42629 has 118 MA's), (54, 42665), (65, 42716), (67, 42722), (72, 42740), (77, 42770), (93, 42833), (97, 42848), (113, 42929), (122, 42968), (126, 42992), (156, 43139), (164, 43172), (166, 43187), (178, 43256), (180, 43271), (193, 43328), (196, 43343), (237, 43520), (245, 43592),

Gene: ThulaThula\_53 Start: 37120, Stop: 38187, Start Num: 44

Candidate Starts for ThulaThula\_53:

(18, 37006), (Start: 44 @37120 has 118 MA's), (Start: 47 @37132 has 1 MA's), (65, 37207), (72, 37231), (75, 37252), (80, 37273), (82, 37282), (93, 37324), (97, 37339), (102, 37372), (134, 37531), (136, 37540), (153, 37624), (164, 37666), (166, 37681), (172, 37708), (175, 37729), (178, 37762), (180, 37777), (184, 37792), (186, 37801), (192, 37831), (196, 37849), (206, 37888), (213, 37906), (228, 38002), (229, 38008), (241, 38107),

Gene: Tiamoceli\_48 Start: 40223, Stop: 41281, Start Num: 44

Candidate Starts for Tiamoceli\_48:

(35, 40193), (Start: 44 @40223 has 118 MA's), (65, 40310), (72, 40334), (77, 40364), (93, 40427), (97, 40442), (102, 40475), (126, 40586), (132, 40613), (142, 40667), (156, 40733), (160, 40754), (164, 40766), (166, 40781), (178, 40865), (181, 40883), (185, 40901), (189, 40922), (196, 40952), (221, 41063), (236, 41168), (238, 41189), (244, 41246), (245, 41252),

Gene: Timinator\_35 Start: 29826, Stop: 30671, Start Num: 44

Candidate Starts for Timinator\_35:

(Start: 44 @29826 has 118 MA's), (65, 29919), (66, 29922), (72, 29943), (77, 29973), (97, 30051), (106, 30108), (121, 30156), (131, 30207), (132, 30210), (134, 30225), (144, 30273), (147, 30291), (164, 30351), (172, 30393), (176, 30432), (178, 30450), (181, 30468), (186, 30489), (189, 30507), (196, 30537), (204, 30576), (210, 30588), (213, 30594),

Gene: Toad24\_41 Start: 27438, Stop: 28244, Start Num: 37

Candidate Starts for Toad24\_41:

(Start: 37 @27438 has 11 MA's), (62, 27534), (65, 27543), (72, 27567), (73, 27579), (77, 27597), (136, 27891), (150, 27972), (157, 27990), (178, 28098), (183, 28125), (202, 28212),

Gene: Toniann\_91 Start: 55976, Stop: 56701, Start Num: 49

Candidate Starts for Toniann\_91:

(5, 55676), (7, 55703), (8, 55706), (9, 55709), (16, 55817), (Start: 49 @55976 has 16 MA's), (74, 56084), (78, 56102), (82, 56117), (83, 56120), (94, 56171), (105, 56234), (119, 56261), (125, 56294), (132, 56333), (139, 56372), (146, 56402), (149, 56429), (161, 56474), (178, 56555), (182, 56579), (193, 56624), (199, 56654),

Gene: Towmatter\_86 Start: 58781, Stop: 57948, Start Num: 39

Candidate Starts for Towmatter\_86:

(Start: 39 @58781 has 5 MA's), (61, 58691), (78, 58619), (94, 58550), (121, 58442), (133, 58385), (149, 58277), (155, 58259), (178, 58151), (211, 58010), (219, 57956),

Gene: TripleJ\_55 Start: 33927, Stop: 34802, Start Num: 44

Candidate Starts for TripleJ\_55:

(Start: 44 @33927 has 118 MA's), (65, 34017), (73, 34053), (81, 34089), (92, 34128), (97, 34149), (108, 34203), (127, 34278), (146, 34368), (150, 34395), (153, 34404), (154, 34407), (157, 34416), (164, 34443), (165, 34449), (176, 34506), (178, 34524), (185, 34560), (186, 34563), (202, 34632), (224, 34716),

Gene: Twonlo\_45 Start: 38853, Stop: 39911, Start Num: 44

Candidate Starts for Twonlo\_45:

(35, 38823), (Start: 44 @38853 has 118 MA's), (65, 38940), (72, 38964), (77, 38994), (93, 39057), (97, 39072), (102, 39105), (126, 39216), (132, 39243), (142, 39297), (156, 39363), (160, 39384), (164, 39396), (166, 39411), (178, 39495), (181, 39513), (185, 39531), (189, 39552), (196, 39582), (221, 39693), (236, 39798), (238, 39819), (244, 39876), (245, 39882),

Gene: Tycho\_49 Start: 42039, Stop: 43061, Start Num: 44

Candidate Starts for Tycho\_49:

(Start: 44 @42039 has 118 MA's), (54, 42075), (65, 42129), (72, 42153), (77, 42183), (85, 42213), (93, 42246), (97, 42261), (113, 42342), (124, 42390), (126, 42405), (127, 42408), (156, 42552), (164, 42585), (166, 42600), (178, 42669), (180, 42684), (193, 42741), (196, 42756),

Gene: ValentiniPuff\_98 Start: 56073, Stop: 56969, Start Num: 45

Candidate Starts for ValentiniPuff\_98:

(Start: 45 @56073 has 1 MA's), (61, 56163), (96, 56310), (99, 56328), (148, 56592), (152, 56607), (159, 56637), (174, 56721), (178, 56757), (181, 56775), (203, 56877),

Gene: VanLee\_37 Start: 30355, Stop: 31278, Start Num: 41

Candidate Starts for VanLee\_37:

(Start: 41 @30355 has 5 MA's), (Start: 45 @30361 has 1 MA's), (56, 30400), (63, 30439), (77, 30499), (88, 30541), (95, 30580), (97, 30586), (101, 30610), (124, 30757), (132, 30799), (138, 30835), (147, 30889), (156, 30916), (163, 30946), (164, 30949), (178, 31048), (183, 31075), (186, 31087), (207, 31186), (215, 31210),

Gene: Venti\_47 Start: 32543, Stop: 33535, Start Num: 50

Candidate Starts for Venti\_47:

(4, 32222), (17, 32390), (28, 32453), (Start: 50 @32543 has 57 MA's), (Start: 55 @32558 has 1 MA's), (65, 32606), (76, 32657), (99, 32753), (108, 32792), (138, 32927), (162, 33038), (164, 33041), (170, 33080), (176, 33104), (178, 33122), (187, 33167), (194, 33197), (196, 33209), (229, 33353), (241, 33452), (245, 33500), (247, 33524),

Gene: Verity\_51 Start: 44353, Stop: 45396, Start Num: 44

Candidate Starts for Verity\_51:

(Start: 44 @44353 has 118 MA's), (65, 44443), (72, 44467), (73, 44479), (97, 44575), (142, 44782), (156, 44848), (166, 44896), (178, 44968), (180, 44983), (185, 45004), (189, 45025), (190, 45028), (196, 45055), (218, 45133), (221, 45166), (224, 45178), (238, 45301), (242, 45328), (245, 45364),

Gene: ViaConlectus\_51 Start: 42237, Stop: 43280, Start Num: 44

Candidate Starts for ViaConlectus\_51:

(Start: 44 @42237 has 118 MA's), (65, 42330), (72, 42354), (73, 42366), (77, 42384), (97, 42462), (102, 42495), (142, 42669), (156, 42735), (166, 42783), (178, 42855), (180, 42870), (185, 42891), (189, 42912), (190, 42915), (218, 43020), (221, 43053), (224, 43065), (242, 43212), (245, 43248),

Gene: Vidya\_46 Start: 32576, Stop: 33568, Start Num: 50

Candidate Starts for Vidya\_46:

(4, 32255), (17, 32423), (28, 32486), (Start: 50 @32576 has 57 MA's), (Start: 55 @32591 has 1 MA's), (65, 32639), (76, 32690), (99, 32786), (108, 32825), (138, 32960), (162, 33071), (164, 33074), (170, 33113), (176, 33137), (178, 33155), (187, 33200), (194, 33230), (196, 33242), (229, 33386), (241, 33485), (245, 33533), (247, 33557),

Gene: Vivi2\_55 Start: 44459, Stop: 45457, Start Num: 44

Candidate Starts for Vivi2\_55:

(10, 44216), (15, 44318), (Start: 30 @44405 has 1 MA's), (Start: 44 @44459 has 118 MA's), (54, 44495), (65, 44546), (67, 44552), (72, 44570), (77, 44600), (93, 44663), (97, 44678), (106, 44729), (124, 44807), (156, 44969), (164, 45002), (166, 45017), (178, 45086), (180, 45101), (193, 45158), (196, 45173), (237, 45350), (245, 45422),

Gene: Vulpecula\_38 Start: 26463, Stop: 27269, Start Num: 37

Candidate Starts for Vulpecula\_38:

(Start: 37 @26463 has 11 MA's), (62, 26559), (65, 26568), (73, 26604), (77, 26622), (136, 26916), (143, 26952), (164, 27042), (178, 27123), (202, 27237),

Gene: Westrich\_47 Start: 27116, Stop: 27922, Start Num: 37

Candidate Starts for Westrich\_47:

(Start: 37 @27116 has 11 MA's), (62, 27212), (65, 27221), (73, 27257), (77, 27275), (98, 27356), (136, 27569), (150, 27650), (157, 27668), (178, 27776), (202, 27890),

Gene: WilliamBoone\_90 Start: 54745, Stop: 55467, Start Num: 49

Candidate Starts for WilliamBoone\_90:

(9, 54469), (11, 54514), (27, 54655), (Start: 49 @54745 has 16 MA's), (74, 54853), (78, 54871), (82, 54886), (83, 54889), (94, 54940), (119, 55030), (125, 55063), (139, 55141), (146, 55171), (173, 55300), (178, 55324), (181, 55342), (193, 55393), (199, 55423), (205, 55450),

Gene: Willsammy\_45 Start: 32283, Stop: 33257, Start Num: 50

Candidate Starts for Willsammy\_45:

(Start: 50 @32283 has 57 MA's), (Start: 55 @32301 has 1 MA's), (65, 32349), (76, 32400), (80, 32415), (82, 32424), (108, 32535), (138, 32670), (162, 32781), (164, 32784), (170, 32823), (176, 32847), (178, 32865), (187, 32910), (194, 32940), (196, 32952), (213, 33009), (229, 33078), (241, 33177), (245, 33225),

Gene: Wyborn\_36 Start: 29985, Stop: 30836, Start Num: 44

Candidate Starts for Wyborn\_36:

(Start: 44 @29985 has 118 MA's), (66, 30078), (70, 30093), (72, 30099), (77, 30129), (82, 30150), (97, 30207), (121, 30312), (132, 30366), (144, 30429), (164, 30507), (172, 30549), (178, 30606), (181, 30624), (186, 30645), (189, 30663), (196, 30693), (198, 30705),

Gene: Xavia\_54 Start: 39834, Stop: 40823, Start Num: 52

Candidate Starts for Xavia\_54:

(19, 39696), (22, 39705), (32, 39759), (34, 39768), (Start: 52 @39834 has 1 MA's), (60, 39873), (65, 39894), (71, 39915), (73, 39930), (76, 39945), (81, 39966), (91, 39987), (94, 40014), (97, 40026), (100, 40047), (104, 40062), (108, 40083), (115, 40098), (127, 40158), (138, 40218), (150, 40284), (162, 40329), (164, 40332), (165, 40338), (166, 40347), (178, 40413), (192, 40482), (196, 40500), (203,

40530), (210, 40545), (220, 40590), (225, 40614), (229, 40644), (232, 40662), (241, 40743), (246, 40800),

Gene: Xeno\_48 Start: 31878, Stop: 32852, Start Num: 50

Candidate Starts for Xeno\_48:

(Start: 50 @31878 has 57 MA's), (Start: 55 @31896 has 1 MA's), (65, 31944), (76, 31995), (80, 32010), (82, 32019), (108, 32130), (138, 32265), (162, 32376), (164, 32379), (170, 32418), (176, 32442), (178, 32460), (187, 32505), (194, 32535), (196, 32547), (213, 32604), (229, 32673), (241, 32772), (245, 32820),

Gene: Xerxes\_48 Start: 33475, Stop: 34536, Start Num: 44

Candidate Starts for Xerxes\_48:

(Start: 44 @33475 has 118 MA's), (Start: 47 @33487 has 1 MA's), (62, 33553), (63, 33556), (65, 33562), (72, 33586), (75, 33607), (76, 33613), (79, 33625), (80, 33628), (82, 33637), (93, 33679), (97, 33694), (113, 33781), (134, 33886), (136, 33895), (144, 33940), (149, 33967), (153, 33979), (160, 34009), (164, 34021), (166, 34036), (172, 34063), (175, 34084), (178, 34117), (180, 34132), (181, 34135), (184, 34147), (186, 34156), (196, 34204), (197, 34210), (213, 34261), (218, 34285), (222, 34318), (223, 34321), (227, 34351), (229, 34357), (237, 34429), (240, 34447), (241, 34456), (245, 34504), (246, 34513),

Gene: Xula\_43 Start: 32303, Stop: 33298, Start Num: 50

Candidate Starts for Xula\_43:

(21, 32168), (Start: 50 @32303 has 57 MA's), (Start: 55 @32318 has 1 MA's), (65, 32366), (76, 32417), (82, 32441), (108, 32552), (138, 32687), (162, 32798), (164, 32801), (170, 32840), (176, 32864), (178, 32882), (187, 32927), (194, 32957), (196, 32969), (213, 33026), (229, 33116), (241, 33215), (245, 33263), (247, 33287),

Gene: YorkOnyx\_51 Start: 42735, Stop: 43757, Start Num: 44

Candidate Starts for YorkOnyx\_51:

(10, 42492), (15, 42594), (Start: 30 @42681 has 1 MA's), (Start: 44 @42735 has 118 MA's), (54, 42771), (65, 42825), (72, 42849), (77, 42879), (85, 42909), (93, 42942), (97, 42957), (113, 43038), (124, 43086), (126, 43101), (127, 43104), (156, 43248), (164, 43281), (166, 43296), (178, 43365), (180, 43380), (193, 43437),

Gene: Yvonnetastic\_106 Start: 61147, Stop: 61839, Start Num: 49

Candidate Starts for Yvonnetastic\_106:

(Start: 49 @61147 has 16 MA's), (61, 61201), (71, 61234), (78, 61273), (88, 61309), (89, 61318), (94, 61342), (96, 61351), (97, 61354), (121, 61450), (132, 61504), (143, 61561), (147, 61597), (155, 61621), (161, 61648), (163, 61654), (178, 61729), (186, 61768), (188, 61783), (190, 61789),

Gene: Zartrosa\_35 Start: 29654, Stop: 30517, Start Num: 44

Candidate Starts for Zartrosa\_35:

(Start: 44 @29654 has 118 MA's), (65, 29744), (66, 29747), (72, 29768), (82, 29819), (97, 29876), (121, 29981), (140, 30071), (142, 30083), (144, 30098), (164, 30176), (168, 30203), (172, 30218), (176, 30260), (178, 30278), (181, 30296), (186, 30317), (189, 30335), (204, 30404), (213, 30422), (226, 30494),

Gene: Zhuangyuan\_45 Start: 26808, Stop: 27620, Start Num: 37

Candidate Starts for Zhuangyuan\_45:

(Start: 37 @26808 has 11 MA's), (Start: 50 @26853 has 57 MA's), (57, 26871), (65, 26916), (77, 26970), (103, 27087), (109, 27117), (127, 27216), (131, 27237), (144, 27309), (151, 27348), (178, 27474), (196, 27561),

Gene: Zilizebeth\_47 Start: 32575, Stop: 33567, Start Num: 50

Candidate Starts for Zilizebeth\_47:

(4, 32254), (17, 32422), (28, 32485), (Start: 50 @32575 has 57 MA's), (Start: 55 @32590 has 1 MA's), (65, 32638), (76, 32689), (99, 32785), (108, 32824), (138, 32959), (162, 33070), (164, 33073), (170, 33112), (176, 33136), (178, 33154), (187, 33199), (194, 33229), (196, 33241), (229, 33385), (241, 33484), (245, 33532), (247, 33556),

Gene: Zipp\_52 Start: 44268, Stop: 45311, Start Num: 44

Candidate Starts for Zipp\_52:

(Start: 44 @44268 has 118 MA's), (65, 44358), (72, 44382), (73, 44394), (97, 44490), (142, 44697), (156, 44763), (166, 44811), (178, 44883), (180, 44898), (185, 44919), (189, 44940), (190, 44943), (196, 44970), (218, 45048), (221, 45081), (224, 45093), (238, 45216), (242, 45243), (245, 45279),

Gene: Zitch\_54 Start: 42394, Stop: 43437, Start Num: 44

Candidate Starts for Zitch\_54:

(Start: 44 @42394 has 118 MA's), (65, 42484), (72, 42508), (73, 42520), (77, 42538), (97, 42616), (102, 42649), (142, 42823), (156, 42889), (166, 42937), (178, 43009), (180, 43024), (185, 43045), (189, 43066), (190, 43069), (218, 43174), (221, 43207), (224, 43219), (242, 43369),