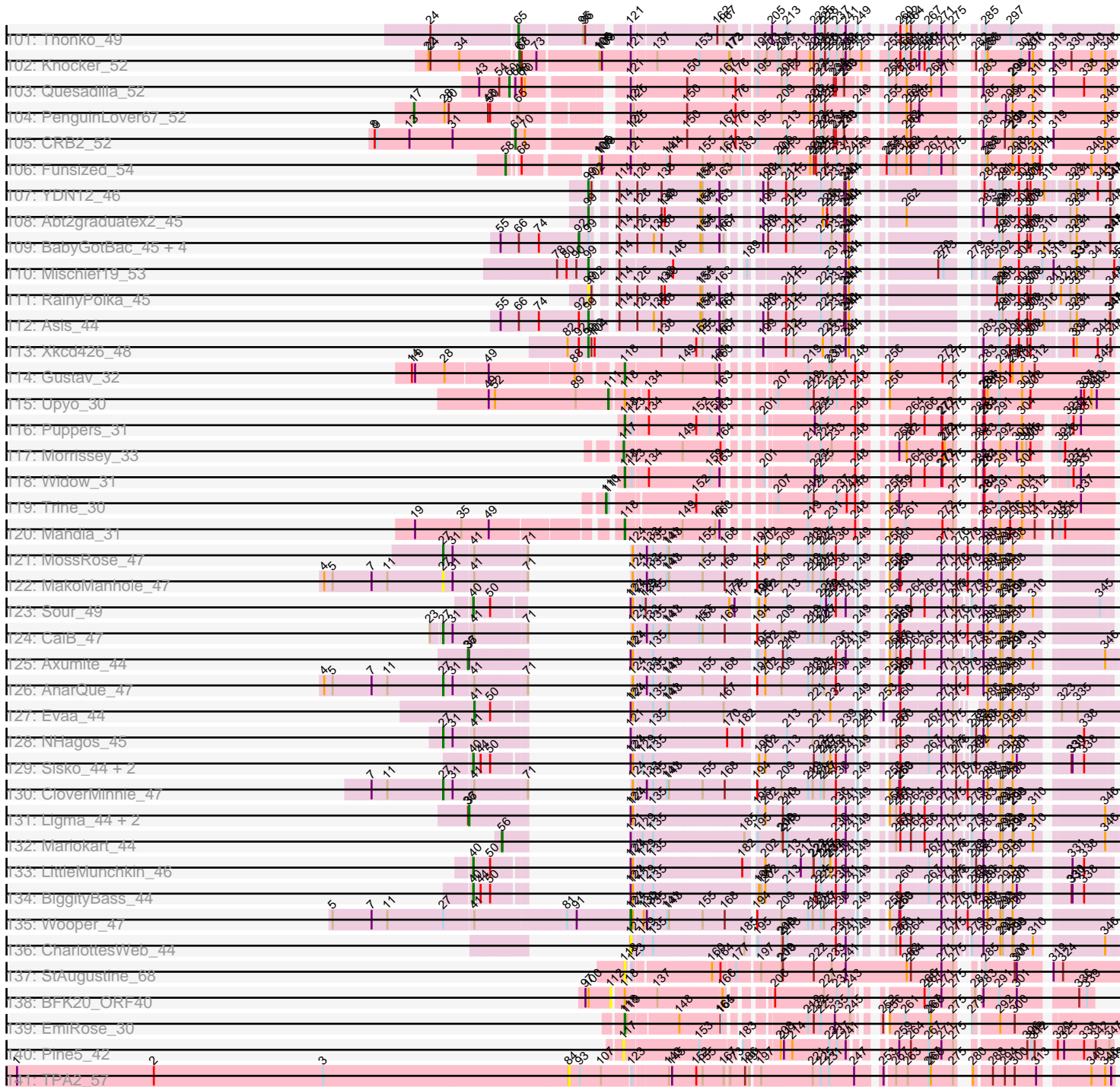




Pham 171110

51: Piperish_51	51	70	81	120	144	153	188	216	264	215	280
52: Daisy_49 + 1	51	70	81	120	144	153	188	216	264	215	280
53: Phayeta_50 + 1	51	70	81	120	144	153	188	216	264	215	280
54: Phaedrus_47	51	70	81	120	144	153	188	216	264	215	280
55: Rita1961_49 + 4	51	70	81	120	144	153	188	216	264	215	280
56: Heathcliff_49 + 6	51	70	81	120	144	153	188	216	264	215	280
57: GlenHope_50 + 2	51	70	81	120	144	153	188	216	264	215	280
58: Abinghost_49 + 2	51	70	81	120	144	153	188	216	264	215	280
59: Bernardo_50	51	70	81	120	144	153	188	216	264	215	280
60: Baloo_49 + 2	51	70	81	120	144	153	188	216	264	215	280
61: YinZ_49 + 1	70	81	120	144	153	188	216	264	215	280	340
62: Prince_47 + 4	70	81	120	144	153	188	216	264	215	280	340
63: Zemanar_47 + 1	70	81	120	144	153	188	216	264	215	280	340
64: JaguarWl_46	70	81	120	144	153	188	216	264	215	280	340
65: Apex_47	70	81	120	144	153	188	216	264	215	280	340
66: ChrisnMich_46	70	81	120	144	153	188	216	264	215	280	340
67: AlanGran_48	70	81	120	144	153	188	216	264	215	280	340
68: Hydro_46	70	81	120	144	153	188	216	264	215	280	340
69: JAMaL_46	70	81	120	144	153	188	216	264	215	280	340
70: Heath_45	70	81	120	144	153	188	216	264	215	280	340
71: Vincenzo_47	70	81	120	144	153	188	216	264	215	280	340
72: Nanao_45 + 2	70	81	120	144	153	188	216	264	215	280	340
73: BobbyK_47	70	81	120	144	153	188	216	264	215	280	340
74: Nigel_45	70	81	120	144	153	188	216	264	215	280	340
75: Stinger_45	70	81	120	144	153	188	216	264	215	280	340
76: Magpie_45 + 1	70	81	120	144	153	188	216	264	215	280	340
77: Waieliano_46	70	81	120	144	153	188	216	264	215	280	340
78: BrownCINA_48	70	81	120	144	153	188	216	264	215	280	340
79: RawrgerIhat_47	70	81	120	144	153	188	216	264	215	280	340
80: Frederick_46	70	81	120	144	153	188	216	264	215	280	340
81: Milthri_46	70	81	120	144	153	188	216	264	215	280	340
82: Cooper_47	70	81	120	144	153	188	216	264	215	280	340
83: StinkyVeggy_51	70	81	120	144	153	188	216	264	215	280	340
84: SirJeffery_50	70	81	120	144	153	188	216	264	215	280	340
85: Mysterious_51	70	81	120	144	153	188	216	264	215	280	340
86: Reprobate_50	70	81	120	144	153	188	216	264	215	280	340
87: Rich_49	70	81	120	144	153	188	216	264	215	280	340
88: Serendipitous_50	70	81	120	144	153	188	216	264	215	280	340
89: Phelemich_49	70	81	120	144	153	188	216	264	215	280	340
90: Nangang_50	70	81	120	144	153	188	216	264	215	280	340
91: EastView9101_51	70	81	120	144	153	188	216	264	215	280	340
92: Baee_50	70	81	120	144	153	188	216	264	215	280	340
93: DigitDog_50	70	81	120	144	153	188	216	264	215	280	340
94: Acadian_51	70	81	120	144	153	188	216	264	215	280	340
95: Suigenens_51 + 1	70	81	120	144	153	188	216	264	215	280	340
96: 39HC_044 + 1	70	81	120	144	153	188	216	264	215	280	340
97: Hosp_042	70	81	120	144	153	188	216	264	215	280	340
98: Jolie1_044	70	81	120	144	153	188	216	264	215	280	340
99: KayaCho_44	70	81	120	144	153	188	216	264	215	280	340
100: Saguaro_53	70	81	120	144	153	188	216	264	215	280	340

Pham 171110



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 171110 Report

This analysis was run 07/09/24 on database version 566.

Pham number 171110 has 459 members, 50 are drafts.

Phages represented in each track:

- Track 1 : Mikota\_51, Fozzie\_50, CamL\_51, Mosaic\_50, Altwerkus\_50, BlueHusk\_51, MRabcd\_50, ThreeOh3D2\_52, Windsor\_50, LeiMonet\_52, Daka\_52, ShiVal\_51, YouGoGlencoco\_51, Serendipity\_51, Kloppinator\_52, IsaacEli\_52, Fringe\_52, DirtJuice\_51, Toni\_50, Chorkpop\_51, Pipsqueak\_51, Virapocalypse\_51, Rimu\_53, Burr\_50, Morty\_52, Grand2040\_50, MrPhizzler\_50, Vaticameos\_47, Prickles\_51, JangoPhett\_51, Horchata\_51, True\_50, Solosis\_50, Timmi\_50, Riggan\_51, Mcshane\_50, Olive\_51, Swish\_52, BlackStallion\_52, Gareth\_50, Phipps\_51, Jillium\_50, Slatt\_51, Quisquiliae\_51, Selr12\_53, Kikipoo\_52, Robyn\_50, DaddyDaniels\_51, Lasso\_51, Tooj\_51, QueenBeane\_51, Mana\_50, Olak\_51, Dingo\_51, Roscoe\_52, JacAttac\_52, Puhltonio\_51, Longacauda\_50, Sigman\_52, Badfish\_52, LemonSlice\_51, Morgushi\_51, Bluephacebaby\_50, FriarPreacher\_50, EmpTee\_51, Podrick\_51, Cannibal\_51, Beaglebox\_50, Kwadwo\_50, Buckeye\_51, Sheila\_51, Samaymay\_51, Haleema\_50, Scrick\_51, LostAndPhound\_50, Katniss\_52, Dice\_53, Chaelin\_51, Spartan300\_51, Cher\_50, Scoot17C\_52, Held\_51, Lego3393\_50, Simielle\_50, Vaishali24\_50, Roliet\_51, Phamished\_52, Orfeu\_51, Nyala\_50, FluffyNinja\_52, Chah\_53, Megatron\_52, Banjo\_50, Vortex\_51, Tomlarah\_51
- Track 2 : HighStump\_51, Hartsy\_51, Piglet\_0051, Kahve\_50, Eugenia\_51, Mutante\_50, Placalicious\_50, Zaider\_52, Frankicide\_51, Surely\_51, Childish\_50, ABU\_52, Serpentine\_0051, Soile\_51, Nacho\_0052, Vista\_51, Waterdiva\_51, UncleHowie\_51, Mecca\_50, Kimbrough\_51, Craff\_52, Matalotodo\_51, Zelda\_51, Brilliant\_51, Charles1\_51, Usavi\_51, Omniscient\_51, Murdoc\_51, Squiggle\_51, FugateOSU\_50, Gwilliam\_52, OliverWalter\_51, PG1\_52
- Track 3 : Apizium\_51
- Track 4 : Jiminy\_50, JakeO\_50, Struggle\_50, Hocus\_50, JDog\_50
- Track 5 : KlimbOn\_51, Newman\_51, Inverness\_51
- Track 6 : Weher20\_51, ImtiyazSitla\_51, Dati\_51, Emiris\_52, Trypo\_52, CharlieGBrown\_50, Maskar\_51, Phergie\_51, BatteryCK\_50, Phleuron\_50, Etaye\_51, Melc17\_51, Magic8\_51, MichaelPhcott\_50, PhenghisKhan\_50, KingTut\_42, PhrankReynolds\_49, Inchworm\_52, Carthage\_49, Mag7\_50, Ashraf\_51, Oline\_50, Gophee\_51, Kailash\_51, MelsMeow\_51, Lumine\_50, Durga\_52, Kwksand96\_50, Cobra\_51
- Track 7 : Suffolk\_51, Anderson\_51, Oosterbaan\_51, Lulumae\_50, Chunky\_51
- Track 8 : Skippy\_51, Phunky\_51, Roy17\_51, HSavage\_51, Cornobble\_50, Haimas\_51, Dione\_50, Orwigg\_52, Lulwa\_51, CheetO\_51, Hamish\_51, DoesntMatter\_50, Bishoperium\_50, Nicole21\_51, Freya\_50, OSmaximus\_52, Phareon\_51, Hertubise\_51, PhrodoBaggins\_51, LasagnaCat\_52, Thora\_51,

LuckyMarjie\_50, Eremos\_51, Telesworld\_50, RedMaple\_51, Iridoclysis\_51, Giraffe\_51, Numberten\_51, Harvey\_51, Plmatters\_51

- Track 9 : Coletti\_50, Jiraiya\_53, Keitherie\_51, PinheadLarry\_51, Thunderbird\_51, Chute\_50
- Track 10 : Sophia\_50, Gyarad\_0051, Hetaeria\_51, Andre\_54, ProfessorX\_51, UAch1\_51, Fang\_52, Pops\_51, DonSanchon\_50
- Track 11 : Basato\_52
- Track 12 : Crownjwl\_51
- Track 13 : Soto\_51
- Track 14 : Boehler\_51
- Track 15 : Cosmolli16\_50, AbsoluteMadLad\_50, AltPhacts\_51, Mesh1\_51
- Track 16 : Labeouficaum\_50, Derpp\_50, Squid\_51, MitKao\_51, Zonia\_51, Wallhey\_50, Potter\_50, TyrionL\_50, TomBombadil\_51, GeneCoco\_51, SassyCat97\_50, Xavier\_50, Pinkman\_50
- Track 17 : TallGrassMM\_51, Maru\_50, Daffy\_51, MiniBoss\_51, DelRivs\_50, Ricotta\_51, Legolas\_51, Adriana\_52, Pacifista\_53, Orion\_52, Colbert\_51, KingVeVeVe\_51, Megamind20\_51, PhatCats2014\_52, Yoshand\_52
- Track 18 : Pherdinand\_52
- Track 19 : Doddsville\_51
- Track 20 : Virgeve\_50, Schueller\_51, Veritas\_50
- Track 21 : Duggie\_50
- Track 22 : Valjean\_51, Mulan\_51, HenryJackson\_50, PhatLouie\_51, LeeLot\_51, Swiphy\_53
- Track 23 : Antonia\_50, Vivaldi\_52
- Track 24 : DuchessDung\_50
- Track 25 : Aelin\_50
- Track 26 : SDcharge11\_51
- Track 27 : Manad\_51, Lopsy\_50
- Track 28 : KLucky39\_51
- Track 29 : Schadenfreude\_50
- Track 30 : CampRoach\_52
- Track 31 : Imvubu\_43
- Track 32 : Indlovu\_48
- Track 33 : LilMcDreamy\_48
- Track 34 : Zenteno07\_55
- Track 35 : Hashim76\_54
- Track 36 : BirdsNest\_53
- Track 37 : MasterPo\_50, Bananafish\_50, Phantasmagoria\_50, Faze9\_49, Eaglehorse\_50, Boyle\_50, Ares\_50
- Track 38 : FrenchFry\_50, Lars\_50, Glass\_50, LizLemon\_50
- Track 39 : Calamitous\_50
- Track 40 : Holeinone\_50
- Track 41 : Blocker23\_50, Lephleur\_50, Rhinoforte\_50, Kheth\_50
- Track 42 : Coffee\_50, Arbiter\_49, Tinciduntolum\_51, Kaleb\_50, Brownie5\_50, West99\_50, Opia\_50, Allegro\_50, Hedgerow\_50, Tres\_50, Rosebush\_49
- Track 43 : ItsyBitsy1\_50
- Track 44 : TA17A\_50, Sabella\_49
- Track 45 : Qyrzula\_47
- Track 46 : Godines\_50
- Track 47 : Laurie\_49
- Track 48 : Yahalom\_49, LestyG\_49, RomaT\_49, Kronus\_48
- Track 49 : Nozo\_49, Philly\_48, Compostia\_50, Corofin\_49, Morty007\_49, Chandler\_49, OrangeOswald\_49, SynergyX\_49, Kamiyu\_49, Jackstina\_46,



Akoma\_49, Tydolla\_49

- Track 50 : Gadget\_50
- Track 51 : Pipefish\_51
- Track 52 : Daisy\_49, Neos5\_49
- Track 53 : Phayeta\_50, SlippinJimmy\_49
- Track 54 : Phaedruss\_47
- Track 55 : Rita1961\_49, Obutu\_49, Gervas\_49, Mortcellus\_48, MmasiCarm\_49
- Track 56 : Heathcliff\_49, HarveySr\_49, Devonte\_49, Deenasa\_49, Athena\_50, Briakila\_50, RagingRooster\_49
- Track 57 : GlenHope\_50, Halfpint\_48, Marley1013\_49
- Track 58 : Abinghost\_49, Casbah\_48, Phlyer\_49
- Track 59 : Bernardo\_50
- Track 60 : Baloo\_49, Ben11\_48, Audrey\_49
- Track 61 : Yinz\_49, ChaChing\_49
- Track 62 : Prince\_47, VioletZ\_48, Austelle\_47, Lolalove\_47, Mudslide\_46
- Track 63 : Zemanar\_47, Hangman\_46
- Track 64 : JaguarMi\_46
- Track 65 : Apex\_47
- Track 66 : ChrisnMich\_46
- Track 67 : AlanGrant\_48
- Track 68 : Hydro\_46
- Track 69 : JAMaL\_46
- Track 70 : Heath\_45
- Track 71 : Vincenzo\_47
- Track 72 : Nanao\_45, Ahwei\_45, Poster\_45
- Track 73 : BobbyK\_47
- Track 74 : Nigel\_45
- Track 75 : Stinger\_45
- Track 76 : Magpie\_45, Fortunato\_47
- Track 77 : Waleliano\_46
- Track 78 : BrownCNA\_48
- Track 79 : RawrgerThat\_47
- Track 80 : Frederick\_46
- Track 81 : Mithril\_46
- Track 82 : Cooper\_47
- Track 83 : StinkyVeggy\_51
- Track 84 : SirJeffery\_50
- Track 85 : Mysterious\_51
- Track 86 : Reprobate\_50
- Track 87 : Rich\_49
- Track 88 : Serendipitous\_50
- Track 89 : Phelemich\_49
- Track 90 : Nangang\_50
- Track 91 : EastView9101\_51
- Track 92 : Bae\_50
- Track 93 : DigitDog\_50
- Track 94 : Acadian\_51
- Track 95 : Suigeneris\_51, Donny\_51
- Track 96 : 39HC\_044, 40BC\_044
- Track 97 : Hosp\_042
- Track 98 : Jolie1\_044
- Track 99 : KayaCho\_44
- Track 100 : Saguario\_53

- Track 101 : Thonko\_49
- Track 102 : Knocker\_52
- Track 103 : Quesadilla\_52
- Track 104 : PenguinLover67\_52
- Track 105 : CRB2\_52
- Track 106 : Funsized\_54
- Track 107 : YDN12\_46
- Track 108 : Abt2graduatex2\_45
- Track 109 : BabyGotBac\_45, TP1604\_44, Salete\_44, Maih\_43, BayC\_44
- Track 110 : Mischief19\_53
- Track 111 : RainyPolka\_45
- Track 112 : Asis\_44
- Track 113 : Xkcd426\_48
- Track 114 : Gustav\_32
- Track 115 : Upyo\_30
- Track 116 : Puppies\_31
- Track 117 : Morrissey\_33
- Track 118 : Widow\_31
- Track 119 : Trine\_30
- Track 120 : Mahdia\_31
- Track 121 : MossRose\_47
- Track 122 : MakoManhole\_47
- Track 123 : Sour\_49
- Track 124 : CaiB\_47
- Track 125 : Axumite\_44
- Track 126 : AnarQue\_47
- Track 127 : Evaa\_44
- Track 128 : NHagos\_45
- Track 129 : Sisko\_44, AnClar\_45, Yago84\_44
- Track 130 : CloverMinnie\_47
- Track 131 : Ligma\_44, Fresco\_44, Shatter\_44
- Track 132 : Mariokart\_44
- Track 133 : LittleMunchkin\_46
- Track 134 : BiggityBass\_44
- Track 135 : Wooper\_47
- Track 136 : CharlottesWeb\_44
- Track 137 : StAugustine\_68
- Track 138 : BFK20\_ORF40
- Track 139 : EmiRose\_30
- Track 140 : Pine5\_42
- Track 141 : TPA2\_57

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

The start number called the most often in the published annotations is 65, it was called in 226 of the 409 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• ABU\_52, Acadian\_51, Ahwei\_45, Altwerkus\_50, Andre\_54, Ashraf\_51, Austelle\_47, Badfish\_52, Bae\_50, Banjo\_50, BatteryCK\_50, Beaglebox\_50, Bishoperium\_50,

BlackStallion\_52, BlueHusk\_51, Bluephacebaby\_50, BobbyK\_47, Brilliant\_51, Buckeye\_51, Burr\_50, CamL\_51, CampRoach\_52, Cannibal\_51, Carthage\_49, Chaelin\_51, Chah\_53, Charles1\_51, CharlieGBrown\_50, CheetO\_51, Cher\_50, Childish\_50, Chorkpop\_51, Cobra\_51, Cornobble\_50, Craff\_52, DaddyDaniels\_51, Daka\_52, Dati\_51, Derpp\_50, Dice\_53, DigitDog\_50, Dingo\_51, Dione\_50, DirtJuice\_51, DoesntMatter\_50, DonSanchon\_50, Donny\_51, Durga\_52, EastView9101\_51, Emiris\_52, EmpTee\_51, Eremos\_51, Etaye\_51, Eugenia\_51, Fang\_52, FluffyNinja\_52, Fozzie\_50, Frankicide\_51, Frederick\_46, Freya\_50, FriarPreacher\_50, Fringe\_52, FugateOSU\_50, Gareth\_50, GeneCoco\_51, Giraffe\_51, Gophee\_51, Grand2040\_50, Gwilliam\_52, Gyarad\_0051, HSavage\_51, Haimas\_51, Haleema\_50, Hamish\_51, Hartsy\_51, Harvey\_51, Heath\_45, Held\_51, Hertubise\_51, Hetaeria\_51, HighStump\_51, Horchata\_51, Hydro\_46, ImtiyazSitla\_51, Inchworm\_52, Indlovu\_48, Inverness\_51, Iridoclysis\_51, IsaacEli\_52, JacAttac\_52, JaguarMi\_46, JangoPhett\_51, Jillium\_50, Kahve\_50, Kailash\_51, Katniss\_52, Kikipoo\_52, Kimbrough\_51, KingTut\_42, KlimbOn\_51, Kloppinator\_52, Kwadwo\_50, Kwksand96\_50, Labeouficaum\_50, LasagnaCat\_52, Lasso\_51, Lego3393\_50, LeiMonet\_52, LemonSlice\_51, Lolalove\_47, Longacauda\_50, Lopsy\_50, LostAndPhound\_50, LuckyMarjie\_50, Lulwa\_51, Lumine\_50, MRabcd\_50, Mag7\_50, Magic8\_51, Mana\_50, Manad\_51, Maskar\_51, Matalotodo\_51, Mcshane\_50, Mecca\_50, Megatron\_52, Melc17\_51, MelsMeow\_51, MichaelPhcott\_50, Mikota\_51, MitKao\_51, Mithril\_46, Morgushi\_51, Morty\_52, Mosaic\_50, MrPhizzler\_50, Mudslide\_46, Murdoc\_51, Mutante\_50, Mysterious\_51, Nacho\_0052, Nanao\_45, Nangang\_50, Newman\_51, Nicole21\_51, Nigel\_45, Numberten\_51, Nyala\_50, OSmaximus\_52, Olak\_51, Oline\_50, Olive\_51, OliverWalter\_51, Omniscient\_51, Orfeu\_51, Orwigg\_52, PG1\_52, Phamished\_52, Phareon\_51, PhenghisKhan\_50, Pherdinand\_52, Phergie\_51, Phipps\_51, Phleuron\_50, PhrankReynolds\_49, PhrodoBaggins\_51, Phunky\_51, Piglet\_0051, Pinkman\_50, Pipsqueak\_51, Placalicious\_50, Plmatters\_51, Podrick\_51, Pops\_51, Poster\_45, Potter\_50, Prickles\_51, Prince\_47, ProfessorX\_51, Puhltonio\_51, QueenBeane\_51, Quisquilliae\_51, RawrgerThat\_47, RedMaple\_51, Reprobate\_50, Rich\_49, Riggan\_51, Rimu\_53, Robyn\_50, Roliet\_51, Roscoe\_52, Roy17\_51, Saguaro\_53, Samaymay\_51, SassyCat97\_50, Scoot17C\_52, Scrick\_51, Selr12\_53, Serendipitous\_50, Serendipity\_51, Serpentine\_0051, Sheila\_51, ShiVal\_51, Sigman\_52, Simielle\_50, Skippy\_51, Slatt\_51, Soile\_51, Solosis\_50, Sophia\_50, Soto\_51, Spartan300\_51, Squid\_51, Squiggle\_51, StinkyVeggy\_51, Suigeneris\_51, Surely\_51, Swish\_52, Telesworld\_50, Thonko\_49, Thora\_51, ThreeOh3D2\_52, Timmi\_50, TomBombadil\_51, Tomlarah\_51, Toni\_50, Tooj\_51, True\_50, Trypo\_52, TyrionL\_50, UAch1\_51, UncleHowie\_51, Usavi\_51, Vaishali24\_50, Vaticameos\_47, VioletZ\_48, Virapocalypse\_51, Vista\_51, Vortex\_51, Waleliano\_46, Wallhey\_50, Waterdiva\_51, Weher20\_51, Windsor\_50, Xavier\_50, YouGoGlencoco\_51, Zaider\_52, Zelda\_51, Zonia\_51,

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

- Adriana\_52, Anderson\_51, Apex\_47, Boehler\_51, BrownCNA\_48, ChrisnMich\_46, Chunky\_51, Colbert\_51, Daffy\_51, DelRivs\_50, Doddsville\_51, Fortunato\_47, Hangman\_46, HenryJackson\_50, JAMaL\_46, KLucky39\_51, KingVeVeVe\_51, LeeLot\_51, Legolas\_51, Lulumae\_50, Magpie\_45, Maru\_50, Megamind20\_51, MiniBoss\_51, Mulan\_51, Oosterbaan\_51, Orion\_52, Pacifista\_53, PenguinLover67\_52, PhatCats2014\_52, PhatLouie\_51, Phelemich\_49, Ricotta\_51, SirJeffery\_50, Stinger\_45, Suffolk\_51, Swiphy\_53, TallGrassMM\_51, Valjean\_51, Yoshand\_52, Zemanar\_47,

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



• 39HC\_044, 40BC\_044, Abinghost\_49, AbsoluteMadLad\_50, Abt2graduatex2\_45, Aelin\_50, Akoma\_49, AlanGrant\_48, Allegro\_50, AltPhacts\_51, AnClar\_45, AnarQue\_47, Antonia\_50, Apizium\_51, Arbiter\_49, Ares\_50, Asis\_44, Athena\_50, Audrey\_49, Axumite\_44, BFK20\_ORF40, BabyGotBac\_45, Baloo\_49, Bananafish\_50, Basato\_52, BayC\_44, Ben11\_48, Bernardo\_50, BiggityBass\_44, BirdsNest\_53, Blocker23\_50, Boyle\_50, Briakila\_50, Brownie5\_50, CRB2\_52, CaiB\_47, Calamitous\_50, Casbah\_48, ChaChing\_49, Chandler\_49, CharlottesWeb\_44, Chute\_50, CloverMinnie\_47, Coffee\_50, Coletti\_50, Compostia\_50, Cooper\_47, Corofin\_49, Cosmolli16\_50, Crownjwl\_51, Daisy\_49, Deenasa\_49, Devonte\_49, DuchessDung\_50, Duggie\_50, Eaglehorse\_50, EmiRose\_30, Evaa\_44, Faze9\_49, FrenchFry\_50, Fresco\_44, Funsized\_54, Gadget\_50, Gervas\_49, Glass\_50, GlenHope\_50, Godines\_50, Gustav\_32, Halfpint\_48, HarveySr\_49, Hashim76\_54, Heathcliff\_49, Hedgerow\_50, Hocus\_50, Holeinone\_50, Hosp\_042, Imvubu\_43, ItsyBitsy1\_50, JDog\_50, Jackstina\_46, JakeO\_50, Jiminy\_50, Jiraiya\_53, Jolie1\_044, Kaleb\_50, Kamiyu\_49, KayaCho\_44, Keitherie\_51, Kheth\_50, Knocker\_52, Kronus\_48, Lars\_50, Laurie\_49, Lephleur\_50, LestyG\_49, Ligma\_44, LilMcDreamy\_48, LittleMunchkin\_46, LizLemon\_50, Mahdia\_31, Maih\_43, MakoManhole\_47, Mariokart\_44, Marley1013\_49, MasterPo\_50, Mesh1\_51, Mischief19\_53, MmasiCarm\_49, Morrissey\_33, Mortcellus\_48, Morty007\_49, MossRose\_47, NHagos\_45, Neos5\_49, Nozo\_49, Obutu\_49, Opia\_50, OrangeOswald\_49, Phaedrus\_47, Phantasmagoria\_50, Phayeta\_50, Philly\_48, Phlyer\_49, Pine5\_42, PinheadLarry\_51, Pipefish\_51, Puppies\_31, Quesadilla\_52, Qyrzula\_47, RagingRooster\_49, RainyPolka\_45, Rhinoforte\_50, Rita1961\_49, RomaT\_49, Rosebush\_49, SDcharge11\_51, Sabella\_49, Salete\_44, Schadenfreude\_50, Schueller\_51, Shatter\_44, Sisko\_44, SlippinJimmy\_49, Sour\_49, StAugustine\_68, Struggle\_50, SynergyX\_49, TA17A\_50, TP1604\_44, TPA2\_57, Thunderbird\_51, Tinciduntolum\_51, Tres\_50, Trine\_30, Tydolla\_49, Upyo\_30, Veritas\_50, Vincenzo\_47, Virgeve\_50, Vivaldi\_52, West99\_50, Widow\_31, Wooper\_47, Xkcd426\_48, YDN12\_46, Yago84\_44, Yahalom\_49, Yinz\_49, Zenteno07\_55,

### Summary by start number:

#### Start 17:

- Found in 1 of 459 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PenguinLover67\_52 (B9),

#### Start 27:

- Found in 149 of 459 ( 32.5% ) of genes in pham
- Manual Annotations of this start: 5 of 409
- Called 4.0% of time when present
- Phage (with cluster) where this start called: AnarQue\_47 (DR), CaiB\_47 (DR), CloverMinnie\_47 (DR), MakoManhole\_47 (DR), MossRose\_47 (DR), NHagos\_45 (DR),

#### Start 32:

- Found in 1 of 459 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gadget\_50 (B3),

Start 33:

- Found in 46 of 459 ( 10.0% ) of genes in pham
- Manual Annotations of this start: 9 of 409
- Called 26.1% of time when present
- Phage (with cluster) where this start called: Audrey\_49 (B3), Baloo\_49 (B3), Ben11\_48 (B3), GlenHope\_50 (B3), Halfpint\_48 (B3), Kronus\_48 (B3), LestyG\_49 (B3), Marley1013\_49 (B3), Phayeta\_50 (B3), RomaT\_49 (B3), SlippinJimmy\_49 (B3), Yahalom\_49 (B3),

Start 34:

- Found in 315 of 459 ( 68.6% ) of genes in pham
- Manual Annotations of this start: 34 of 409
- Called 10.8% of time when present
- Phage (with cluster) where this start called: Abinghost\_49 (B3), Akoma\_49 (B3), Athena\_50 (B3), Bernardo\_50 (B3), Briakila\_50 (B3), Casbah\_48 (B3), ChaChing\_49 (B3), Chandler\_49 (B3), Compostia\_50 (B3), Corofin\_49 (B3), Daisy\_49 (B3), Deenasa\_49 (B3), Devonte\_49 (B3), Gervas\_49 (B3), HarveySr\_49 (B3), Heathcliff\_49 (B3), Jackstina\_46 (B3), Kamiyu\_49 (B3), MmasiCarm\_49 (B3), Mortcellus\_48 (B3), Morty007\_49 (B3), Neos5\_49 (B3), Nozo\_49 (B3), Obutu\_49 (B3), OrangeOswald\_49 (B3), Phaedrus\_47 (B3), Philly\_48 (B3), Phlyer\_49 (B3), Pipefish\_51 (B3), RagingRooster\_49 (B3), Rita1961\_49 (B3), SynergyX\_49 (B3), Tydolla\_49 (B3), Yinz\_49 (B3),

Start 36:

- Found in 4 of 459 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Axumite\_44 (DR),

Start 37:

- Found in 4 of 459 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 3 of 409
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Fresco\_44 (DR), Ligma\_44 (DR), Shatter\_44 (DR),

Start 38:

- Found in 1 of 459 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Zenteno07\_55 (B13),

Start 39:

- Found in 2 of 459 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BirdsNest\_53 (B13), Hashim76\_54 (B13),

Start 40:

- Found in 6 of 459 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 6 of 409
- Called 100.0% of time when present

- Phage (with cluster) where this start called: AnClar\_45 (DR), BiggityBass\_44 (DR), LittleMunchkin\_46 (DR), Sisko\_44 (DR), Sour\_49 (DR), Yago84\_44 (DR),

Start 41:

- Found in 8 of 459 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Evaa\_44 (DR),

Start 56:

- Found in 1 of 459 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mariokart\_44 (DR),

Start 57:

- Found in 1 of 459 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LilMcDreamy\_48 (B12),

Start 58:

- Found in 1 of 459 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Funsized\_54 (B9),

Start 60:

- Found in 1 of 459 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Quesadilla\_52 (B9),

Start 61:

- Found in 7 of 459 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 409
- Called 85.7% of time when present
- Phage (with cluster) where this start called: 39HC\_044 (B6), 40BC\_044 (B6), CRB2\_52 (B9), Hosp\_042 (B6), Jolie1\_044 (B6), KayaCho\_44 (B6),

Start 64:

- Found in 52 of 459 ( 11.3% ) of genes in pham
- Manual Annotations of this start: 26 of 409
- Called 59.6% of time when present
- Phage (with cluster) where this start called: AbsoluteMadLad\_50 (B1), Aelin\_50 (B1), AltPhacts\_51 (B1), Apex\_47 (B4), Apizium\_51 (B1), Basato\_52 (B1), BrownCNA\_48 (B4), ChrisnMich\_46 (B4), Chute\_50 (B1), Coletti\_50 (B1), Cosmolli16\_50 (B1), DuchessDung\_50 (B1), Fortunato\_47 (B4), Hangman\_46 (B4), Hocus\_50 (B1), JAMaL\_46 (B4), JDog\_50 (B1), JakeO\_50 (B1), Jiminy\_50 (B1), Jiraiya\_53 (B1), Keitherie\_51 (B1), Magpie\_45 (B4), Mesh1\_51 (B1), PinheadLarry\_51 (B1), Schueller\_51 (B1), Stinger\_45 (B4), Struggle\_50 (B1), Thunderbird\_51 (B1), Veritas\_50 (B1), Virgeve\_50 (B1), Zemanar\_47 (B4),

Start 65:

- Found in 290 of 459 ( 63.2% ) of genes in pham
- Manual Annotations of this start: 226 of 409
- Called 85.9% of time when present
- Phage (with cluster) where this start called: ABU\_52 (B1), Acadian\_51 (B5), Ahwei\_45 (B4), Altwerkus\_50 (B1), Andre\_54 (B1), Ashraf\_51 (B1), Austelle\_47 (B4), Badfish\_52 (B1), Bae\_50 (B5), Banjo\_50 (B1), BatteryCK\_50 (B1), Beaglebox\_50 (B1), Bishoperium\_50 (B1), BlackStallion\_52 (B1), BlueHusk\_51 (B1), Bluephacebaby\_50 (B1), BobbyK\_47 (B4), Brilliant\_51 (B1), Buckeye\_51 (B1), Burr\_50 (B1), CamL\_51 (B1), CampRoach\_52 (B1), Cannibal\_51 (B1), Carthage\_49 (B1), Chaelin\_51 (B1), Chah\_53 (B1), Charles1\_51 (B1), CharlieGBrown\_50 (B1), CheetO\_51 (B1), Cher\_50 (B1), Childish\_50 (B1), Chorkpop\_51 (B1), Cobra\_51 (B1), Cornobble\_50 (B1), Craff\_52 (B1), DaddyDaniels\_51 (B1), Daka\_52 (B1), Dati\_51 (B1), Derpp\_50 (B1), Dice\_53 (B1), DigitDog\_50 (B5), Dingo\_51 (B1), Dione\_50 (B1), DirtJuice\_51 (B1), DoesntMatter\_50 (B1), DonSanchon\_50 (B1), Donny\_51 (B5), Durga\_52 (B1), EastView9101\_51 (B5), Emiris\_52 (B1), EmpTee\_51 (B1), Eremos\_51 (B1), Etaye\_51 (B1), Eugenia\_51 (B1), Fang\_52 (B1), FluffyNinja\_52 (B1), Fozzie\_50 (B1), Frankicide\_51 (B1), Frederick\_46 (B4), Freya\_50 (B1), FriarPreacher\_50 (B1), Fringe\_52 (B1), FugateOSU\_50 (B1), Gareth\_50 (B1), GeneCoco\_51 (B1), Giraffe\_51 (B1), Gophee\_51 (B1), Grand2040\_50 (B1), Gwilliam\_52 (B1), Gyarad\_0051 (B1), HSavage\_51 (B1), Haimas\_51 (B1), Haleema\_50 (B1), Hamish\_51 (B1), Hartsy\_51 (B1), Harvey\_51 (B1), Heath\_45 (B4), Held\_51 (B1), Hertubise\_51 (B1), Hetaeria\_51 (B1), HighStump\_51 (B1), Horchata\_51 (B1), Hydro\_46 (B4), ImtiyazSitla\_51 (B1), Inchworm\_52 (B1), Indlovu\_48 (B11), Inverness\_51 (B1), Iridoclysis\_51 (B1), IsaacEli\_52 (B1), JacAttac\_52 (B1), JaguarMi\_46 (B4), JangoPhett\_51 (B1), Jillium\_50 (B1), Kahve\_50 (B1), Kailash\_51 (B1), Katniss\_52 (B1), Kikipoo\_52 (B1), Kimbrough\_51 (B1), KingTut\_42 (B1), KlimbOn\_51 (B1), Kloppinator\_52 (B1), Kwadwo\_50 (B1), Kwksand96\_50 (B1), Labeouficaum\_50 (B1), LasagnaCat\_52 (B1), Lasso\_51 (B1), Lego3393\_50 (B1), LeiMonet\_52 (B1), LemonSlice\_51 (B1), Lolalove\_47 (B4), Longacauda\_50 (B1), Lopsy\_50 (B1), LostAndPhound\_50 (B1), LuckyMarjie\_50 (B1), Lulwa\_51 (B1), Lumine\_50 (B1), MRabcd\_50 (B1), Mag7\_50 (B1), Magic8\_51 (B1), Mana\_50 (B1), Manad\_51 (B1), Maskar\_51 (B1), Matalotodo\_51 (B1), Mcshane\_50 (B1), Mecca\_50 (B1), Megatron\_52 (B1), Melc17\_51 (B1), MelsMeow\_51 (B1), MichaelPhcott\_50 (B1), Mikota\_51 (B1), MitKao\_51 (B1), Mithril\_46 (B4), Morgushi\_51 (B1), Morty\_52 (B1), Mosaic\_50 (B1), MrPhizzler\_50 (B1), Mudslide\_46 (B4), Murdoc\_51 (B1), Mutante\_50 (B1), Mysterious\_51 (B5), Nacho\_0052 (B1), Nanao\_45 (B4), Nangang\_50 (B5), Newman\_51 (B1), Nicole21\_51 (B1), Nigel\_45 (B4), Numberten\_51 (B1), Nyala\_50 (B1), OSmaximus\_52 (B1), Olak\_51 (B1), Oline\_50 (B1), Olive\_51 (B1), OliverWalter\_51 (B1), Omniscient\_51 (B1), Orfeu\_51 (B1), Orwigg\_52 (B1), PG1\_52 (B1), Phamished\_52 (B1), Phareon\_51 (B1), PhenghisKhan\_50 (B1), Pherdinand\_52 (B1), Phergie\_51 (B1), Phipps\_51 (B1), Phleuron\_50 (B1), PhrankReynolds\_49 (B1), PhrodoBaggins\_51 (B1), Phunky\_51 (B1), Piglet\_0051 (B1), Pinkman\_50 (B1), Pipsqueak\_51 (B1), Placalicious\_50 (B1), Plmatters\_51 (B1), Podrick\_51 (B1), Pops\_51 (B1), Poster\_45 (B4), Potter\_50 (B1), Prickles\_51 (B1), Prince\_47 (B4), ProfessorX\_51 (B1), Puhltonio\_51 (B1), QueenBeane\_51 (B1), Quisquiliae\_51 (B1), RawrgerThat\_47 (B4), RedMaple\_51 (B1), Reprobate\_50 (B5), Rich\_49 (B5), Riggan\_51 (B1), Rimu\_53 (B1), Robyn\_50 (B1), Roliet\_51 (B1), Roscoe\_52 (B1), Roy17\_51 (B1), Saguaro\_53 (B7), Samaymay\_51 (B1), SassyCat97\_50 (B1), Scoot17C\_52 (B1), Scrick\_51 (B1), Selr12\_53 (B1), Serendipitous\_50 (B5), Serendipity\_51 (B1), Serpentine\_0051 (B1), Sheila\_51 (B1), ShiVal\_51 (B1), Sigman\_52 (B1), Simielle\_50 (B1), Skippy\_51 (B1), Slatt\_51 (B1), Soile\_51 (B1), Solosis\_50 (B1), Sophia\_50 (B1), Soto\_51 (B1),

Spartan300\_51 (B1), Squid\_51 (B1), Squiggle\_51 (B1), StinkyVeggy\_51 (B5), Suigeneris\_51 (B5), Surely\_51 (B1), Swish\_52 (B1), Telesworld\_50 (B1), Thonko\_49 (B8), Thora\_51 (B1), ThreeOh3D2\_52 (B1), Timmi\_50 (B1), TomBombadil\_51 (B1), Tomlarah\_51 (B1), Toni\_50 (B1), Tooj\_51 (B1), True\_50 (B1), Trypo\_52 (B1), TyrionL\_50 (B1), UAch1\_51 (B1), UncleHowie\_51 (B1), Usavi\_51 (B1), Vaishali24\_50 (B1), Vaticameos\_47 (B1), VioletZ\_48 (B4), Virapocalypse\_51 (B1), Vista\_51 (B1), Vortex\_51 (B1), Waleliano\_46 (B4), Wallhey\_50 (B1), Waterdiva\_51 (B1), Weher20\_51 (B1), Windsor\_50 (B1), Xavier\_50 (B1), YouGoGlencoco\_51 (B1), Zaider\_52 (B1), Zelda\_51 (B1), Zonia\_51 (B1),

Start 67:

- Found in 311 of 459 ( 67.8% ) of genes in pham
- Manual Annotations of this start: 65 of 409
- Called 22.8% of time when present
- Phage (with cluster) where this start called: Adriana\_52 (B1), Allegro\_50 (B2), Anderson\_51 (B1), Antonia\_50 (B1), Arbiter\_49 (B2), Ares\_50 (B2), Bananafish\_50 (B2), Blocker23\_50 (B2), Boehler\_51 (B1), Boyle\_50 (B2), Brownie5\_50 (B2), Calamitous\_50 (B2), Chunky\_51 (B1), Coffee\_50 (B2), Colbert\_51 (B1), Crownjwl\_51 (B1), Daffy\_51 (B1), DelRivs\_50 (B1), Doddsville\_51 (B1), Duggie\_50 (B1), Eaglehorse\_50 (B2), Faze9\_49 (B2), FrenchFry\_50 (B2), Glass\_50 (B2), Godines\_50 (B2), Hedgerow\_50 (B2), HenryJackson\_50 (B1), Holeinone\_50 (B2), Imvubu\_43 (B10), ItsyBitsy1\_50 (B2), KLucky39\_51 (B1), Kaleb\_50 (B2), Kheth\_50 (B2), KingVeVeVe\_51 (B1), Knocker\_52 (B9), Lars\_50 (B2), Laurie\_49 (B2), LeeLot\_51 (B1), Legolas\_51 (B1), Lephleur\_50 (B2), LizLemon\_50 (B2), Lulumae\_50 (B1), Maru\_50 (B1), MasterPo\_50 (B2), Megamind20\_51 (B1), MiniBoss\_51 (B1), Mulan\_51 (B1), Oosterbaan\_51 (B1), Opia\_50 (B2), Orion\_52 (B1), Pacifista\_53 (B1), Phantasmagoria\_50 (B2), PhatCats2014\_52 (B1), PhatLouie\_51 (B1), Qyrzula\_47 (B2), Rhinoforte\_50 (B2), Ricotta\_51 (B1), Rosebush\_49 (B2), Sabella\_49 (B2), Schadenfreude\_50 (B1), Suffolk\_51 (B1), Swiphy\_53 (B1), TA17A\_50 (B2), TallGrassMM\_51 (B1), Tinciduntolum\_51 (B2), Tres\_50 (B2), Valjean\_51 (B1), Vincenzo\_47 (B4), Vivaldi\_52 (B1), West99\_50 (B2), Yoshand\_52 (B1),

Start 68:

- Found in 290 of 459 ( 63.2% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 0.3% of time when present
- Phage (with cluster) where this start called: Cooper\_47 (B4),

Start 70:

- Found in 65 of 459 ( 14.2% ) of genes in pham
- Manual Annotations of this start: 2 of 409
- Called 4.6% of time when present
- Phage (with cluster) where this start called: AlanGrant\_48 (B4), Phelemich\_49 (B5), SirJeffery\_50 (B5),

Start 84:

- Found in 1 of 459 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TPA2\_57 (singleton),

Start 92:

- Found in 7 of 459 ( 1.5% ) of genes in pham

- Manual Annotations of this start: 5 of 409
- Called 71.4% of time when present
- Phage (with cluster) where this start called: BabyGotBac\_45 (BG), BayC\_44 (BG), Maih\_43 (BG), Salete\_44 (BG), TP1604\_44 (BG),

Start 99:

- Found in 11 of 459 ( 2.4% ) of genes in pham
- Manual Annotations of this start: 5 of 409
- Called 54.5% of time when present
- Phage (with cluster) where this start called: Abt2graduatex2\_45 (BG), Asis\_44 (BG), Mischief19\_53 (BG), RainyPolka\_45 (BG), Xkcd426\_48 (BG), YDN12\_46 (BG),

Start 100:

- Found in 2 of 459 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 50.0% of time when present
- Phage (with cluster) where this start called: SDcharge11\_51 (B1),

Start 110:

- Found in 1 of 459 ( 0.2% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Trine\_30 (CD),

Start 111:

- Found in 2 of 459 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Upyo\_30 (CD),

Start 112:

- Found in 1 of 459 ( 0.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BFK20\_ORF40 (singleton),

Start 117:

- Found in 2 of 459 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 409
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Morrissey\_33 (CD), Pine5\_42 (singleton),

Start 118:

- Found in 8 of 459 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 5 of 409
- Called 75.0% of time when present
- Phage (with cluster) where this start called: EmiRose\_30 (singleton), Gustav\_32 (CD), Mahdia\_31 (CD), Puppies\_31 (CD), StAugustine\_68 (singleton), Widow\_31 (CD),

Start 121:

- Found in 359 of 459 ( 78.2% ) of genes in pham



- Manual Annotations of this start: 1 of 409
- Called 0.6% of time when present
- Phage (with cluster) where this start called: CharlottesWeb\_44 (DR), Wooper\_47 (DR),

### **Summary by clusters:**

There are 17 clusters represented in this pham: singleton, BG, B10, B8, B3, CD, B4, B5, B6, B7, B12, B1, B2, B11, DR, B9, B13,

Info for manual annotations of cluster B1:

- Start number 64 was manually annotated 17 times for cluster B1.
- Start number 65 was manually annotated 205 times for cluster B1.
- Start number 67 was manually annotated 30 times for cluster B1.
- Start number 100 was manually annotated 1 time for cluster B1.

Info for manual annotations of cluster B10:

- Start number 67 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B11:

- Start number 65 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:

- Start number 57 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B13:

- Start number 38 was manually annotated 1 time for cluster B13.
- Start number 39 was manually annotated 1 time for cluster B13.

Info for manual annotations of cluster B2:

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

Info for manual annotations of cluster B3:

- Start number 32 was manually annotated 1 time for cluster B3.
- Start number 33 was manually annotated 9 times for cluster B3.
- Start number 34 was manually annotated 34 times for cluster B3.

Info for manual annotations of cluster B4:

- Start number 64 was manually annotated 9 times for cluster B4.
- Start number 65 was manually annotated 11 times for cluster B4.
- Start number 67 was manually annotated 1 time for cluster B4.
- Start number 68 was manually annotated 1 time for cluster B4.
- Start number 70 was manually annotated 1 time for cluster B4.

Info for manual annotations of cluster B5:

- Start number 65 was manually annotated 7 times for cluster B5.
- Start number 70 was manually annotated 1 time for cluster B5.

Info for manual annotations of cluster B6:

- Start number 61 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B7:

- Start number 65 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B8:

- Start number 65 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster B9:

- Start number 17 was manually annotated 1 time for cluster B9.
- Start number 58 was manually annotated 1 time for cluster B9.
- Start number 60 was manually annotated 1 time for cluster B9.
- Start number 61 was manually annotated 1 time for cluster B9.
- Start number 67 was manually annotated 1 time for cluster B9.

Info for manual annotations of cluster BG:

- Start number 92 was manually annotated 5 times for cluster BG.
- Start number 99 was manually annotated 5 times for cluster BG.

Info for manual annotations of cluster CD:

- Start number 110 was manually annotated 1 time for cluster CD.
- Start number 111 was manually annotated 1 time for cluster CD.
- Start number 117 was manually annotated 1 time for cluster CD.
- Start number 118 was manually annotated 4 times for cluster CD.

Info for manual annotations of cluster DR:

- Start number 27 was manually annotated 5 times for cluster DR.
- Start number 36 was manually annotated 1 time for cluster DR.
- Start number 37 was manually annotated 3 times for cluster DR.
- Start number 40 was manually annotated 6 times for cluster DR.
- Start number 41 was manually annotated 1 time for cluster DR.
- Start number 56 was manually annotated 1 time for cluster DR.
- Start number 121 was manually annotated 1 time for cluster DR.

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

Gene: 39HC\_044 Start: 43561, Stop: 42131, Start Num: 61

Candidate Starts for 39HC\_044:

(Start: 61 @43561 has 2 MA's), (Start: 68 @43543 has 1 MA's), (103, 43339), (109, 43321), (116, 43267), (125, 43240), (134, 43204), (135, 43192), (165, 43012), (167, 43006), (173, 42988), (176, 42973), (203, 42907), (209, 42865), (212, 42853), (213, 42850), (222, 42778), (224, 42772), (227, 42754), (228, 42751), (240, 42697), (255, 42643), (259, 42613), (262, 42592), (269, 42520), (271, 42499), (275, 42466), (286, 42427), (294, 42382), (297, 42364), (299, 42358), (308, 42313), (310, 42310), (340, 42187),

Gene: 40BC\_044 Start: 43561, Stop: 42131, Start Num: 61

Candidate Starts for 40BC\_044:

(Start: 61 @43561 has 2 MA's), (Start: 68 @43543 has 1 MA's), (103, 43339), (109, 43321), (116, 43267), (125, 43240), (134, 43204), (135, 43192), (165, 43012), (167, 43006), (173, 42988), (176, 42973), (203, 42907), (209, 42865), (212, 42853), (213, 42850), (222, 42778), (224, 42772), (227, 42754), (228, 42751), (240, 42697), (255, 42643), (259, 42613), (262, 42592), (269, 42520), (271, 42499), (275, 42466), (286, 42427), (294, 42382), (297, 42364), (299, 42358), (308, 42313), (310, 42310), (340, 42187),

Gene: ABU\_52 Start: 45373, Stop: 43970, Start Num: 65

Candidate Starts for ABU\_52:

(Start: 34 @45538 has 34 MA's), (Start: 65 @45373 has 226 MA's), (Start: 67 @45370 has 65 MA's), (Start: 68 @45364 has 1 MA's), (73, 45322), (86, 45250), (93, 45229), (Start: 121 @45133 has 1 MA's), (135, 45082), (147, 45016), (148, 45013), (151, 44989), (153, 44962), (167, 44896), (171, 44884), (181, 44848), (197, 44803), (205, 44773), (212, 44734), (217, 44695), (221, 44662), (222, 44659), (227, 44635), (236, 44602), (239, 44581), (249, 44551), (265, 44437), (269, 44395), (271, 44374), (275, 44341), (285, 44269), (286, 44263), (295, 44215), (304, 44170), (310, 44146), (314, 44131), (323, 44107),

Gene: Abinghost\_49 Start: 44867, Stop: 43254, Start Num: 34

Candidate Starts for Abinghost\_49:

(16, 44993), (20, 44987), (21, 44972), (Start: 33 @44876 has 9 MA's), (Start: 34 @44867 has 34 MA's), (51, 44771), (Start: 70 @44693 has 2 MA's), (87, 44558), (Start: 121 @44399 has 1 MA's), (127, 44384), (129, 44372), (135, 44342), (144, 44300), (153, 44222), (188, 44090), (195, 44057), (197, 44048), (216, 43955), (222, 43907), (225, 43892), (227, 43883), (241, 43823), (249, 43799), (264, 43709), (275, 43598), (283, 43565), (284, 43562), (287, 43547), (292, 43526), (298, 43493),

Gene: AbsoluteMadLad\_50 Start: 45250, Stop: 43847, Start Num: 64

Candidate Starts for AbsoluteMadLad\_50:

(Start: 64 @45250 has 26 MA's), (Start: 67 @45247 has 65 MA's), (Start: 68 @45241 has 1 MA's), (73, 45199), (86, 45127), (93, 45106), (Start: 121 @45010 has 1 MA's), (135, 44959), (147, 44893), (148, 44890), (153, 44839), (167, 44773), (171, 44761), (181, 44725), (197, 44680), (205, 44650), (212, 44611), (217, 44572), (221, 44539), (222, 44536), (227, 44512), (236, 44479), (239, 44458), (249, 44428), (265, 44314), (269, 44272), (271, 44251), (275, 44218), (285, 44146), (286, 44140), (295, 44092), (304, 44047), (310, 44023), (314, 44008), (323, 43984),

Gene: Abt2graduatex2\_45 Start: 36400, Stop: 35234, Start Num: 99

Candidate Starts for Abt2graduatex2\_45:

(Start: 99 @36400 has 5 MA's), (114, 36361), (126, 36322), (138, 36256), (140, 36247), (154, 36151), (155, 36145), (163, 36100), (199, 36031), (212, 35980), (215, 35962), (226, 35884), (230, 35872), (233, 35860), (240, 35824), (241, 35821), (244, 35812), (262, 35728), (283, 35575), (290, 35542), (291, 35536), (293, 35527), (302, 35482), (306, 35458), (308, 35449), (329, 35359), (334, 35341), (348, 35245),

Gene: Acadian\_51 Start: 46143, Stop: 44758, Start Num: 65

Candidate Starts for Acadian\_51:

(6, 46572), (16, 46419), (Start: 34 @46293 has 34 MA's), (Start: 65 @46143 has 226 MA's), (Start: 70 @46125 has 2 MA's), (101, 45969), (Start: 121 @45906 has 1 MA's), (130, 45876), (158, 45711), (169, 45669), (174, 45651), (179, 45636), (200, 45585), (209, 45534), (222, 45447), (225, 45432), (227, 45423), (238, 45372), (241, 45363), (249, 45339), (251, 45336), (267, 45204), (271, 45171), (275, 45138), (277, 45120), (285, 45066), (293, 45021), (298, 44994), (319, 44913), (323, 44895), (338, 44832),

Gene: Adriana\_52 Start: 45368, Stop: 43968, Start Num: 67

Candidate Starts for Adriana\_52:

(10, 45749), (12, 45704), (18, 45662), (Start: 27 @45581 has 5 MA's), (Start: 34 @45536 has 34 MA's), (Start: 65 @45371 has 226 MA's), (Start: 67 @45368 has 65 MA's), (Start: 68 @45362 has 1 MA's), (73, 45320), (86, 45248), (93, 45227), (Start: 121 @45131 has 1 MA's), (135, 45080), (147, 45014), (148, 45011), (153, 44960), (167, 44894), (171, 44882), (181, 44846), (197, 44801), (205, 44771), (212, 44732), (217, 44693), (221, 44660), (222, 44657), (227, 44633), (236, 44600), (239, 44579), (249, 44549), (265, 44435), (269, 44393), (271, 44372), (275, 44339), (285, 44267), (286, 44261), (295, 44213), (304, 44168), (310, 44144), (314, 44129), (323, 44105),

Gene: Aelin\_50 Start: 44814, Stop: 43411, Start Num: 64

Candidate Starts for Aelin\_50:

(Start: 64 @44814 has 26 MA's), (Start: 67 @44811 has 65 MA's), (Start: 68 @44805 has 1 MA's), (73, 44763), (86, 44691), (93, 44670), (Start: 121 @44574 has 1 MA's), (135, 44523), (147, 44457), (148, 44454), (153, 44403), (167, 44337), (171, 44325), (181, 44289), (197, 44244), (205, 44214), (212, 44175), (217, 44136), (221, 44103), (222, 44100), (227, 44076), (236, 44043), (239, 44022), (249, 43992), (265, 43878), (269, 43836), (271, 43815), (275, 43782), (285, 43710), (286, 43704), (304, 43611), (310, 43587), (314, 43572), (323, 43548),

Gene: Ahwei\_45 Start: 44672, Stop: 43332, Start Num: 65

Candidate Starts for Ahwei\_45:

(Start: 64 @44675 has 26 MA's), (Start: 65 @44672 has 226 MA's), (Start: 68 @44663 has 1 MA's), (69, 44657), (76, 44606), (116, 44459), (135, 44393), (139, 44369), (167, 44207), (173, 44189), (176, 44174), (178, 44171), (187, 44144), (206, 44081), (207, 44072), (220, 43985), (225, 43961), (236, 43919), (237, 43916), (239, 43898), (249, 43868), (255, 43841), (260, 43808), (263, 43787), (264, 43778), (267, 43733), (268, 43727), (269, 43718), (271, 43697), (275, 43664), (286, 43625), (298, 43559), (299, 43556), (319, 43487), (323, 43469),

Gene: Akoma\_49 Start: 44878, Stop: 43265, Start Num: 34

Candidate Starts for Akoma\_49:

(16, 45004), (20, 44998), (21, 44983), (Start: 33 @44887 has 9 MA's), (Start: 34 @44878 has 34 MA's), (51, 44782), (Start: 70 @44704 has 2 MA's), (87, 44569), (Start: 121 @44410 has 1 MA's), (127, 44395), (129, 44383), (135, 44353), (144, 44311), (153, 44233), (188, 44101), (195, 44068), (197, 44059), (216, 43966), (222, 43918), (225, 43903), (227, 43894), (236, 43861), (241, 43834), (249, 43810), (264, 43720), (275, 43609), (283, 43576), (284, 43573), (287, 43558), (292, 43537), (298, 43504),

Gene: AlanGrant\_48 Start: 46262, Stop: 44940, Start Num: 70

Candidate Starts for AlanGrant\_48:

(Start: 67 @46277 has 65 MA's), (Start: 70 @46262 has 2 MA's), (116, 46067), (130, 46022), (135, 46001), (161, 45836), (167, 45815), (168, 45812), (173, 45797), (205, 45698), (207, 45680), (213, 45656), (222, 45584), (225, 45569), (231, 45545), (237, 45524), (239, 45506), (249, 45476), (255, 45449), (260, 45416), (262, 45398), (267, 45341), (271, 45305), (275, 45272), (286, 45233), (298, 45167), (299, 45164), (314, 45101), (319, 45095), (323, 45077),

Gene: Allegro\_50 Start: 44855, Stop: 43488, Start Num: 67

Candidate Starts for Allegro\_50:

(Start: 67 @44855 has 65 MA's), (75, 44792), (77, 44777), (108, 44666), (120, 44615), (134, 44567), (142, 44519), (164, 44378), (167, 44369), (190, 44324), (192, 44318), (193, 44312), (197, 44300), (217, 44195), (221, 44162), (225, 44144), (227, 44135), (236, 44102), (241, 44075), (249, 44051), (253, 44024), (258, 43997), (266, 43922), (271, 43877), (275, 43844), (282, 43823), (283, 43817), (289, 43784), (291, 43775), (293, 43766), (335, 43604), (338, 43586), (346, 43529),

Gene: AltPhacts\_51 Start: 45223, Stop: 43820, Start Num: 64

Candidate Starts for AltPhacts\_51:

(Start: 64 @45223 has 26 MA's), (Start: 67 @45220 has 65 MA's), (Start: 68 @45214 has 1 MA's), (73, 45172), (86, 45100), (93, 45079), (Start: 121 @44983 has 1 MA's), (135, 44932), (147, 44866), (148, 44863), (153, 44812), (167, 44746), (171, 44734), (181, 44698), (197, 44653), (205, 44623), (212, 44584), (217, 44545), (221, 44512), (222, 44509), (227, 44485), (236, 44452), (239, 44431), (249, 44401), (265, 44287), (269, 44245), (271, 44224), (275, 44191), (285, 44119), (286, 44113), (295, 44065), (304, 44020), (310, 43996), (314, 43981), (323, 43957),

Gene: Altwerkus\_50 Start: 44929, Stop: 43526, Start Num: 65

Candidate Starts for Altwerkus\_50:

(10, 45307), (12, 45262), (18, 45220), (Start: 27 @45139 has 5 MA's), (Start: 34 @45094 has 34 MA's), (Start: 65 @44929 has 226 MA's), (Start: 67 @44926 has 65 MA's), (Start: 68 @44920 has 1 MA's), (73, 44878), (86, 44806), (93, 44785), (Start: 121 @44689 has 1 MA's), (135, 44638), (147, 44572), (148, 44569), (153, 44518), (167, 44452), (171, 44440), (181, 44404), (197, 44359), (205, 44329), (212, 44290), (217, 44251), (221, 44218), (222, 44215), (227, 44191), (236, 44158), (239, 44137), (249, 44107), (265, 43993), (269, 43951), (271, 43930), (275, 43897), (285, 43825), (286, 43819), (295, 43771), (304, 43726), (310, 43702), (314, 43687), (323, 43663),

Gene: AnClar\_45 Start: 40751, Stop: 39486, Start Num: 40

Candidate Starts for AnClar\_45:

(Start: 40 @40751 has 6 MA's), (44, 40733), (50, 40712), (Start: 121 @40625 has 1 MA's), (124, 40619), (129, 40598), (135, 40568), (196, 40310), (202, 40292), (213, 40235), (222, 40163), (225, 40148), (227, 40139), (232, 40121), (236, 40106), (241, 40079), (249, 40055), (260, 39995), (267, 39920), (271, 39887), (275, 39854), (276, 39845), (279, 39821), (282, 39809), (293, 39743), (298, 39716), (301, 39704), (330, 39596), (331, 39593), (338, 39560),

Gene: AnarQue\_47 Start: 40325, Stop: 38934, Start Num: 27

Candidate Starts for AnarQue\_47:

(4, 40664), (5, 40640), (7, 40529), (11, 40484), (Start: 27 @40325 has 5 MA's), (31, 40298), (Start: 41 @40247 has 1 MA's), (71, 40103), (124, 40097), (133, 40064), (135, 40046), (141, 40013), (143, 40007), (155, 39917), (168, 39857), (194, 39788), (202, 39767), (209, 39725), (219, 39653), (221, 39641), (225, 39623), (227, 39614), (236, 39581), (249, 39530), (256, 39500), (259, 39473), (260, 39470), (271, 39362), (276, 39320), (278, 39287), (283, 39242), (286, 39230), (292, 39197), (293, 39191), (298, 39164),

Gene: Anderson\_51 Start: 45225, Stop: 43825, Start Num: 67

Candidate Starts for Anderson\_51:

(Start: 34 @45393 has 34 MA's), (Start: 65 @45228 has 226 MA's), (Start: 67 @45225 has 65 MA's), (Start: 68 @45219 has 1 MA's), (73, 45177), (86, 45105), (93, 45084), (Start: 121 @44988 has 1 MA's), (135, 44937), (147, 44871), (148, 44868), (153, 44817), (167, 44751), (171, 44739), (181, 44703), (197, 44658), (205, 44628), (212, 44589), (217, 44550), (221, 44517), (222, 44514), (227, 44490), (236, 44457), (239, 44436), (249, 44406), (265, 44292), (269, 44250), (271, 44229), (275, 44196), (285, 44124), (286, 44118), (295, 44070), (304, 44025), (310, 44001), (314, 43986), (323, 43962),

Gene: Andre\_54 Start: 45365, Stop: 43962, Start Num: 65

Candidate Starts for Andre\_54:

(10, 45743), (12, 45698), (18, 45656), (Start: 27 @45575 has 5 MA's), (Start: 34 @45530 has 34 MA's), (Start: 65 @45365 has 226 MA's), (Start: 67 @45362 has 65 MA's), (Start: 68 @45356 has 1 MA's), (73, 45314), (86, 45242), (93, 45221), (Start: 121 @45125 has 1 MA's), (135, 45074), (147, 45008), (148, 45005), (151, 44981), (153, 44954), (167, 44888), (171, 44876), (181, 44840), (197, 44795), (205, 44765), (212, 44726), (217, 44687), (221, 44654), (222, 44651), (227, 44627), (236, 44594), (239, 44573), (249, 44543), (265, 44429), (269, 44387), (271, 44366), (275, 44333), (285, 44261), (286, 44255), (295, 44207), (304, 44162), (310, 44138), (314, 44123), (323, 44099),

Gene: Antonia\_50 Start: 44811, Stop: 43411, Start Num: 67

Candidate Starts for Antonia\_50:

(Start: 64 @44814 has 26 MA's), (Start: 67 @44811 has 65 MA's), (Start: 68 @44805 has 1 MA's), (73, 44763), (86, 44691), (93, 44670), (Start: 121 @44574 has 1 MA's), (135, 44523), (147, 44457), (148, 44454), (153, 44403), (167, 44337), (171, 44325), (181, 44289), (197, 44244), (205, 44214), (212, 44175), (217, 44136), (221, 44103), (222, 44100), (227, 44076), (236, 44043), (239, 44022), (249, 43992), (265, 43878), (269, 43836), (271, 43815), (275, 43782), (285, 43710), (286, 43704),

(304, 43611), (310, 43587), (314, 43572), (323, 43548),

Gene: Apex\_47 Start: 45919, Stop: 44576, Start Num: 64

Candidate Starts for Apex\_47:

(Start: 64 @45919 has 26 MA's), (Start: 65 @45916 has 226 MA's), (Start: 68 @45907 has 1 MA's), (69, 45901), (76, 45850), (116, 45703), (130, 45658), (135, 45637), (157, 45496), (161, 45472), (167, 45451), (168, 45448), (173, 45433), (176, 45418), (203, 45349), (205, 45334), (207, 45316), (213, 45292), (222, 45220), (227, 45196), (236, 45163), (237, 45160), (239, 45142), (249, 45112), (260, 45052), (262, 45034), (264, 45022), (267, 44977), (268, 44971), (269, 44962), (274, 44932), (275, 44908), (286, 44869), (294, 44824), (298, 44803), (299, 44800), (319, 44731), (323, 44713),

Gene: Apizium\_51 Start: 45129, Stop: 43726, Start Num: 64

Candidate Starts for Apizium\_51:

(10, 45504), (12, 45459), (18, 45417), (Start: 27 @45336 has 5 MA's), (Start: 34 @45291 has 34 MA's), (Start: 64 @45129 has 26 MA's), (Start: 67 @45126 has 65 MA's), (73, 45078), (86, 45006), (93, 44985), (Start: 121 @44889 has 1 MA's), (135, 44838), (147, 44772), (148, 44769), (153, 44718), (167, 44652), (171, 44640), (181, 44604), (197, 44559), (205, 44529), (212, 44490), (217, 44451), (221, 44418), (222, 44415), (227, 44391), (236, 44358), (239, 44337), (249, 44307), (265, 44193), (269, 44151), (271, 44130), (275, 44097), (285, 44025), (286, 44019), (295, 43971), (304, 43926), (310, 43902), (314, 43887), (323, 43863),

Gene: Arbitr\_49 Start: 44958, Stop: 43591, Start Num: 67

Candidate Starts for Arbitr\_49:

(Start: 67 @44958 has 65 MA's), (75, 44895), (77, 44880), (108, 44769), (120, 44718), (134, 44670), (142, 44622), (164, 44481), (167, 44472), (190, 44427), (192, 44421), (193, 44415), (197, 44403), (217, 44298), (221, 44265), (225, 44247), (227, 44238), (236, 44205), (241, 44178), (249, 44154), (253, 44127), (258, 44100), (266, 44025), (271, 43980), (275, 43947), (282, 43926), (283, 43920), (289, 43887), (291, 43878), (293, 43869), (335, 43707), (338, 43689), (346, 43632),

Gene: Ares\_50 Start: 44927, Stop: 43560, Start Num: 67

Candidate Starts for Ares\_50:

(Start: 67 @44927 has 65 MA's), (75, 44864), (77, 44849), (108, 44738), (120, 44687), (134, 44639), (142, 44591), (164, 44450), (167, 44441), (190, 44396), (192, 44390), (193, 44384), (197, 44372), (217, 44267), (221, 44234), (227, 44207), (236, 44174), (241, 44147), (249, 44123), (253, 44096), (258, 44069), (266, 43994), (271, 43949), (275, 43916), (282, 43895), (283, 43889), (289, 43856), (291, 43847), (293, 43838), (335, 43676), (338, 43658), (346, 43601),

Gene: Ashraf\_51 Start: 44930, Stop: 43527, Start Num: 65

Candidate Starts for Ashraf\_51:

(Start: 34 @45095 has 34 MA's), (Start: 65 @44930 has 226 MA's), (Start: 67 @44927 has 65 MA's), (Start: 68 @44921 has 1 MA's), (73, 44879), (86, 44807), (93, 44786), (Start: 121 @44690 has 1 MA's), (135, 44639), (147, 44573), (148, 44570), (153, 44519), (167, 44453), (171, 44441), (181, 44405), (197, 44360), (205, 44330), (212, 44291), (217, 44252), (221, 44219), (222, 44216), (224, 44210), (227, 44192), (236, 44159), (239, 44138), (249, 44108), (265, 43994), (269, 43952), (271, 43931), (275, 43898), (285, 43826), (286, 43820), (295, 43772), (304, 43727), (310, 43703), (314, 43688), (323, 43664),

Gene: Asis\_44 Start: 36151, Stop: 34985, Start Num: 99

Candidate Starts for Asis\_44:

(55, 36394), (66, 36343), (74, 36286), (Start: 92 @36175 has 5 MA's), (Start: 99 @36151 has 5 MA's), (114, 36112), (126, 36073), (136, 36028), (138, 36007), (154, 35902), (155, 35896), (163, 35851), (167, 35839), (199, 35782), (204, 35776), (212, 35731), (215, 35713), (225, 35641), (233, 35611), (240, 35575), (241, 35572), (244, 35563), (291, 35287), (293, 35278), (302, 35233), (306, 35209),



(308, 35200), (316, 35167), (329, 35110), (334, 35092), (347, 34999), (348, 34996),

Gene: Athena\_50 Start: 45625, Stop: 44012, Start Num: 34

Candidate Starts for Athena\_50:

(16, 45751), (20, 45745), (21, 45730), (Start: 33 @45634 has 9 MA's), (Start: 34 @45625 has 34 MA's), (51, 45529), (Start: 70 @45451 has 2 MA's), (87, 45316), (Start: 121 @45157 has 1 MA's), (127, 45142), (129, 45130), (135, 45100), (144, 45058), (153, 44980), (166, 44914), (167, 44911), (188, 44848), (195, 44815), (197, 44806), (216, 44713), (222, 44665), (223, 44662), (225, 44650), (227, 44641), (241, 44581), (249, 44557), (264, 44467), (275, 44356), (283, 44323), (284, 44320), (287, 44305), (292, 44284), (298, 44251),

Gene: Audrey\_49 Start: 44882, Stop: 43260, Start Num: 33

Candidate Starts for Audrey\_49:

(16, 44999), (20, 44993), (21, 44978), (Start: 33 @44882 has 9 MA's), (Start: 34 @44873 has 34 MA's), (51, 44777), (Start: 70 @44699 has 2 MA's), (87, 44564), (Start: 121 @44405 has 1 MA's), (127, 44390), (129, 44378), (135, 44348), (144, 44306), (153, 44228), (166, 44162), (167, 44159), (188, 44096), (195, 44063), (197, 44054), (216, 43961), (222, 43913), (225, 43898), (227, 43889), (241, 43829), (249, 43805), (264, 43715), (275, 43604), (283, 43571), (284, 43568), (287, 43553), (292, 43532), (298, 43499),

Gene: Austelle\_47 Start: 46366, Stop: 45026, Start Num: 65

Candidate Starts for Austelle\_47:

(Start: 64 @46369 has 26 MA's), (Start: 65 @46366 has 226 MA's), (Start: 68 @46357 has 1 MA's), (69, 46351), (76, 46300), (116, 46153), (130, 46108), (135, 46087), (157, 45946), (161, 45922), (167, 45901), (168, 45898), (173, 45883), (176, 45868), (203, 45799), (205, 45784), (207, 45766), (213, 45742), (222, 45670), (227, 45646), (236, 45613), (237, 45610), (239, 45592), (249, 45562), (260, 45502), (262, 45484), (264, 45472), (267, 45427), (268, 45421), (269, 45412), (274, 45382), (275, 45358), (286, 45319), (294, 45274), (298, 45253), (299, 45250), (319, 45181), (323, 45163),

Gene: Axumite\_44 Start: 37985, Stop: 36669, Start Num: 36

Candidate Starts for Axumite\_44:

(Start: 36 @37985 has 1 MA's), (Start: 37 @37982 has 3 MA's), (Start: 121 @37823 has 1 MA's), (124, 37817), (135, 37766), (195, 37511), (202, 37490), (210, 37445), (213, 37433), (236, 37304), (241, 37277), (249, 37253), (256, 37223), (257, 37205), (260, 37193), (264, 37163), (266, 37130), (271, 37085), (275, 37052), (279, 37019), (283, 36992), (292, 36947), (293, 36941), (298, 36914), (299, 36911), (310, 36863), (346, 36701),

Gene: BFK20\_ORF40 Start: 30567, Stop: 29512, Start Num: 112

Candidate Starts for BFK20\_ORF40:

(97, 30639), (Start: 100 @30630 has 1 MA's), (112, 30567), (Start: 118 @30540 has 5 MA's), (137, 30456), (166, 30288), (206, 30213), (227, 30084), (237, 30048), (243, 30015), (266, 29880), (267, 29868), (271, 29835), (275, 29802), (281, 29784), (283, 29775), (291, 29730), (301, 29682), (336, 29553), (339, 29532),

Gene: BabyGotBac\_45 Start: 36175, Stop: 34985, Start Num: 92

Candidate Starts for BabyGotBac\_45:

(55, 36394), (66, 36343), (74, 36286), (Start: 92 @36175 has 5 MA's), (Start: 99 @36151 has 5 MA's), (114, 36112), (126, 36073), (136, 36028), (138, 36007), (154, 35902), (155, 35896), (163, 35851), (167, 35839), (199, 35782), (204, 35776), (212, 35731), (215, 35713), (225, 35641), (233, 35611), (240, 35575), (241, 35572), (244, 35563), (291, 35287), (293, 35278), (302, 35233), (306, 35209), (308, 35200), (316, 35167), (329, 35110), (334, 35092), (347, 34999), (348, 34996),

Gene: Badfish\_52 Start: 45396, Stop: 43993, Start Num: 65

Candidate Starts for Badfish\_52:

(10, 45774), (12, 45729), (18, 45687), (Start: 27 @45606 has 5 MA's), (Start: 34 @45561 has 34 MA's), (Start: 65 @45396 has 226 MA's), (Start: 67 @45393 has 65 MA's), (Start: 68 @45387 has 1 MA's), (73, 45345), (86, 45273), (93, 45252), (Start: 121 @45156 has 1 MA's), (135, 45105), (147, 45039), (148, 45036), (153, 44985), (167, 44919), (171, 44907), (181, 44871), (197, 44826), (205, 44796), (212, 44757), (217, 44718), (221, 44685), (222, 44682), (227, 44658), (236, 44625), (239, 44604), (249, 44574), (265, 44460), (269, 44418), (271, 44397), (275, 44364), (285, 44292), (286, 44286), (295, 44238), (304, 44193), (310, 44169), (314, 44154), (323, 44130),

Gene: Bae\_50 Start: 46015, Stop: 44636, Start Num: 65

Candidate Starts for Bae\_50:

(Start: 65 @46015 has 226 MA's), (Start: 70 @45997 has 2 MA's), (Start: 121 @45784 has 1 MA's), (130, 45754), (158, 45589), (169, 45547), (174, 45529), (179, 45514), (180, 45511), (200, 45463), (209, 45412), (222, 45325), (225, 45310), (227, 45301), (241, 45241), (249, 45217), (251, 45214), (263, 45136), (267, 45082), (271, 45049), (275, 45016), (277, 44998), (285, 44944), (293, 44899), (298, 44872), (319, 44791), (338, 44710),

Gene: Baloo\_49 Start: 44885, Stop: 43263, Start Num: 33

Candidate Starts for Baloo\_49:

(16, 45002), (20, 44996), (21, 44981), (Start: 33 @44885 has 9 MA's), (Start: 34 @44876 has 34 MA's), (51, 44780), (Start: 70 @44702 has 2 MA's), (87, 44567), (Start: 121 @44408 has 1 MA's), (127, 44393), (129, 44381), (135, 44351), (144, 44309), (153, 44231), (166, 44165), (167, 44162), (188, 44099), (195, 44066), (197, 44057), (216, 43964), (222, 43916), (225, 43901), (227, 43892), (241, 43832), (249, 43808), (264, 43718), (275, 43607), (283, 43574), (284, 43571), (287, 43556), (292, 43535), (298, 43502),

Gene: Bananafish\_50 Start: 44861, Stop: 43494, Start Num: 67

Candidate Starts for Bananafish\_50:

(Start: 67 @44861 has 65 MA's), (75, 44798), (77, 44783), (108, 44672), (120, 44621), (134, 44573), (142, 44525), (164, 44384), (167, 44375), (190, 44330), (192, 44324), (193, 44318), (197, 44306), (217, 44201), (221, 44168), (227, 44141), (236, 44108), (241, 44081), (249, 44057), (253, 44030), (258, 44003), (266, 43928), (271, 43883), (275, 43850), (282, 43829), (283, 43823), (289, 43790), (291, 43781), (293, 43772), (335, 43610), (338, 43592), (346, 43535),

Gene: Banjo\_50 Start: 44927, Stop: 43524, Start Num: 65

Candidate Starts for Banjo\_50:

(10, 45305), (12, 45260), (18, 45218), (Start: 27 @45137 has 5 MA's), (Start: 34 @45092 has 34 MA's), (Start: 65 @44927 has 226 MA's), (Start: 67 @44924 has 65 MA's), (Start: 68 @44918 has 1 MA's), (73, 44876), (86, 44804), (93, 44783), (Start: 121 @44687 has 1 MA's), (135, 44636), (147, 44570), (148, 44567), (153, 44516), (167, 44450), (171, 44438), (181, 44402), (197, 44357), (205, 44327), (212, 44288), (217, 44249), (221, 44216), (222, 44213), (227, 44189), (236, 44156), (239, 44135), (249, 44105), (265, 43991), (269, 43949), (271, 43928), (275, 43895), (285, 43823), (286, 43817), (295, 43769), (304, 43724), (310, 43700), (314, 43685), (323, 43661),

Gene: Basato\_52 Start: 45512, Stop: 44109, Start Num: 64

Candidate Starts for Basato\_52:

(Start: 34 @45674 has 34 MA's), (Start: 64 @45512 has 26 MA's), (Start: 67 @45509 has 65 MA's), (73, 45461), (86, 45389), (93, 45368), (Start: 121 @45272 has 1 MA's), (135, 45221), (147, 45155), (148, 45152), (153, 45101), (167, 45035), (171, 45023), (181, 44987), (197, 44942), (205, 44912), (212, 44873), (217, 44834), (221, 44801), (222, 44798), (227, 44774), (236, 44741), (239, 44720), (249, 44690), (265, 44576), (269, 44534), (271, 44513), (275, 44480), (285, 44408), (286, 44402), (295, 44354), (304, 44309), (310, 44285), (314, 44270), (323, 44246),

Gene: BatteryCK\_50 Start: 44870, Stop: 43467, Start Num: 65

Candidate Starts for BatteryCK\_50:

(Start: 34 @45035 has 34 MA's), (Start: 65 @44870 has 226 MA's), (Start: 67 @44867 has 65 MA's), (Start: 68 @44861 has 1 MA's), (73, 44819), (86, 44747), (93, 44726), (Start: 121 @44630 has 1 MA's), (135, 44579), (147, 44513), (148, 44510), (153, 44459), (167, 44393), (171, 44381), (181, 44345), (197, 44300), (205, 44270), (212, 44231), (217, 44192), (221, 44159), (222, 44156), (224, 44150), (227, 44132), (236, 44099), (239, 44078), (249, 44048), (265, 43934), (269, 43892), (271, 43871), (275, 43838), (285, 43766), (286, 43760), (295, 43712), (304, 43667), (310, 43643), (314, 43628), (323, 43604),

Gene: BayC\_44 Start: 36172, Stop: 34982, Start Num: 92

Candidate Starts for BayC\_44:

(55, 36391), (66, 36340), (74, 36283), (Start: 92 @36172 has 5 MA's), (Start: 99 @36148 has 5 MA's), (114, 36109), (126, 36070), (136, 36025), (138, 36004), (154, 35899), (155, 35893), (163, 35848), (167, 35836), (199, 35779), (204, 35773), (212, 35728), (215, 35710), (225, 35638), (233, 35608), (240, 35572), (241, 35569), (244, 35560), (291, 35284), (293, 35275), (302, 35230), (306, 35206), (308, 35197), (316, 35164), (329, 35107), (334, 35089), (347, 34996), (348, 34993),

Gene: Beaglebox\_50 Start: 44948, Stop: 43545, Start Num: 65

Candidate Starts for Beaglebox\_50:

(10, 45326), (12, 45281), (18, 45239), (Start: 27 @45158 has 5 MA's), (Start: 34 @45113 has 34 MA's), (Start: 65 @44948 has 226 MA's), (Start: 67 @44945 has 65 MA's), (Start: 68 @44939 has 1 MA's), (73, 44897), (86, 44825), (93, 44804), (Start: 121 @44708 has 1 MA's), (135, 44657), (147, 44591), (148, 44588), (153, 44537), (167, 44471), (171, 44459), (181, 44423), (197, 44378), (205, 44348), (212, 44309), (217, 44270), (221, 44237), (222, 44234), (227, 44210), (236, 44177), (239, 44156), (249, 44126), (265, 44012), (269, 43970), (271, 43949), (275, 43916), (285, 43844), (286, 43838), (295, 43790), (304, 43745), (310, 43721), (314, 43706), (323, 43682),

Gene: Ben11\_48 Start: 44706, Stop: 43084, Start Num: 33

Candidate Starts for Ben11\_48:

(16, 44823), (20, 44817), (21, 44802), (Start: 33 @44706 has 9 MA's), (Start: 34 @44697 has 34 MA's), (51, 44601), (Start: 70 @44523 has 2 MA's), (87, 44388), (Start: 121 @44229 has 1 MA's), (127, 44214), (129, 44202), (135, 44172), (144, 44130), (153, 44052), (166, 43986), (167, 43983), (188, 43920), (195, 43887), (197, 43878), (216, 43785), (222, 43737), (225, 43722), (227, 43713), (241, 43653), (249, 43629), (264, 43539), (275, 43428), (283, 43395), (284, 43392), (287, 43377), (292, 43356), (298, 43323),

Gene: Bernardo\_50 Start: 45419, Stop: 43809, Start Num: 34

Candidate Starts for Bernardo\_50:

(16, 45548), (20, 45542), (21, 45527), (Start: 33 @45428 has 9 MA's), (Start: 34 @45419 has 34 MA's), (51, 45323), (Start: 70 @45245 has 2 MA's), (83, 45122), (87, 45110), (94, 45086), (98, 45071), (Start: 121 @44954 has 1 MA's), (127, 44939), (129, 44927), (135, 44897), (144, 44855), (153, 44777), (188, 44645), (195, 44612), (197, 44603), (216, 44510), (222, 44462), (225, 44447), (227, 44438), (236, 44405), (241, 44378), (249, 44354), (264, 44264), (275, 44153), (283, 44120), (284, 44117), (287, 44102), (292, 44081), (298, 44048),

Gene: BiggityBass\_44 Start: 40224, Stop: 38959, Start Num: 40

Candidate Starts for BiggityBass\_44:

(Start: 40 @40224 has 6 MA's), (44, 40206), (50, 40185), (Start: 121 @40098 has 1 MA's), (124, 40092), (129, 40071), (135, 40041), (196, 39783), (197, 39777), (202, 39765), (213, 39708), (224, 39630), (225, 39621), (236, 39579), (241, 39552), (249, 39528), (260, 39468), (267, 39393), (271, 39360), (275, 39327), (276, 39318), (279, 39294), (282, 39282), (283, 39267), (286, 39255), (293, 39216), (298, 39189), (301, 39177), (330, 39069), (331, 39066), (338, 39033),

Gene: BirdsNest\_53 Start: 44482, Stop: 43088, Start Num: 39

Candidate Starts for BirdsNest\_53:

(Start: 39 @44482 has 1 MA's), (49, 44434), (63, 44356), (123, 44215), (135, 44167), (153, 44047), (155, 44038), (167, 43981), (184, 43924), (212, 43819), (213, 43816), (222, 43744), (227, 43720), (260, 43570), (271, 43453), (275, 43420), (276, 43411), (283, 43393), (286, 43381), (301, 43303), (310, 43264), (348, 43096),

Gene: Bishoperium\_50 Start: 44942, Stop: 43539, Start Num: 65

Candidate Starts for Bishoperium\_50:

(Start: 34 @45107 has 34 MA's), (Start: 65 @44942 has 226 MA's), (Start: 67 @44939 has 65 MA's), (Start: 68 @44933 has 1 MA's), (73, 44891), (86, 44819), (93, 44798), (Start: 121 @44702 has 1 MA's), (135, 44651), (147, 44585), (148, 44582), (153, 44531), (167, 44465), (171, 44453), (181, 44417), (197, 44372), (205, 44342), (212, 44303), (217, 44264), (221, 44231), (222, 44228), (227, 44204), (236, 44171), (239, 44150), (249, 44120), (265, 44006), (269, 43964), (271, 43943), (275, 43910), (285, 43838), (286, 43832), (295, 43784), (304, 43739), (310, 43715), (314, 43700), (323, 43676),

Gene: BlackStallion\_52 Start: 45402, Stop: 43999, Start Num: 65

Candidate Starts for BlackStallion\_52:

(10, 45780), (12, 45735), (18, 45693), (Start: 27 @45612 has 5 MA's), (Start: 34 @45567 has 34 MA's), (Start: 65 @45402 has 226 MA's), (Start: 67 @45399 has 65 MA's), (Start: 68 @45393 has 1 MA's), (73, 45351), (86, 45279), (93, 45258), (Start: 121 @45162 has 1 MA's), (135, 45111), (147, 45045), (148, 45042), (153, 44991), (167, 44925), (171, 44913), (181, 44877), (197, 44832), (205, 44802), (212, 44763), (217, 44724), (221, 44691), (222, 44688), (227, 44664), (236, 44631), (239, 44610), (249, 44580), (265, 44466), (269, 44424), (271, 44403), (275, 44370), (285, 44298), (286, 44292), (295, 44244), (304, 44199), (310, 44175), (314, 44160), (323, 44136),

Gene: Blocker23\_50 Start: 44979, Stop: 43612, Start Num: 67

Candidate Starts for Blocker23\_50:

(Start: 67 @44979 has 65 MA's), (75, 44916), (77, 44901), (108, 44790), (120, 44739), (134, 44691), (142, 44643), (164, 44502), (167, 44493), (190, 44448), (192, 44442), (193, 44436), (197, 44424), (217, 44319), (221, 44286), (227, 44259), (236, 44226), (241, 44199), (249, 44175), (253, 44148), (258, 44121), (266, 44046), (271, 44001), (275, 43968), (282, 43947), (283, 43941), (289, 43908), (293, 43890), (335, 43728), (338, 43710), (346, 43653),

Gene: BlueHusk\_51 Start: 44748, Stop: 43345, Start Num: 65

Candidate Starts for BlueHusk\_51:

(10, 45126), (12, 45081), (18, 45039), (Start: 27 @44958 has 5 MA's), (Start: 34 @44913 has 34 MA's), (Start: 65 @44748 has 226 MA's), (Start: 67 @44745 has 65 MA's), (Start: 68 @44739 has 1 MA's), (73, 44697), (86, 44625), (93, 44604), (Start: 121 @44508 has 1 MA's), (135, 44457), (147, 44391), (148, 44388), (153, 44337), (167, 44271), (171, 44259), (181, 44223), (197, 44178), (205, 44148), (212, 44109), (217, 44070), (221, 44037), (222, 44034), (227, 44010), (236, 43977), (239, 43956), (249, 43926), (265, 43812), (269, 43770), (271, 43749), (275, 43716), (285, 43644), (286, 43638), (295, 43590), (304, 43545), (310, 43521), (314, 43506), (323, 43482),

Gene: Bluephacebaby\_50 Start: 44945, Stop: 43542, Start Num: 65

Candidate Starts for Bluephacebaby\_50:

(10, 45323), (12, 45278), (18, 45236), (Start: 27 @45155 has 5 MA's), (Start: 34 @45110 has 34 MA's), (Start: 65 @44945 has 226 MA's), (Start: 67 @44942 has 65 MA's), (Start: 68 @44936 has 1 MA's), (73, 44894), (86, 44822), (93, 44801), (Start: 121 @44705 has 1 MA's), (135, 44654), (147, 44588), (148, 44585), (153, 44534), (167, 44468), (171, 44456), (181, 44420), (197, 44375), (205, 44345), (212, 44306), (217, 44267), (221, 44234), (222, 44231), (227, 44207), (236, 44174), (239,

44153), (249, 44123), (265, 44009), (269, 43967), (271, 43946), (275, 43913), (285, 43841), (286, 43835), (295, 43787), (304, 43742), (310, 43718), (314, 43703), (323, 43679),

Gene: BobbyK\_47 Start: 45708, Stop: 44368, Start Num: 65

Candidate Starts for BobbyK\_47:

(Start: 64 @45711 has 26 MA's), (Start: 65 @45708 has 226 MA's), (Start: 68 @45699 has 1 MA's), (69, 45693), (76, 45642), (116, 45495), (130, 45450), (135, 45429), (157, 45288), (161, 45264), (167, 45243), (168, 45240), (173, 45225), (176, 45210), (203, 45141), (213, 45084), (225, 44997), (227, 44988), (236, 44955), (237, 44952), (239, 44934), (249, 44904), (260, 44844), (262, 44826), (264, 44814), (267, 44769), (268, 44763), (269, 44754), (271, 44733), (274, 44724), (275, 44700), (286, 44661), (298, 44595), (299, 44592), (319, 44523), (323, 44505),

Gene: Boehler\_51 Start: 45248, Stop: 43848, Start Num: 67

Candidate Starts for Boehler\_51:

(10, 45629), (12, 45584), (18, 45542), (Start: 27 @45461 has 5 MA's), (Start: 34 @45416 has 34 MA's), (Start: 65 @45251 has 226 MA's), (Start: 67 @45248 has 65 MA's), (Start: 68 @45242 has 1 MA's), (73, 45200), (86, 45128), (93, 45107), (Start: 121 @45011 has 1 MA's), (135, 44960), (147, 44894), (148, 44891), (153, 44840), (167, 44774), (171, 44762), (181, 44726), (197, 44681), (205, 44651), (212, 44612), (217, 44573), (221, 44540), (222, 44537), (227, 44513), (236, 44480), (239, 44459), (249, 44429), (269, 44273), (271, 44252), (275, 44219), (285, 44147), (286, 44141), (295, 44093), (304, 44048), (310, 44024), (314, 44009), (323, 43985),

Gene: Boyle\_50 Start: 44994, Stop: 43627, Start Num: 67

Candidate Starts for Boyle\_50:

(Start: 67 @44994 has 65 MA's), (75, 44931), (77, 44916), (108, 44805), (120, 44754), (134, 44706), (142, 44658), (164, 44517), (167, 44508), (190, 44463), (192, 44457), (193, 44451), (197, 44439), (217, 44334), (221, 44301), (227, 44274), (236, 44241), (241, 44214), (249, 44190), (253, 44163), (258, 44136), (266, 44061), (271, 44016), (275, 43983), (282, 43962), (283, 43956), (289, 43923), (291, 43914), (293, 43905), (335, 43743), (338, 43725), (346, 43668),

Gene: Briakila\_50 Start: 45645, Stop: 44032, Start Num: 34

Candidate Starts for Briakila\_50:

(16, 45771), (20, 45765), (21, 45750), (Start: 33 @45654 has 9 MA's), (Start: 34 @45645 has 34 MA's), (51, 45549), (Start: 70 @45471 has 2 MA's), (87, 45336), (Start: 121 @45177 has 1 MA's), (127, 45162), (129, 45150), (135, 45120), (144, 45078), (153, 45000), (166, 44934), (167, 44931), (188, 44868), (195, 44835), (197, 44826), (216, 44733), (222, 44685), (223, 44682), (225, 44670), (227, 44661), (241, 44601), (249, 44577), (264, 44487), (275, 44376), (283, 44343), (284, 44340), (287, 44325), (292, 44304), (298, 44271),

Gene: Brilliant\_51 Start: 44944, Stop: 43541, Start Num: 65

Candidate Starts for Brilliant\_51:

(Start: 34 @45109 has 34 MA's), (Start: 65 @44944 has 226 MA's), (Start: 67 @44941 has 65 MA's), (Start: 68 @44935 has 1 MA's), (73, 44893), (86, 44821), (93, 44800), (Start: 121 @44704 has 1 MA's), (135, 44653), (147, 44587), (148, 44584), (151, 44560), (153, 44533), (167, 44467), (171, 44455), (181, 44419), (197, 44374), (205, 44344), (212, 44305), (217, 44266), (221, 44233), (222, 44230), (227, 44206), (236, 44173), (239, 44152), (249, 44122), (265, 44008), (269, 43966), (271, 43945), (275, 43912), (285, 43840), (286, 43834), (295, 43786), (304, 43741), (310, 43717), (314, 43702), (323, 43678),

Gene: BrownCNA\_48 Start: 45990, Stop: 44647, Start Num: 64

Candidate Starts for BrownCNA\_48:

(Start: 64 @45990 has 26 MA's), (Start: 65 @45987 has 226 MA's), (Start: 68 @45978 has 1 MA's), (69, 45972), (76, 45921), (116, 45774), (135, 45708), (157, 45567), (161, 45543), (167, 45522), (168,

45519), (173, 45504), (176, 45489), (203, 45420), (207, 45387), (213, 45363), (222, 45291), (225, 45276), (227, 45267), (236, 45234), (237, 45231), (239, 45213), (249, 45183), (260, 45123), (262, 45105), (264, 45093), (266, 45060), (267, 45048), (268, 45042), (269, 45033), (271, 45012), (274, 45003), (275, 44979), (286, 44940), (298, 44874), (299, 44871), (314, 44808), (319, 44802), (323, 44784),

Gene: Brownie5\_50 Start: 45010, Stop: 43643, Start Num: 67

Candidate Starts for Brownie5\_50:

(Start: 67 @45010 has 65 MA's), (75, 44947), (77, 44932), (108, 44821), (120, 44770), (134, 44722), (142, 44674), (164, 44533), (167, 44524), (190, 44479), (192, 44473), (193, 44467), (197, 44455), (217, 44350), (221, 44317), (225, 44299), (227, 44290), (236, 44257), (241, 44230), (249, 44206), (253, 44179), (258, 44152), (266, 44077), (271, 44032), (275, 43999), (282, 43978), (283, 43972), (289, 43939), (291, 43930), (293, 43921), (335, 43759), (338, 43741), (346, 43684),

Gene: Buckeye\_51 Start: 45265, Stop: 43862, Start Num: 65

Candidate Starts for Buckeye\_51:

(10, 45643), (12, 45598), (18, 45556), (Start: 27 @45475 has 5 MA's), (Start: 34 @45430 has 34 MA's), (Start: 65 @45265 has 226 MA's), (Start: 67 @45262 has 65 MA's), (Start: 68 @45256 has 1 MA's), (73, 45214), (86, 45142), (93, 45121), (Start: 121 @45025 has 1 MA's), (135, 44974), (147, 44908), (148, 44905), (153, 44854), (167, 44788), (171, 44776), (181, 44740), (197, 44695), (205, 44665), (212, 44626), (217, 44587), (221, 44554), (222, 44551), (227, 44527), (236, 44494), (239, 44473), (249, 44443), (265, 44329), (269, 44287), (271, 44266), (275, 44233), (285, 44161), (286, 44155), (295, 44107), (304, 44062), (310, 44038), (314, 44023), (323, 43999),

Gene: Burr\_50 Start: 44939, Stop: 43536, Start Num: 65

Candidate Starts for Burr\_50:

(10, 45317), (12, 45272), (18, 45230), (Start: 27 @45149 has 5 MA's), (Start: 34 @45104 has 34 MA's), (Start: 65 @44939 has 226 MA's), (Start: 67 @44936 has 65 MA's), (Start: 68 @44930 has 1 MA's), (73, 44888), (86, 44816), (93, 44795), (Start: 121 @44699 has 1 MA's), (135, 44648), (147, 44582), (148, 44579), (153, 44528), (167, 44462), (171, 44450), (181, 44414), (197, 44369), (205, 44339), (212, 44300), (217, 44261), (221, 44228), (222, 44225), (227, 44201), (236, 44168), (239, 44147), (249, 44117), (265, 44003), (269, 43961), (271, 43940), (275, 43907), (285, 43835), (286, 43829), (295, 43781), (304, 43736), (310, 43712), (314, 43697), (323, 43673),

Gene: CRB2\_52 Start: 48176, Stop: 46818, Start Num: 61

Candidate Starts for CRB2\_52:

(8, 48560), (9, 48554), (13, 48461), (31, 48338), (Start: 61 @48176 has 2 MA's), (Start: 70 @48149 has 2 MA's), (Start: 121 @47927 has 1 MA's), (125, 47918), (150, 47786), (167, 47690), (176, 47657), (195, 47618), (213, 47540), (222, 47468), (225, 47453), (227, 47444), (234, 47417), (236, 47411), (239, 47390), (240, 47387), (262, 47282), (264, 47270), (283, 47129), (294, 47072), (298, 47051), (299, 47048), (310, 47000), (319, 46979), (346, 46841),

Gene: CaiB\_47 Start: 40311, Stop: 38920, Start Num: 27

Candidate Starts for CaiB\_47:

(23, 40341), (Start: 27 @40311 has 5 MA's), (31, 40284), (Start: 41 @40233 has 1 MA's), (71, 40089), (124, 40083), (133, 40050), (135, 40032), (141, 39999), (143, 39993), (153, 39912), (155, 39903), (168, 39843), (194, 39774), (209, 39711), (219, 39639), (221, 39627), (225, 39609), (227, 39600), (249, 39516), (256, 39486), (259, 39459), (260, 39456), (271, 39348), (276, 39306), (278, 39273), (283, 39228), (286, 39216), (292, 39183), (293, 39177), (298, 39150),

Gene: Calamitous\_50 Start: 44860, Stop: 43493, Start Num: 67

Candidate Starts for Calamitous\_50:



(Start: 67 @44860 has 65 MA's), (75, 44797), (77, 44782), (108, 44671), (120, 44620), (134, 44572), (142, 44524), (164, 44383), (167, 44374), (190, 44329), (192, 44323), (193, 44317), (197, 44305), (217, 44200), (221, 44167), (227, 44140), (236, 44107), (241, 44080), (249, 44056), (253, 44029), (258, 44002), (266, 43927), (271, 43882), (275, 43849), (282, 43828), (283, 43822), (289, 43789), (291, 43780), (293, 43771), (319, 43672), (335, 43609), (338, 43591), (346, 43534),

Gene: CamL\_51 Start: 45234, Stop: 43831, Start Num: 65

Candidate Starts for CamL\_51:

(10, 45612), (12, 45567), (18, 45525), (Start: 27 @45444 has 5 MA's), (Start: 34 @45399 has 34 MA's), (Start: 65 @45234 has 226 MA's), (Start: 67 @45231 has 65 MA's), (Start: 68 @45225 has 1 MA's), (73, 45183), (86, 45111), (93, 45090), (Start: 121 @44994 has 1 MA's), (135, 44943), (147, 44877), (148, 44874), (153, 44823), (167, 44757), (171, 44745), (181, 44709), (197, 44664), (205, 44634), (212, 44595), (217, 44556), (221, 44523), (222, 44520), (227, 44496), (236, 44463), (239, 44442), (249, 44412), (265, 44298), (269, 44256), (271, 44235), (275, 44202), (285, 44130), (286, 44124), (295, 44076), (304, 44031), (310, 44007), (314, 43992), (323, 43968),

Gene: CampRoach\_52 Start: 45368, Stop: 43965, Start Num: 65

Candidate Starts for CampRoach\_52:

(Start: 65 @45368 has 226 MA's), (Start: 67 @45365 has 65 MA's), (Start: 68 @45359 has 1 MA's), (73, 45317), (86, 45245), (93, 45224), (Start: 121 @45128 has 1 MA's), (135, 45077), (147, 45011), (148, 45008), (153, 44957), (167, 44891), (171, 44879), (181, 44843), (197, 44798), (205, 44768), (212, 44729), (217, 44690), (221, 44657), (222, 44654), (224, 44648), (227, 44630), (236, 44597), (239, 44576), (249, 44546), (265, 44432), (269, 44390), (271, 44369), (275, 44336), (285, 44264), (286, 44258), (295, 44210), (304, 44165), (310, 44141), (314, 44126), (323, 44102),

Gene: Cannibal\_51 Start: 45217, Stop: 43814, Start Num: 65

Candidate Starts for Cannibal\_51:

(10, 45595), (12, 45550), (18, 45508), (Start: 27 @45427 has 5 MA's), (Start: 34 @45382 has 34 MA's), (Start: 65 @45217 has 226 MA's), (Start: 67 @45214 has 65 MA's), (Start: 68 @45208 has 1 MA's), (73, 45166), (86, 45094), (93, 45073), (Start: 121 @44977 has 1 MA's), (135, 44926), (147, 44860), (148, 44857), (153, 44806), (167, 44740), (171, 44728), (181, 44692), (197, 44647), (205, 44617), (212, 44578), (217, 44539), (221, 44506), (222, 44503), (227, 44479), (236, 44446), (239, 44425), (249, 44395), (265, 44281), (269, 44239), (271, 44218), (275, 44185), (285, 44113), (286, 44107), (295, 44059), (304, 44014), (310, 43990), (314, 43975), (323, 43951),

Gene: Carthage\_49 Start: 44164, Stop: 42761, Start Num: 65

Candidate Starts for Carthage\_49:

(Start: 34 @44329 has 34 MA's), (Start: 65 @44164 has 226 MA's), (Start: 67 @44161 has 65 MA's), (Start: 68 @44155 has 1 MA's), (73, 44113), (86, 44041), (93, 44020), (Start: 121 @43924 has 1 MA's), (135, 43873), (147, 43807), (148, 43804), (153, 43753), (167, 43687), (171, 43675), (181, 43639), (197, 43594), (205, 43564), (212, 43525), (217, 43486), (221, 43453), (222, 43450), (224, 43444), (227, 43426), (236, 43393), (239, 43372), (249, 43342), (265, 43228), (269, 43186), (271, 43165), (275, 43132), (285, 43060), (286, 43054), (295, 43006), (304, 42961), (310, 42937), (314, 42922), (323, 42898),

Gene: Casbah\_48 Start: 44727, Stop: 43114, Start Num: 34

Candidate Starts for Casbah\_48:

(16, 44853), (20, 44847), (21, 44832), (Start: 33 @44736 has 9 MA's), (Start: 34 @44727 has 34 MA's), (51, 44631), (Start: 70 @44553 has 2 MA's), (87, 44418), (Start: 121 @44259 has 1 MA's), (127, 44244), (129, 44232), (135, 44202), (144, 44160), (153, 44082), (188, 43950), (195, 43917), (197, 43908), (216, 43815), (222, 43767), (225, 43752), (227, 43743), (241, 43683), (249, 43659), (264, 43569), (275, 43458), (283, 43425), (284, 43422), (287, 43407), (292, 43386), (298, 43353),

Gene: ChaChing\_49 Start: 44890, Stop: 43277, Start Num: 34

Candidate Starts for ChaChing\_49:

(16, 45016), (20, 45010), (21, 44995), (Start: 33 @44899 has 9 MA's), (Start: 34 @44890 has 34 MA's), (51, 44794), (Start: 70 @44716 has 2 MA's), (87, 44581), (Start: 121 @44422 has 1 MA's), (127, 44407), (129, 44395), (135, 44365), (144, 44323), (153, 44245), (166, 44179), (167, 44176), (188, 44113), (195, 44080), (197, 44071), (216, 43978), (222, 43930), (225, 43915), (227, 43906), (241, 43846), (249, 43822), (264, 43732), (275, 43621), (283, 43588), (284, 43585), (287, 43570), (292, 43549), (298, 43516),

Gene: Chaelin\_51 Start: 44940, Stop: 43537, Start Num: 65

Candidate Starts for Chaelin\_51:

(10, 45318), (12, 45273), (18, 45231), (Start: 27 @45150 has 5 MA's), (Start: 34 @45105 has 34 MA's), (Start: 65 @44940 has 226 MA's), (Start: 67 @44937 has 65 MA's), (Start: 68 @44931 has 1 MA's), (73, 44889), (86, 44817), (93, 44796), (Start: 121 @44700 has 1 MA's), (135, 44649), (147, 44583), (148, 44580), (153, 44529), (167, 44463), (171, 44451), (181, 44415), (197, 44370), (205, 44340), (212, 44301), (217, 44262), (221, 44229), (222, 44226), (227, 44202), (236, 44169), (239, 44148), (249, 44118), (265, 44004), (269, 43962), (271, 43941), (275, 43908), (285, 43836), (286, 43830), (295, 43782), (304, 43737), (310, 43713), (314, 43698), (323, 43674),

Gene: Chah\_53 Start: 45395, Stop: 43992, Start Num: 65

Candidate Starts for Chah\_53:

(10, 45773), (12, 45728), (18, 45686), (Start: 27 @45605 has 5 MA's), (Start: 34 @45560 has 34 MA's), (Start: 65 @45395 has 226 MA's), (Start: 67 @45392 has 65 MA's), (Start: 68 @45386 has 1 MA's), (73, 45344), (86, 45272), (93, 45251), (Start: 121 @45155 has 1 MA's), (135, 45104), (147, 45038), (148, 45035), (153, 44984), (167, 44918), (171, 44906), (181, 44870), (197, 44825), (205, 44795), (212, 44756), (217, 44717), (221, 44684), (222, 44681), (227, 44657), (236, 44624), (239, 44603), (249, 44573), (265, 44459), (269, 44417), (271, 44396), (275, 44363), (285, 44291), (286, 44285), (295, 44237), (304, 44192), (310, 44168), (314, 44153), (323, 44129),

Gene: Chandler\_49 Start: 45657, Stop: 44044, Start Num: 34

Candidate Starts for Chandler\_49:

(16, 45783), (20, 45777), (21, 45762), (Start: 33 @45666 has 9 MA's), (Start: 34 @45657 has 34 MA's), (51, 45561), (Start: 70 @45483 has 2 MA's), (87, 45348), (Start: 121 @45189 has 1 MA's), (127, 45174), (129, 45162), (135, 45132), (144, 45090), (153, 45012), (188, 44880), (195, 44847), (197, 44838), (216, 44745), (222, 44697), (225, 44682), (227, 44673), (236, 44640), (241, 44613), (249, 44589), (264, 44499), (275, 44388), (283, 44355), (284, 44352), (287, 44337), (292, 44316), (298, 44283),

Gene: Charles1\_51 Start: 45225, Stop: 43822, Start Num: 65

Candidate Starts for Charles1\_51:

(Start: 34 @45390 has 34 MA's), (Start: 65 @45225 has 226 MA's), (Start: 67 @45222 has 65 MA's), (Start: 68 @45216 has 1 MA's), (73, 45174), (86, 45102), (93, 45081), (Start: 121 @44985 has 1 MA's), (135, 44934), (147, 44868), (148, 44865), (151, 44841), (153, 44814), (167, 44748), (171, 44736), (181, 44700), (197, 44655), (205, 44625), (212, 44586), (217, 44547), (221, 44514), (222, 44511), (227, 44487), (236, 44454), (239, 44433), (249, 44403), (265, 44289), (269, 44247), (271, 44226), (275, 44193), (285, 44121), (286, 44115), (295, 44067), (304, 44022), (310, 43998), (314, 43983), (323, 43959),

Gene: CharlieGBrown\_50 Start: 44815, Stop: 43412, Start Num: 65

Candidate Starts for CharlieGBrown\_50:

(Start: 34 @44980 has 34 MA's), (Start: 65 @44815 has 226 MA's), (Start: 67 @44812 has 65 MA's), (Start: 68 @44806 has 1 MA's), (73, 44764), (86, 44692), (93, 44671), (Start: 121 @44575 has 1 MA's), (135, 44524), (147, 44458), (148, 44455), (153, 44404), (167, 44338), (171, 44326), (181,

44290), (197, 44245), (205, 44215), (212, 44176), (217, 44137), (221, 44104), (222, 44101), (224, 44095), (227, 44077), (236, 44044), (239, 44023), (249, 43993), (265, 43879), (269, 43837), (271, 43816), (275, 43783), (285, 43711), (286, 43705), (295, 43657), (304, 43612), (310, 43588), (314, 43573), (323, 43549),

Gene: CharlottesWeb\_44 Start: 37656, Stop: 36502, Start Num: 121

Candidate Starts for CharlottesWeb\_44:

(Start: 121 @37656 has 1 MA's), (129, 37629), (135, 37599), (185, 37362), (195, 37344), (209, 37281), (210, 37278), (213, 37266), (236, 37137), (241, 37110), (249, 37086), (257, 37038), (260, 37026), (264, 36996), (271, 36918), (275, 36885), (279, 36852), (283, 36825), (292, 36780), (293, 36774), (298, 36747), (299, 36744), (310, 36696), (346, 36534),

Gene: CheetO\_51 Start: 45257, Stop: 43854, Start Num: 65

Candidate Starts for CheetO\_51:

(Start: 34 @45422 has 34 MA's), (Start: 65 @45257 has 226 MA's), (Start: 67 @45254 has 65 MA's), (Start: 68 @45248 has 1 MA's), (73, 45206), (86, 45134), (93, 45113), (Start: 121 @45017 has 1 MA's), (135, 44966), (147, 44900), (148, 44897), (153, 44846), (167, 44780), (171, 44768), (181, 44732), (197, 44687), (205, 44657), (212, 44618), (217, 44579), (221, 44546), (222, 44543), (227, 44519), (236, 44486), (239, 44465), (249, 44435), (265, 44321), (269, 44279), (271, 44258), (275, 44225), (285, 44153), (286, 44147), (295, 44099), (304, 44054), (310, 44030), (314, 44015), (323, 43991),

Gene: Cher\_50 Start: 44962, Stop: 43559, Start Num: 65

Candidate Starts for Cher\_50:

(10, 45340), (12, 45295), (18, 45253), (Start: 27 @45172 has 5 MA's), (Start: 34 @45127 has 34 MA's), (Start: 65 @44962 has 226 MA's), (Start: 67 @44959 has 65 MA's), (Start: 68 @44953 has 1 MA's), (73, 44911), (86, 44839), (93, 44818), (Start: 121 @44722 has 1 MA's), (135, 44671), (147, 44605), (148, 44602), (153, 44551), (167, 44485), (171, 44473), (181, 44437), (197, 44392), (205, 44362), (212, 44323), (217, 44284), (221, 44251), (222, 44248), (227, 44224), (236, 44191), (239, 44170), (249, 44140), (265, 44026), (269, 43984), (271, 43963), (275, 43930), (285, 43858), (286, 43852), (295, 43804), (304, 43759), (310, 43735), (314, 43720), (323, 43696),

Gene: Childish\_50 Start: 44965, Stop: 43562, Start Num: 65

Candidate Starts for Childish\_50:

(Start: 34 @45130 has 34 MA's), (Start: 65 @44965 has 226 MA's), (Start: 67 @44962 has 65 MA's), (Start: 68 @44956 has 1 MA's), (73, 44914), (86, 44842), (93, 44821), (Start: 121 @44725 has 1 MA's), (135, 44674), (147, 44608), (148, 44605), (151, 44581), (153, 44554), (167, 44488), (171, 44476), (181, 44440), (197, 44395), (205, 44365), (212, 44326), (217, 44287), (221, 44254), (222, 44251), (227, 44227), (236, 44194), (239, 44173), (249, 44143), (265, 44029), (269, 43987), (271, 43966), (275, 43933), (285, 43861), (286, 43855), (295, 43807), (304, 43762), (310, 43738), (314, 43723), (323, 43699),

Gene: Chorkpop\_51 Start: 44973, Stop: 43570, Start Num: 65

Candidate Starts for Chorkpop\_51:

(10, 45351), (12, 45306), (18, 45264), (Start: 27 @45183 has 5 MA's), (Start: 34 @45138 has 34 MA's), (Start: 65 @44973 has 226 MA's), (Start: 67 @44970 has 65 MA's), (Start: 68 @44964 has 1 MA's), (73, 44922), (86, 44850), (93, 44829), (Start: 121 @44733 has 1 MA's), (135, 44682), (147, 44616), (148, 44613), (153, 44562), (167, 44496), (171, 44484), (181, 44448), (197, 44403), (205, 44373), (212, 44334), (217, 44295), (221, 44262), (222, 44259), (227, 44235), (236, 44202), (239, 44181), (249, 44151), (265, 44037), (269, 43995), (271, 43974), (275, 43941), (285, 43869), (286, 43863), (295, 43815), (304, 43770), (310, 43746), (314, 43731), (323, 43707),

Gene: ChrisnMich\_46 Start: 44677, Stop: 43334, Start Num: 64

Candidate Starts for ChrisnMich\_46:

(Start: 64 @44677 has 26 MA's), (Start: 65 @44674 has 226 MA's), (Start: 68 @44665 has 1 MA's), (69, 44659), (76, 44608), (116, 44461), (135, 44395), (139, 44371), (167, 44209), (173, 44191), (176, 44176), (178, 44173), (187, 44146), (206, 44083), (207, 44074), (220, 43987), (222, 43978), (225, 43963), (236, 43921), (237, 43918), (239, 43900), (245, 43882), (249, 43870), (255, 43843), (260, 43810), (263, 43789), (264, 43780), (267, 43735), (268, 43729), (269, 43720), (271, 43699), (275, 43666), (286, 43627), (298, 43561), (299, 43558), (319, 43489), (323, 43471),

Gene: Chunky\_51 Start: 45258, Stop: 43858, Start Num: 67

Candidate Starts for Chunky\_51:

(Start: 34 @45426 has 34 MA's), (Start: 65 @45261 has 226 MA's), (Start: 67 @45258 has 65 MA's), (Start: 68 @45252 has 1 MA's), (73, 45210), (86, 45138), (93, 45117), (Start: 121 @45021 has 1 MA's), (135, 44970), (147, 44904), (148, 44901), (153, 44850), (167, 44784), (171, 44772), (181, 44736), (197, 44691), (205, 44661), (212, 44622), (217, 44583), (221, 44550), (222, 44547), (227, 44523), (236, 44490), (239, 44469), (249, 44439), (265, 44325), (269, 44283), (271, 44262), (275, 44229), (285, 44157), (286, 44151), (295, 44103), (304, 44058), (310, 44034), (314, 44019), (323, 43995),

Gene: Chute\_50 Start: 45289, Stop: 43886, Start Num: 64

Candidate Starts for Chute\_50:

(Start: 34 @45451 has 34 MA's), (Start: 64 @45289 has 26 MA's), (Start: 67 @45286 has 65 MA's), (73, 45238), (86, 45166), (93, 45145), (Start: 121 @45049 has 1 MA's), (135, 44998), (147, 44932), (148, 44929), (151, 44905), (153, 44878), (167, 44812), (171, 44800), (181, 44764), (197, 44719), (205, 44689), (212, 44650), (217, 44611), (221, 44578), (222, 44575), (227, 44551), (236, 44518), (239, 44497), (249, 44467), (265, 44353), (269, 44311), (271, 44290), (275, 44257), (285, 44185), (286, 44179), (295, 44131), (304, 44086), (310, 44062), (314, 44047), (323, 44023),

Gene: CloverMinnie\_47 Start: 40251, Stop: 38860, Start Num: 27

Candidate Starts for CloverMinnie\_47:

(7, 40455), (11, 40410), (Start: 27 @40251 has 5 MA's), (31, 40224), (Start: 41 @40173 has 1 MA's), (71, 40029), (124, 40023), (133, 39990), (135, 39972), (141, 39939), (143, 39933), (155, 39843), (168, 39783), (194, 39714), (209, 39651), (219, 39579), (221, 39567), (225, 39549), (227, 39540), (236, 39507), (249, 39456), (256, 39426), (259, 39399), (260, 39396), (271, 39288), (276, 39246), (278, 39213), (283, 39168), (286, 39156), (292, 39123), (293, 39117), (298, 39090),

Gene: Cobra\_51 Start: 45246, Stop: 43843, Start Num: 65

Candidate Starts for Cobra\_51:

(Start: 34 @45411 has 34 MA's), (Start: 65 @45246 has 226 MA's), (Start: 67 @45243 has 65 MA's), (Start: 68 @45237 has 1 MA's), (73, 45195), (86, 45123), (93, 45102), (Start: 121 @45006 has 1 MA's), (135, 44955), (147, 44889), (148, 44886), (153, 44835), (167, 44769), (171, 44757), (181, 44721), (197, 44676), (205, 44646), (212, 44607), (217, 44568), (221, 44535), (222, 44532), (224, 44526), (227, 44508), (236, 44475), (239, 44454), (249, 44424), (265, 44310), (269, 44268), (271, 44247), (275, 44214), (285, 44142), (286, 44136), (295, 44088), (304, 44043), (310, 44019), (314, 44004), (323, 43980),

Gene: Coffee\_50 Start: 44969, Stop: 43602, Start Num: 67

Candidate Starts for Coffee\_50:

(Start: 67 @44969 has 65 MA's), (75, 44906), (77, 44891), (108, 44780), (120, 44729), (134, 44681), (142, 44633), (164, 44492), (167, 44483), (190, 44438), (192, 44432), (193, 44426), (197, 44414), (217, 44309), (221, 44276), (225, 44258), (227, 44249), (236, 44216), (241, 44189), (249, 44165), (253, 44138), (258, 44111), (266, 44036), (271, 43991), (275, 43958), (282, 43937), (283, 43931), (289, 43898), (291, 43889), (293, 43880), (335, 43718), (338, 43700), (346, 43643),

Gene: Colbert\_51 Start: 45310, Stop: 43910, Start Num: 67

Candidate Starts for Colbert\_51:

(10, 45691), (12, 45646), (18, 45604), (Start: 27 @45523 has 5 MA's), (Start: 34 @45478 has 34 MA's), (Start: 65 @45313 has 226 MA's), (Start: 67 @45310 has 65 MA's), (Start: 68 @45304 has 1 MA's), (73, 45262), (86, 45190), (93, 45169), (Start: 121 @45073 has 1 MA's), (135, 45022), (147, 44956), (148, 44953), (153, 44902), (167, 44836), (171, 44824), (181, 44788), (197, 44743), (205, 44713), (212, 44674), (217, 44635), (221, 44602), (222, 44599), (227, 44575), (236, 44542), (239, 44521), (249, 44491), (265, 44377), (269, 44335), (271, 44314), (275, 44281), (285, 44209), (286, 44203), (295, 44155), (304, 44110), (310, 44086), (314, 44071), (323, 44047),

Gene: Coletti\_50 Start: 45289, Stop: 43886, Start Num: 64

Candidate Starts for Coletti\_50:

(Start: 34 @45451 has 34 MA's), (Start: 64 @45289 has 26 MA's), (Start: 67 @45286 has 65 MA's), (73, 45238), (86, 45166), (93, 45145), (Start: 121 @45049 has 1 MA's), (135, 44998), (147, 44932), (148, 44929), (151, 44905), (153, 44878), (167, 44812), (171, 44800), (181, 44764), (197, 44719), (205, 44689), (212, 44650), (217, 44611), (221, 44578), (222, 44575), (227, 44551), (236, 44518), (239, 44497), (249, 44467), (265, 44353), (269, 44311), (271, 44290), (275, 44257), (285, 44185), (286, 44179), (295, 44131), (304, 44086), (310, 44062), (314, 44047), (323, 44023),

Gene: Compostia\_50 Start: 45305, Stop: 43692, Start Num: 34

Candidate Starts for Compostia\_50:

(16, 45431), (20, 45425), (21, 45410), (Start: 33 @45314 has 9 MA's), (Start: 34 @45305 has 34 MA's), (51, 45209), (Start: 70 @45131 has 2 MA's), (87, 44996), (Start: 121 @44837 has 1 MA's), (127, 44822), (129, 44810), (135, 44780), (144, 44738), (153, 44660), (188, 44528), (195, 44495), (197, 44486), (216, 44393), (222, 44345), (225, 44330), (227, 44321), (236, 44288), (241, 44261), (249, 44237), (264, 44147), (275, 44036), (283, 44003), (284, 44000), (287, 43985), (292, 43964), (298, 43931),

Gene: Cooper\_47 Start: 44873, Stop: 43536, Start Num: 68

Candidate Starts for Cooper\_47:

(45, 44969), (Start: 64 @44885 has 26 MA's), (Start: 68 @44873 has 1 MA's), (115, 44672), (135, 44597), (168, 44408), (173, 44393), (176, 44378), (203, 44309), (206, 44285), (207, 44276), (213, 44252), (222, 44180), (225, 44165), (228, 44153), (236, 44123), (237, 44120), (239, 44102), (249, 44072), (255, 44045), (262, 43994), (264, 43982), (267, 43937), (268, 43931), (269, 43922), (275, 43868), (279, 43859), (286, 43829), (298, 43763), (299, 43760), (319, 43691), (323, 43673),

Gene: Cornobble\_50 Start: 44803, Stop: 43400, Start Num: 65

Candidate Starts for Cornobble\_50:

(Start: 34 @44968 has 34 MA's), (Start: 65 @44803 has 226 MA's), (Start: 67 @44800 has 65 MA's), (Start: 68 @44794 has 1 MA's), (73, 44752), (86, 44680), (93, 44659), (Start: 121 @44563 has 1 MA's), (135, 44512), (147, 44446), (148, 44443), (153, 44392), (167, 44326), (171, 44314), (181, 44278), (197, 44233), (205, 44203), (212, 44164), (217, 44125), (221, 44092), (222, 44089), (227, 44065), (236, 44032), (239, 44011), (249, 43981), (265, 43867), (269, 43825), (271, 43804), (275, 43771), (285, 43699), (286, 43693), (295, 43645), (304, 43600), (310, 43576), (314, 43561), (323, 43537),

Gene: Corofin\_49 Start: 44900, Stop: 43287, Start Num: 34

Candidate Starts for Corofin\_49:

(16, 45026), (20, 45020), (21, 45005), (Start: 33 @44909 has 9 MA's), (Start: 34 @44900 has 34 MA's), (51, 44804), (Start: 70 @44726 has 2 MA's), (87, 44591), (Start: 121 @44432 has 1 MA's), (127, 44417), (129, 44405), (135, 44375), (144, 44333), (153, 44255), (188, 44123), (195, 44090), (197, 44081), (216, 43988), (222, 43940), (225, 43925), (227, 43916), (236, 43883), (241, 43856), (249, 43832), (264, 43742), (275, 43631), (283, 43598), (284, 43595), (287, 43580), (292, 43559),

(298, 43526),

Gene: Cosmolli16\_50 Start: 44953, Stop: 43550, Start Num: 64

Candidate Starts for Cosmolli16\_50:

(Start: 64 @44953 has 26 MA's), (Start: 67 @44950 has 65 MA's), (Start: 68 @44944 has 1 MA's), (73, 44902), (86, 44830), (93, 44809), (Start: 121 @44713 has 1 MA's), (135, 44662), (147, 44596), (148, 44593), (153, 44542), (167, 44476), (171, 44464), (181, 44428), (197, 44383), (205, 44353), (212, 44314), (217, 44275), (221, 44242), (222, 44239), (227, 44215), (236, 44182), (239, 44161), (249, 44131), (265, 44017), (269, 43975), (271, 43954), (275, 43921), (285, 43849), (286, 43843), (295, 43795), (304, 43750), (310, 43726), (314, 43711), (323, 43687),

Gene: Craff\_52 Start: 45381, Stop: 43978, Start Num: 65

Candidate Starts for Craff\_52:

(Start: 34 @45546 has 34 MA's), (Start: 65 @45381 has 226 MA's), (Start: 67 @45378 has 65 MA's), (Start: 68 @45372 has 1 MA's), (73, 45330), (86, 45258), (93, 45237), (Start: 121 @45141 has 1 MA's), (135, 45090), (147, 45024), (148, 45021), (151, 44997), (153, 44970), (167, 44904), (171, 44892), (181, 44856), (197, 44811), (205, 44781), (212, 44742), (217, 44703), (221, 44670), (222, 44667), (227, 44643), (236, 44610), (239, 44589), (249, 44559), (265, 44445), (269, 44403), (271, 44382), (275, 44349), (285, 44277), (286, 44271), (295, 44223), (304, 44178), (310, 44154), (314, 44139), (323, 44115),

Gene: Crownjwl\_51 Start: 45019, Stop: 43619, Start Num: 67

Candidate Starts for Crownjwl\_51:

(Start: 64 @45022 has 26 MA's), (Start: 67 @45019 has 65 MA's), (Start: 68 @45013 has 1 MA's), (73, 44971), (86, 44899), (93, 44878), (Start: 121 @44782 has 1 MA's), (135, 44731), (147, 44665), (148, 44662), (153, 44611), (167, 44545), (171, 44533), (181, 44497), (197, 44452), (205, 44422), (212, 44383), (217, 44344), (221, 44311), (222, 44308), (227, 44284), (236, 44251), (239, 44230), (249, 44200), (265, 44086), (269, 44044), (271, 44023), (275, 43990), (285, 43918), (286, 43912), (295, 43864), (304, 43819), (310, 43795), (314, 43780), (323, 43756),

Gene: DaddyDaniels\_51 Start: 44934, Stop: 43531, Start Num: 65

Candidate Starts for DaddyDaniels\_51:

(10, 45312), (12, 45267), (18, 45225), (Start: 27 @45144 has 5 MA's), (Start: 34 @45099 has 34 MA's), (Start: 65 @44934 has 226 MA's), (Start: 67 @44931 has 65 MA's), (Start: 68 @44925 has 1 MA's), (73, 44883), (86, 44811), (93, 44790), (Start: 121 @44694 has 1 MA's), (135, 44643), (147, 44577), (148, 44574), (153, 44523), (167, 44457), (171, 44445), (181, 44409), (197, 44364), (205, 44334), (212, 44295), (217, 44256), (221, 44223), (222, 44220), (227, 44196), (236, 44163), (239, 44142), (249, 44112), (265, 43998), (269, 43956), (271, 43935), (275, 43902), (285, 43830), (286, 43824), (295, 43776), (304, 43731), (310, 43707), (314, 43692), (323, 43668),

Gene: Daffy\_51 Start: 44956, Stop: 43556, Start Num: 67

Candidate Starts for Daffy\_51:

(10, 45337), (12, 45292), (18, 45250), (Start: 27 @45169 has 5 MA's), (Start: 34 @45124 has 34 MA's), (Start: 65 @44959 has 226 MA's), (Start: 67 @44956 has 65 MA's), (Start: 68 @44950 has 1 MA's), (73, 44908), (86, 44836), (93, 44815), (Start: 121 @44719 has 1 MA's), (135, 44668), (147, 44602), (148, 44599), (153, 44548), (167, 44482), (171, 44470), (181, 44434), (197, 44389), (205, 44359), (212, 44320), (217, 44281), (221, 44248), (222, 44245), (227, 44221), (236, 44188), (239, 44167), (249, 44137), (265, 44023), (269, 43981), (271, 43960), (275, 43927), (285, 43855), (286, 43849), (295, 43801), (304, 43756), (310, 43732), (314, 43717), (323, 43693),

Gene: Daisy\_49 Start: 44902, Stop: 43289, Start Num: 34

Candidate Starts for Daisy\_49:

(16, 45028), (20, 45022), (21, 45007), (Start: 33 @44911 has 9 MA's), (Start: 34 @44902 has 34 MA's), (51, 44806), (Start: 70 @44728 has 2 MA's), (87, 44593), (Start: 121 @44434 has 1 MA's), (127, 44419), (129, 44407), (135, 44377), (144, 44335), (153, 44257), (188, 44125), (195, 44092), (197, 44083), (216, 43990), (222, 43942), (225, 43927), (227, 43918), (241, 43858), (249, 43834), (264, 43744), (275, 43633), (283, 43600), (287, 43582), (292, 43561), (298, 43528),

Gene: Daka\_52 Start: 45238, Stop: 43835, Start Num: 65

Candidate Starts for Daka\_52:

(10, 45616), (12, 45571), (18, 45529), (Start: 27 @45448 has 5 MA's), (Start: 34 @45403 has 34 MA's), (Start: 65 @45238 has 226 MA's), (Start: 67 @45235 has 65 MA's), (Start: 68 @45229 has 1 MA's), (73, 45187), (86, 45115), (93, 45094), (Start: 121 @44998 has 1 MA's), (135, 44947), (147, 44881), (148, 44878), (153, 44827), (167, 44761), (171, 44749), (181, 44713), (197, 44668), (205, 44638), (212, 44599), (217, 44560), (221, 44527), (222, 44524), (227, 44500), (236, 44467), (239, 44446), (249, 44416), (265, 44302), (269, 44260), (271, 44239), (275, 44206), (285, 44134), (286, 44128), (295, 44080), (304, 44035), (310, 44011), (314, 43996), (323, 43972),

Gene: Dati\_51 Start: 44962, Stop: 43559, Start Num: 65

Candidate Starts for Dati\_51:

(Start: 34 @45127 has 34 MA's), (Start: 65 @44962 has 226 MA's), (Start: 67 @44959 has 65 MA's), (Start: 68 @44953 has 1 MA's), (73, 44911), (86, 44839), (93, 44818), (Start: 121 @44722 has 1 MA's), (135, 44671), (147, 44605), (148, 44602), (153, 44551), (167, 44485), (171, 44473), (181, 44437), (197, 44392), (205, 44362), (212, 44323), (217, 44284), (221, 44251), (222, 44248), (224, 44242), (227, 44224), (236, 44191), (239, 44170), (249, 44140), (265, 44026), (269, 43984), (271, 43963), (275, 43930), (285, 43858), (286, 43852), (295, 43804), (304, 43759), (310, 43735), (314, 43720), (323, 43696),

Gene: Deenasa\_49 Start: 45637, Stop: 44024, Start Num: 34

Candidate Starts for Deenasa\_49:

(16, 45763), (20, 45757), (21, 45742), (Start: 33 @45646 has 9 MA's), (Start: 34 @45637 has 34 MA's), (51, 45541), (Start: 70 @45463 has 2 MA's), (87, 45328), (Start: 121 @45169 has 1 MA's), (127, 45154), (129, 45142), (135, 45112), (144, 45070), (153, 44992), (166, 44926), (167, 44923), (188, 44860), (195, 44827), (197, 44818), (216, 44725), (222, 44677), (223, 44674), (225, 44662), (227, 44653), (241, 44593), (249, 44569), (264, 44479), (275, 44368), (283, 44335), (284, 44332), (287, 44317), (292, 44296), (298, 44263),

Gene: DelRivs\_50 Start: 44963, Stop: 43563, Start Num: 67

Candidate Starts for DelRivs\_50:

(10, 45344), (12, 45299), (18, 45257), (Start: 27 @45176 has 5 MA's), (Start: 34 @45131 has 34 MA's), (Start: 65 @44966 has 226 MA's), (Start: 67 @44963 has 65 MA's), (Start: 68 @44957 has 1 MA's), (73, 44915), (86, 44843), (93, 44822), (Start: 121 @44726 has 1 MA's), (135, 44675), (147, 44609), (148, 44606), (153, 44555), (167, 44489), (171, 44477), (181, 44441), (197, 44396), (205, 44366), (212, 44327), (217, 44288), (221, 44255), (222, 44252), (227, 44228), (236, 44195), (239, 44174), (249, 44144), (265, 44030), (269, 43988), (271, 43967), (275, 43934), (285, 43862), (286, 43856), (295, 43808), (304, 43763), (310, 43739), (314, 43724), (323, 43700),

Gene: Derpp\_50 Start: 44804, Stop: 43401, Start Num: 65

Candidate Starts for Derpp\_50:

(10, 45182), (12, 45137), (18, 45095), (Start: 27 @45014 has 5 MA's), (Start: 34 @44969 has 34 MA's), (Start: 65 @44804 has 226 MA's), (Start: 67 @44801 has 65 MA's), (Start: 68 @44795 has 1 MA's), (73, 44753), (86, 44681), (93, 44660), (Start: 121 @44564 has 1 MA's), (135, 44513), (147, 44447), (148, 44444), (153, 44393), (167, 44327), (171, 44315), (181, 44279), (197, 44234), (205, 44204), (212, 44165), (217, 44126), (221, 44093), (222, 44090), (224, 44084), (227, 44066), (236, 44033), (239, 44012), (249, 43982), (265, 43868), (269, 43826), (271, 43805), (275, 43772), (285,

43700), (286, 43694), (295, 43646), (304, 43601), (310, 43577), (314, 43562), (323, 43538),

Gene: Devonte\_49 Start: 44865, Stop: 43252, Start Num: 34

Candidate Starts for Devonte\_49:

(16, 44991), (20, 44985), (21, 44970), (Start: 33 @44874 has 9 MA's), (Start: 34 @44865 has 34 MA's), (51, 44769), (Start: 70 @44691 has 2 MA's), (87, 44556), (Start: 121 @44397 has 1 MA's), (127, 44382), (129, 44370), (135, 44340), (144, 44298), (153, 44220), (166, 44154), (167, 44151), (188, 44088), (195, 44055), (197, 44046), (216, 43953), (222, 43905), (223, 43902), (225, 43890), (227, 43881), (241, 43821), (249, 43797), (264, 43707), (275, 43596), (283, 43563), (284, 43560), (287, 43545), (292, 43524), (298, 43491),

Gene: Dice\_53 Start: 44930, Stop: 43527, Start Num: 65

Candidate Starts for Dice\_53:

(10, 45308), (12, 45263), (18, 45221), (Start: 27 @45140 has 5 MA's), (Start: 34 @45095 has 34 MA's), (Start: 65 @44930 has 226 MA's), (Start: 67 @44927 has 65 MA's), (Start: 68 @44921 has 1 MA's), (73, 44879), (86, 44807), (93, 44786), (Start: 121 @44690 has 1 MA's), (135, 44639), (147, 44573), (148, 44570), (153, 44519), (167, 44453), (171, 44441), (181, 44405), (197, 44360), (205, 44330), (212, 44291), (217, 44252), (221, 44219), (222, 44216), (227, 44192), (236, 44159), (239, 44138), (249, 44108), (265, 43994), (269, 43952), (271, 43931), (275, 43898), (285, 43826), (286, 43820), (295, 43772), (304, 43727), (310, 43703), (314, 43688), (323, 43664),

Gene: DigitDog\_50 Start: 45861, Stop: 44476, Start Num: 65

Candidate Starts for DigitDog\_50:

(Start: 65 @45861 has 226 MA's), (Start: 70 @45843 has 2 MA's), (Start: 121 @45624 has 1 MA's), (130, 45594), (158, 45429), (169, 45387), (174, 45369), (179, 45354), (200, 45303), (209, 45252), (222, 45165), (225, 45150), (227, 45141), (241, 45081), (249, 45057), (251, 45054), (263, 44976), (267, 44922), (271, 44889), (275, 44856), (277, 44838), (285, 44784), (292, 44745), (293, 44739), (298, 44712), (319, 44631), (328, 44592), (338, 44550),

Gene: Dingo\_51 Start: 45229, Stop: 43826, Start Num: 65

Candidate Starts for Dingo\_51:

(10, 45607), (12, 45562), (18, 45520), (Start: 27 @45439 has 5 MA's), (Start: 34 @45394 has 34 MA's), (Start: 65 @45229 has 226 MA's), (Start: 67 @45226 has 65 MA's), (Start: 68 @45220 has 1 MA's), (73, 45178), (86, 45106), (93, 45085), (Start: 121 @44989 has 1 MA's), (135, 44938), (147, 44872), (148, 44869), (153, 44818), (167, 44752), (171, 44740), (181, 44704), (197, 44659), (205, 44629), (212, 44590), (217, 44551), (221, 44518), (222, 44515), (227, 44491), (236, 44458), (239, 44437), (249, 44407), (265, 44293), (269, 44251), (271, 44230), (275, 44197), (285, 44125), (286, 44119), (295, 44071), (304, 44026), (310, 44002), (314, 43987), (323, 43963),

Gene: Dione\_50 Start: 44938, Stop: 43535, Start Num: 65

Candidate Starts for Dione\_50:

(Start: 34 @45103 has 34 MA's), (Start: 65 @44938 has 226 MA's), (Start: 67 @44935 has 65 MA's), (Start: 68 @44929 has 1 MA's), (73, 44887), (86, 44815), (93, 44794), (Start: 121 @44698 has 1 MA's), (135, 44647), (147, 44581), (148, 44578), (153, 44527), (167, 44461), (171, 44449), (181, 44413), (197, 44368), (205, 44338), (212, 44299), (217, 44260), (221, 44227), (222, 44224), (227, 44200), (236, 44167), (239, 44146), (249, 44116), (265, 44002), (269, 43960), (271, 43939), (275, 43906), (285, 43834), (286, 43828), (295, 43780), (304, 43735), (310, 43711), (314, 43696), (323, 43672),

Gene: DirtJuice\_51 Start: 45228, Stop: 43825, Start Num: 65

Candidate Starts for DirtJuice\_51:

(10, 45606), (12, 45561), (18, 45519), (Start: 27 @45438 has 5 MA's), (Start: 34 @45393 has 34 MA's), (Start: 65 @45228 has 226 MA's), (Start: 67 @45225 has 65 MA's), (Start: 68 @45219 has 1



MA's), (73, 45177), (86, 45105), (93, 45084), (Start: 121 @44988 has 1 MA's), (135, 44937), (147, 44871), (148, 44868), (153, 44817), (167, 44751), (171, 44739), (181, 44703), (197, 44658), (205, 44628), (212, 44589), (217, 44550), (221, 44517), (222, 44514), (227, 44490), (236, 44457), (239, 44436), (249, 44406), (265, 44292), (269, 44250), (271, 44229), (275, 44196), (285, 44124), (286, 44118), (295, 44070), (304, 44025), (310, 44001), (314, 43986), (323, 43962),

Gene: Doddsville\_51 Start: 44955, Stop: 43555, Start Num: 67

Candidate Starts for Doddsville\_51:

(Start: 34 @45123 has 34 MA's), (Start: 65 @44958 has 226 MA's), (Start: 67 @44955 has 65 MA's), (Start: 68 @44949 has 1 MA's), (73, 44907), (86, 44835), (93, 44814), (Start: 121 @44718 has 1 MA's), (135, 44667), (147, 44601), (148, 44598), (151, 44574), (153, 44547), (167, 44481), (171, 44469), (181, 44433), (197, 44388), (205, 44358), (212, 44319), (217, 44280), (221, 44247), (222, 44244), (224, 44238), (227, 44220), (236, 44187), (239, 44166), (249, 44136), (265, 44022), (269, 43980), (271, 43959), (275, 43926), (285, 43854), (286, 43848), (295, 43800), (304, 43755), (310, 43731), (314, 43716), (323, 43692),

Gene: DoesntMatter\_50 Start: 45231, Stop: 43828, Start Num: 65

Candidate Starts for DoesntMatter\_50:

(Start: 34 @45396 has 34 MA's), (Start: 65 @45231 has 226 MA's), (Start: 67 @45228 has 65 MA's), (Start: 68 @45222 has 1 MA's), (73, 45180), (86, 45108), (93, 45087), (Start: 121 @44991 has 1 MA's), (135, 44940), (147, 44874), (148, 44871), (153, 44820), (167, 44754), (171, 44742), (181, 44706), (197, 44661), (205, 44631), (212, 44592), (217, 44553), (221, 44520), (222, 44517), (227, 44493), (236, 44460), (239, 44439), (249, 44409), (265, 44295), (269, 44253), (271, 44232), (275, 44199), (285, 44127), (286, 44121), (295, 44073), (304, 44028), (310, 44004), (314, 43989), (323, 43965),

Gene: DonSanchon\_50 Start: 44941, Stop: 43538, Start Num: 65

Candidate Starts for DonSanchon\_50:

(10, 45319), (12, 45274), (18, 45232), (Start: 27 @45151 has 5 MA's), (Start: 34 @45106 has 34 MA's), (Start: 65 @44941 has 226 MA's), (Start: 67 @44938 has 65 MA's), (Start: 68 @44932 has 1 MA's), (73, 44890), (86, 44818), (93, 44797), (Start: 121 @44701 has 1 MA's), (135, 44650), (147, 44584), (148, 44581), (151, 44557), (153, 44530), (167, 44464), (171, 44452), (181, 44416), (197, 44371), (205, 44341), (212, 44302), (217, 44263), (221, 44230), (222, 44227), (227, 44203), (236, 44170), (239, 44149), (249, 44119), (265, 44005), (269, 43963), (271, 43942), (275, 43909), (285, 43837), (286, 43831), (295, 43783), (304, 43738), (310, 43714), (314, 43699), (323, 43675),

Gene: Donny\_51 Start: 46147, Stop: 44765, Start Num: 65

Candidate Starts for Donny\_51:

(25, 46372), (Start: 65 @46147 has 226 MA's), (Start: 70 @46129 has 2 MA's), (Start: 121 @45913 has 1 MA's), (130, 45883), (158, 45718), (169, 45676), (174, 45658), (179, 45643), (200, 45592), (222, 45454), (225, 45439), (227, 45430), (238, 45379), (241, 45370), (249, 45346), (251, 45343), (267, 45211), (271, 45178), (275, 45145), (277, 45127), (285, 45073), (293, 45028), (298, 45001), (319, 44920), (323, 44902), (338, 44839),

Gene: DuchessDung\_50 Start: 44230, Stop: 42827, Start Num: 64

Candidate Starts for DuchessDung\_50:

(Start: 34 @44392 has 34 MA's), (Start: 64 @44230 has 26 MA's), (Start: 67 @44227 has 65 MA's), (73, 44179), (86, 44107), (93, 44086), (Start: 121 @43990 has 1 MA's), (135, 43939), (147, 43873), (148, 43870), (151, 43846), (153, 43819), (167, 43753), (171, 43741), (181, 43705), (197, 43660), (205, 43630), (212, 43591), (217, 43552), (221, 43519), (222, 43516), (227, 43492), (236, 43459), (239, 43438), (249, 43408), (269, 43252), (271, 43231), (275, 43198), (285, 43126), (286, 43120), (295, 43072), (304, 43027), (310, 43003), (314, 42988), (323, 42964),

Gene: Duggie\_50 Start: 44957, Stop: 43557, Start Num: 67

Candidate Starts for Duggie\_50:

(Start: 34 @45122 has 34 MA's), (Start: 64 @44960 has 26 MA's), (Start: 67 @44957 has 65 MA's), (73, 44909), (86, 44837), (93, 44816), (Start: 121 @44720 has 1 MA's), (135, 44669), (147, 44603), (148, 44600), (151, 44576), (153, 44549), (167, 44483), (171, 44471), (181, 44435), (197, 44390), (205, 44360), (212, 44321), (217, 44282), (221, 44249), (222, 44246), (224, 44240), (227, 44222), (236, 44189), (239, 44168), (249, 44138), (265, 44024), (269, 43982), (271, 43961), (275, 43928), (285, 43856), (286, 43850), (295, 43802), (304, 43757), (310, 43733), (314, 43718), (323, 43694),

Gene: Durga\_52 Start: 45396, Stop: 43993, Start Num: 65

Candidate Starts for Durga\_52:

(Start: 34 @45561 has 34 MA's), (Start: 65 @45396 has 226 MA's), (Start: 67 @45393 has 65 MA's), (Start: 68 @45387 has 1 MA's), (73, 45345), (86, 45273), (93, 45252), (Start: 121 @45156 has 1 MA's), (135, 45105), (147, 45039), (148, 45036), (153, 44985), (167, 44919), (171, 44907), (181, 44871), (197, 44826), (205, 44796), (212, 44757), (217, 44718), (221, 44685), (222, 44682), (224, 44676), (227, 44658), (236, 44625), (239, 44604), (249, 44574), (265, 44460), (269, 44418), (271, 44397), (275, 44364), (285, 44292), (286, 44286), (295, 44238), (304, 44193), (310, 44169), (314, 44154), (323, 44130),

Gene: Eaglehorse\_50 Start: 44895, Stop: 43528, Start Num: 67

Candidate Starts for Eaglehorse\_50:

(Start: 67 @44895 has 65 MA's), (75, 44832), (77, 44817), (108, 44706), (120, 44655), (134, 44607), (142, 44559), (164, 44418), (167, 44409), (190, 44364), (192, 44358), (193, 44352), (197, 44340), (217, 44235), (221, 44202), (227, 44175), (236, 44142), (241, 44115), (249, 44091), (253, 44064), (258, 44037), (266, 43962), (271, 43917), (275, 43884), (282, 43863), (283, 43857), (289, 43824), (291, 43815), (293, 43806), (335, 43644), (338, 43626), (346, 43569),

Gene: EastView9101\_51 Start: 45797, Stop: 44415, Start Num: 65

Candidate Starts for EastView9101\_51:

(25, 46022), (Start: 65 @45797 has 226 MA's), (Start: 70 @45779 has 2 MA's), (Start: 121 @45563 has 1 MA's), (130, 45533), (158, 45368), (169, 45326), (174, 45308), (179, 45293), (200, 45242), (222, 45104), (227, 45080), (238, 45029), (241, 45020), (249, 44996), (251, 44993), (267, 44861), (271, 44828), (275, 44795), (277, 44777), (285, 44723), (293, 44678), (298, 44651), (319, 44570), (323, 44552), (338, 44489),

Gene: EmiRose\_30 Start: 23905, Stop: 22832, Start Num: 118

Candidate Starts for EmiRose\_30:

(Start: 118 @23905 has 5 MA's), (119, 23899), (148, 23782), (164, 23677), (165, 23674), (219, 23506), (222, 23491), (225, 23476), (235, 23437), (245, 23395), (252, 23362), (256, 23359), (261, 23317), (267, 23257), (268, 23251), (275, 23191), (279, 23182), (292, 23119), (300, 23080),

Gene: Emiris\_52 Start: 45364, Stop: 43961, Start Num: 65

Candidate Starts for Emiris\_52:

(Start: 34 @45529 has 34 MA's), (Start: 65 @45364 has 226 MA's), (Start: 67 @45361 has 65 MA's), (Start: 68 @45355 has 1 MA's), (73, 45313), (86, 45241), (93, 45220), (Start: 121 @45124 has 1 MA's), (135, 45073), (147, 45007), (148, 45004), (153, 44953), (167, 44887), (171, 44875), (181, 44839), (197, 44794), (205, 44764), (212, 44725), (217, 44686), (221, 44653), (222, 44650), (224, 44644), (227, 44626), (236, 44593), (239, 44572), (249, 44542), (265, 44428), (269, 44386), (271, 44365), (275, 44332), (285, 44260), (286, 44254), (295, 44206), (304, 44161), (310, 44137), (314, 44122), (323, 44098),

Gene: EmpTee\_51 Start: 45244, Stop: 43841, Start Num: 65

Candidate Starts for EmpTee\_51:

(10, 45622), (12, 45577), (18, 45535), (Start: 27 @45454 has 5 MA's), (Start: 34 @45409 has 34 MA's), (Start: 65 @45244 has 226 MA's), (Start: 67 @45241 has 65 MA's), (Start: 68 @45235 has 1 MA's), (73, 45193), (86, 45121), (93, 45100), (Start: 121 @45004 has 1 MA's), (135, 44953), (147, 44887), (148, 44884), (153, 44833), (167, 44767), (171, 44755), (181, 44719), (197, 44674), (205, 44644), (212, 44605), (217, 44566), (221, 44533), (222, 44530), (227, 44506), (236, 44473), (239, 44452), (249, 44422), (265, 44308), (269, 44266), (271, 44245), (275, 44212), (285, 44140), (286, 44134), (295, 44086), (304, 44041), (310, 44017), (314, 44002), (323, 43978),

Gene: Eremos\_51 Start: 45237, Stop: 43834, Start Num: 65

Candidate Starts for Eremos\_51:

(Start: 34 @45402 has 34 MA's), (Start: 65 @45237 has 226 MA's), (Start: 67 @45234 has 65 MA's), (Start: 68 @45228 has 1 MA's), (73, 45186), (86, 45114), (93, 45093), (Start: 121 @44997 has 1 MA's), (135, 44946), (147, 44880), (148, 44877), (153, 44826), (167, 44760), (171, 44748), (181, 44712), (197, 44667), (205, 44637), (212, 44598), (217, 44559), (221, 44526), (222, 44523), (227, 44499), (236, 44466), (239, 44445), (249, 44415), (265, 44301), (269, 44259), (271, 44238), (275, 44205), (285, 44133), (286, 44127), (295, 44079), (304, 44034), (310, 44010), (314, 43995), (323, 43971),

Gene: Etaye\_51 Start: 45231, Stop: 43828, Start Num: 65

Candidate Starts for Etaye\_51:

(Start: 34 @45396 has 34 MA's), (Start: 65 @45231 has 226 MA's), (Start: 67 @45228 has 65 MA's), (Start: 68 @45222 has 1 MA's), (73, 45180), (86, 45108), (93, 45087), (Start: 121 @44991 has 1 MA's), (135, 44940), (147, 44874), (148, 44871), (153, 44820), (167, 44754), (171, 44742), (181, 44706), (197, 44661), (205, 44631), (212, 44592), (217, 44553), (221, 44520), (222, 44517), (224, 44511), (227, 44493), (236, 44460), (239, 44439), (249, 44409), (265, 44295), (269, 44253), (271, 44232), (275, 44199), (285, 44127), (286, 44121), (295, 44073), (304, 44028), (310, 44004), (314, 43989), (323, 43965),

Gene: Eugenia\_51 Start: 45241, Stop: 43838, Start Num: 65

Candidate Starts for Eugenia\_51:

(Start: 34 @45406 has 34 MA's), (Start: 65 @45241 has 226 MA's), (Start: 67 @45238 has 65 MA's), (Start: 68 @45232 has 1 MA's), (73, 45190), (86, 45118), (93, 45097), (Start: 121 @45001 has 1 MA's), (135, 44950), (147, 44884), (148, 44881), (151, 44857), (153, 44830), (167, 44764), (171, 44752), (181, 44716), (197, 44671), (205, 44641), (212, 44602), (217, 44563), (221, 44530), (222, 44527), (227, 44503), (236, 44470), (239, 44449), (249, 44419), (265, 44305), (269, 44263), (271, 44242), (275, 44209), (285, 44137), (286, 44131), (295, 44083), (304, 44038), (310, 44014), (314, 43999), (323, 43975),

Gene: Evaa\_44 Start: 38752, Stop: 37496, Start Num: 41

Candidate Starts for Evaa\_44:

(Start: 41 @38752 has 1 MA's), (50, 38713), (Start: 121 @38626 has 1 MA's), (124, 38620), (135, 38569), (141, 38536), (143, 38530), (167, 38383), (221, 38167), (232, 38122), (249, 38056), (253, 38029), (260, 37996), (271, 37888), (275, 37855), (286, 37816), (292, 37783), (293, 37777), (298, 37750), (305, 37714), (323, 37657), (335, 37612),

Gene: Fang\_52 Start: 45389, Stop: 43986, Start Num: 65

Candidate Starts for Fang\_52:

(10, 45767), (12, 45722), (18, 45680), (Start: 27 @45599 has 5 MA's), (Start: 34 @45554 has 34 MA's), (Start: 65 @45389 has 226 MA's), (Start: 67 @45386 has 65 MA's), (Start: 68 @45380 has 1 MA's), (73, 45338), (86, 45266), (93, 45245), (Start: 121 @45149 has 1 MA's), (135, 45098), (147, 45032), (148, 45029), (151, 45005), (153, 44978), (167, 44912), (171, 44900), (181, 44864), (197, 44819), (205, 44789), (212, 44750), (217, 44711), (221, 44678), (222, 44675), (227, 44651), (236, 44618), (239, 44597), (249, 44567), (265, 44453), (269, 44411), (271, 44390), (275, 44357), (285,

44285), (286, 44279), (295, 44231), (304, 44186), (310, 44162), (314, 44147), (323, 44123),

Gene: Faze9\_49 Start: 44989, Stop: 43622, Start Num: 67

Candidate Starts for Faze9\_49:

(Start: 67 @44989 has 65 MA's), (75, 44926), (77, 44911), (108, 44800), (120, 44749), (134, 44701), (142, 44653), (164, 44512), (167, 44503), (190, 44458), (192, 44452), (193, 44446), (197, 44434), (217, 44329), (221, 44296), (227, 44269), (236, 44236), (241, 44209), (249, 44185), (253, 44158), (258, 44131), (266, 44056), (271, 44011), (275, 43978), (282, 43957), (283, 43951), (289, 43918), (291, 43909), (293, 43900), (335, 43738), (338, 43720), (346, 43663),

Gene: FluffyNinja\_52 Start: 45403, Stop: 44000, Start Num: 65

Candidate Starts for FluffyNinja\_52:

(10, 45781), (12, 45736), (18, 45694), (Start: 27 @45613 has 5 MA's), (Start: 34 @45568 has 34 MA's), (Start: 65 @45403 has 226 MA's), (Start: 67 @45400 has 65 MA's), (Start: 68 @45394 has 1 MA's), (73, 45352), (86, 45280), (93, 45259), (Start: 121 @45163 has 1 MA's), (135, 45112), (147, 45046), (148, 45043), (153, 44992), (167, 44926), (171, 44914), (181, 44878), (197, 44833), (205, 44803), (212, 44764), (217, 44725), (221, 44692), (222, 44689), (227, 44665), (236, 44632), (239, 44611), (249, 44581), (265, 44467), (269, 44425), (271, 44404), (275, 44371), (285, 44299), (286, 44293), (295, 44245), (304, 44200), (310, 44176), (314, 44161), (323, 44137),

Gene: Fortunato\_47 Start: 45732, Stop: 44389, Start Num: 64

Candidate Starts for Fortunato\_47:

(Start: 64 @45732 has 26 MA's), (Start: 65 @45729 has 226 MA's), (Start: 68 @45720 has 1 MA's), (69, 45714), (76, 45663), (116, 45516), (130, 45471), (135, 45450), (157, 45309), (161, 45285), (167, 45264), (168, 45261), (173, 45246), (176, 45231), (203, 45162), (205, 45147), (213, 45105), (222, 45033), (225, 45018), (227, 45009), (236, 44976), (237, 44973), (239, 44955), (249, 44925), (260, 44865), (262, 44847), (264, 44835), (267, 44790), (268, 44784), (269, 44775), (274, 44745), (275, 44721), (286, 44682), (294, 44637), (298, 44616), (299, 44613), (319, 44544), (323, 44526),

Gene: Fozzie\_50 Start: 45266, Stop: 43863, Start Num: 65

Candidate Starts for Fozzie\_50:

(10, 45644), (12, 45599), (18, 45557), (Start: 27 @45476 has 5 MA's), (Start: 34 @45431 has 34 MA's), (Start: 65 @45266 has 226 MA's), (Start: 67 @45263 has 65 MA's), (Start: 68 @45257 has 1 MA's), (73, 45215), (86, 45143), (93, 45122), (Start: 121 @45026 has 1 MA's), (135, 44975), (147, 44909), (148, 44906), (153, 44855), (167, 44789), (171, 44777), (181, 44741), (197, 44696), (205, 44666), (212, 44627), (217, 44588), (221, 44555), (222, 44552), (227, 44528), (236, 44495), (239, 44474), (249, 44444), (265, 44330), (269, 44288), (271, 44267), (275, 44234), (285, 44162), (286, 44156), (295, 44108), (304, 44063), (310, 44039), (314, 44024), (323, 44000),

Gene: Frankicide\_51 Start: 45268, Stop: 43865, Start Num: 65

Candidate Starts for Frankicide\_51:

(Start: 34 @45433 has 34 MA's), (Start: 65 @45268 has 226 MA's), (Start: 67 @45265 has 65 MA's), (Start: 68 @45259 has 1 MA's), (73, 45217), (86, 45145), (93, 45124), (Start: 121 @45028 has 1 MA's), (135, 44977), (147, 44911), (148, 44908), (151, 44884), (153, 44857), (167, 44791), (171, 44779), (181, 44743), (197, 44698), (205, 44668), (212, 44629), (217, 44590), (221, 44557), (222, 44554), (227, 44530), (236, 44497), (239, 44476), (249, 44446), (265, 44332), (269, 44290), (271, 44269), (275, 44236), (285, 44164), (286, 44158), (295, 44110), (304, 44065), (310, 44041), (314, 44026), (323, 44002),

Gene: Frederick\_46 Start: 45702, Stop: 44362, Start Num: 65

Candidate Starts for Frederick\_46:

(Start: 64 @45705 has 26 MA's), (Start: 65 @45702 has 226 MA's), (Start: 68 @45693 has 1 MA's), (69, 45687), (76, 45636), (116, 45489), (130, 45444), (135, 45423), (157, 45282), (161, 45258), (167,

45237), (168, 45234), (173, 45219), (176, 45204), (203, 45135), (213, 45078), (225, 44991), (227, 44982), (236, 44949), (237, 44946), (239, 44928), (249, 44898), (260, 44838), (262, 44820), (264, 44808), (267, 44763), (268, 44757), (269, 44748), (271, 44727), (274, 44718), (275, 44694), (286, 44655), (298, 44589), (299, 44586), (314, 44523), (319, 44517), (323, 44499),

Gene: FrenchFry\_50 Start: 44968, Stop: 43601, Start Num: 67

Candidate Starts for FrenchFry\_50:

(Start: 67 @44968 has 65 MA's), (75, 44905), (77, 44890), (108, 44779), (120, 44728), (134, 44680), (142, 44632), (164, 44491), (167, 44482), (190, 44437), (192, 44431), (193, 44425), (197, 44413), (217, 44308), (221, 44275), (225, 44257), (227, 44248), (236, 44215), (241, 44188), (249, 44164), (253, 44137), (258, 44110), (266, 44035), (271, 43990), (275, 43957), (282, 43936), (283, 43930), (289, 43897), (293, 43879), (335, 43717), (338, 43699), (346, 43642),

Gene: Fresco\_44 Start: 37982, Stop: 36669, Start Num: 37

Candidate Starts for Fresco\_44:

(Start: 36 @37985 has 1 MA's), (Start: 37 @37982 has 3 MA's), (Start: 121 @37823 has 1 MA's), (124, 37817), (135, 37766), (195, 37511), (202, 37490), (210, 37445), (213, 37433), (236, 37304), (241, 37277), (249, 37253), (256, 37223), (257, 37205), (260, 37193), (264, 37163), (266, 37130), (271, 37085), (275, 37052), (279, 37019), (283, 36992), (292, 36947), (293, 36941), (298, 36914), (299, 36911), (310, 36863), (346, 36701),

Gene: Freya\_50 Start: 44929, Stop: 43526, Start Num: 65

Candidate Starts for Freya\_50:

(Start: 34 @45094 has 34 MA's), (Start: 65 @44929 has 226 MA's), (Start: 67 @44926 has 65 MA's), (Start: 68 @44920 has 1 MA's), (73, 44878), (86, 44806), (93, 44785), (Start: 121 @44689 has 1 MA's), (135, 44638), (147, 44572), (148, 44569), (153, 44518), (167, 44452), (171, 44440), (181, 44404), (197, 44359), (205, 44329), (212, 44290), (217, 44251), (221, 44218), (222, 44215), (227, 44191), (236, 44158), (239, 44137), (249, 44107), (265, 43993), (269, 43951), (271, 43930), (275, 43897), (285, 43825), (286, 43819), (295, 43771), (304, 43726), (310, 43702), (314, 43687), (323, 43663),

Gene: FriarPreacher\_50 Start: 45280, Stop: 43877, Start Num: 65

Candidate Starts for FriarPreacher\_50:

(10, 45658), (12, 45613), (18, 45571), (Start: 27 @45490 has 5 MA's), (Start: 34 @45445 has 34 MA's), (Start: 65 @45280 has 226 MA's), (Start: 67 @45277 has 65 MA's), (Start: 68 @45271 has 1 MA's), (73, 45229), (86, 45157), (93, 45136), (Start: 121 @45040 has 1 MA's), (135, 44989), (147, 44923), (148, 44920), (153, 44869), (167, 44803), (171, 44791), (181, 44755), (197, 44710), (205, 44680), (212, 44641), (217, 44602), (221, 44569), (222, 44566), (227, 44542), (236, 44509), (239, 44488), (249, 44458), (265, 44344), (269, 44302), (271, 44281), (275, 44248), (285, 44176), (286, 44170), (295, 44122), (304, 44077), (310, 44053), (314, 44038), (323, 44014),

Gene: Fringe\_52 Start: 45365, Stop: 43962, Start Num: 65

Candidate Starts for Fringe\_52:

(10, 45743), (12, 45698), (18, 45656), (Start: 27 @45575 has 5 MA's), (Start: 34 @45530 has 34 MA's), (Start: 65 @45365 has 226 MA's), (Start: 67 @45362 has 65 MA's), (Start: 68 @45356 has 1 MA's), (73, 45314), (86, 45242), (93, 45221), (Start: 121 @45125 has 1 MA's), (135, 45074), (147, 45008), (148, 45005), (153, 44954), (167, 44888), (171, 44876), (181, 44840), (197, 44795), (205, 44765), (212, 44726), (217, 44687), (221, 44654), (222, 44651), (227, 44627), (236, 44594), (239, 44573), (249, 44543), (265, 44429), (269, 44387), (271, 44366), (275, 44333), (285, 44261), (286, 44255), (295, 44207), (304, 44162), (310, 44138), (314, 44123), (323, 44099),

Gene: FugateOSU\_50 Start: 44943, Stop: 43540, Start Num: 65

Candidate Starts for FugateOSU\_50:

(Start: 34 @45108 has 34 MA's), (Start: 65 @44943 has 226 MA's), (Start: 67 @44940 has 65 MA's), (Start: 68 @44934 has 1 MA's), (73, 44892), (86, 44820), (93, 44799), (Start: 121 @44703 has 1 MA's), (135, 44652), (147, 44586), (148, 44583), (151, 44559), (153, 44532), (167, 44466), (171, 44454), (181, 44418), (197, 44373), (205, 44343), (212, 44304), (217, 44265), (221, 44232), (222, 44229), (227, 44205), (236, 44172), (239, 44151), (249, 44121), (265, 44007), (269, 43965), (271, 43944), (275, 43911), (285, 43839), (286, 43833), (295, 43785), (304, 43740), (310, 43716), (314, 43701), (323, 43677),

Gene: Funsized\_54 Start: 48470, Stop: 47079, Start Num: 58

Candidate Starts for Funsized\_54:

(Start: 58 @48470 has 1 MA's), (Start: 68 @48449 has 1 MA's), (105, 48281), (106, 48278), (109, 48272), (Start: 121 @48197 has 1 MA's), (141, 48113), (144, 48104), (155, 48017), (167, 47960), (173, 47942), (183, 47915), (207, 47834), (209, 47825), (213, 47810), (220, 47747), (222, 47738), (224, 47732), (225, 47723), (228, 47711), (237, 47678), (245, 47642), (249, 47630), (254, 47600), (255, 47594), (257, 47573), (262, 47543), (264, 47531), (267, 47486), (271, 47450), (275, 47417), (285, 47384), (286, 47378), (298, 47312), (302, 47294), (310, 47261), (314, 47246), (340, 47138), (346, 47102),

Gene: Gadget\_50 Start: 44888, Stop: 43275, Start Num: 32

Candidate Starts for Gadget\_50:

(15, 44993), (Start: 32 @44888 has 1 MA's), (51, 44789), (62, 44732), (Start: 70 @44711 has 2 MA's), (83, 44588), (87, 44576), (94, 44552), (98, 44537), (Start: 121 @44420 has 1 MA's), (127, 44405), (129, 44393), (135, 44363), (144, 44321), (153, 44243), (166, 44177), (167, 44174), (188, 44111), (195, 44078), (197, 44069), (216, 43976), (222, 43928), (223, 43925), (225, 43913), (227, 43904), (241, 43844), (249, 43820), (264, 43730), (275, 43619), (283, 43586), (284, 43583), (287, 43568), (292, 43547), (298, 43514),

Gene: Gareth\_50 Start: 44937, Stop: 43534, Start Num: 65

Candidate Starts for Gareth\_50:

(10, 45315), (12, 45270), (18, 45228), (Start: 27 @45147 has 5 MA's), (Start: 34 @45102 has 34 MA's), (Start: 65 @44937 has 226 MA's), (Start: 67 @44934 has 65 MA's), (Start: 68 @44928 has 1 MA's), (73, 44886), (86, 44814), (93, 44793), (Start: 121 @44697 has 1 MA's), (135, 44646), (147, 44580), (148, 44577), (153, 44526), (167, 44460), (171, 44448), (181, 44412), (197, 44367), (205, 44337), (212, 44298), (217, 44259), (221, 44226), (222, 44223), (227, 44199), (236, 44166), (239, 44145), (249, 44115), (265, 44001), (269, 43959), (271, 43938), (275, 43905), (285, 43833), (286, 43827), (295, 43779), (304, 43734), (310, 43710), (314, 43695), (323, 43671),

Gene: GeneCoco\_51 Start: 45252, Stop: 43849, Start Num: 65

Candidate Starts for GeneCoco\_51:

(10, 45630), (12, 45585), (18, 45543), (Start: 27 @45462 has 5 MA's), (Start: 34 @45417 has 34 MA's), (Start: 65 @45252 has 226 MA's), (Start: 67 @45249 has 65 MA's), (Start: 68 @45243 has 1 MA's), (73, 45201), (86, 45129), (93, 45108), (Start: 121 @45012 has 1 MA's), (135, 44961), (147, 44895), (148, 44892), (153, 44841), (167, 44775), (171, 44763), (181, 44727), (197, 44682), (205, 44652), (212, 44613), (217, 44574), (221, 44541), (222, 44538), (224, 44532), (227, 44514), (236, 44481), (239, 44460), (249, 44430), (265, 44316), (269, 44274), (271, 44253), (275, 44220), (285, 44148), (286, 44142), (295, 44094), (304, 44049), (310, 44025), (314, 44010), (323, 43986),

Gene: Gervas\_49 Start: 44856, Stop: 43243, Start Num: 34

Candidate Starts for Gervas\_49:

(16, 44982), (20, 44976), (21, 44961), (Start: 33 @44865 has 9 MA's), (Start: 34 @44856 has 34 MA's), (51, 44760), (Start: 70 @44682 has 2 MA's), (87, 44547), (Start: 121 @44388 has 1 MA's), (127, 44373), (129, 44361), (135, 44331), (144, 44289), (153, 44211), (188, 44079), (195, 44046), (197, 44037), (216, 43944), (222, 43896), (225, 43881), (227, 43872), (236, 43839), (241, 43812),

(249, 43788), (264, 43698), (275, 43587), (283, 43554), (287, 43536), (292, 43515), (298, 43482),

Gene: Giraffe\_51 Start: 44961, Stop: 43558, Start Num: 65

Candidate Starts for Giraffe\_51:

(Start: 34 @45126 has 34 MA's), (Start: 65 @44961 has 226 MA's), (Start: 67 @44958 has 65 MA's), (Start: 68 @44952 has 1 MA's), (73, 44910), (86, 44838), (93, 44817), (Start: 121 @44721 has 1 MA's), (135, 44670), (147, 44604), (148, 44601), (153, 44550), (167, 44484), (171, 44472), (181, 44436), (197, 44391), (205, 44361), (212, 44322), (217, 44283), (221, 44250), (222, 44247), (227, 44223), (236, 44190), (239, 44169), (249, 44139), (265, 44025), (269, 43983), (271, 43962), (275, 43929), (285, 43857), (286, 43851), (295, 43803), (304, 43758), (310, 43734), (314, 43719), (323, 43695),

Gene: Glass\_50 Start: 44973, Stop: 43606, Start Num: 67

Candidate Starts for Glass\_50:

(Start: 67 @44973 has 65 MA's), (75, 44910), (77, 44895), (108, 44784), (120, 44733), (134, 44685), (142, 44637), (164, 44496), (167, 44487), (190, 44442), (192, 44436), (193, 44430), (197, 44418), (217, 44313), (221, 44280), (225, 44262), (227, 44253), (236, 44220), (241, 44193), (249, 44169), (253, 44142), (258, 44115), (266, 44040), (271, 43995), (275, 43962), (282, 43941), (283, 43935), (289, 43902), (293, 43884), (335, 43722), (338, 43704), (346, 43647),

Gene: GlenHope\_50 Start: 44877, Stop: 43255, Start Num: 33

Candidate Starts for GlenHope\_50:

(16, 44994), (20, 44988), (21, 44973), (Start: 33 @44877 has 9 MA's), (Start: 34 @44868 has 34 MA's), (51, 44772), (Start: 70 @44694 has 2 MA's), (87, 44559), (Start: 121 @44400 has 1 MA's), (127, 44385), (129, 44373), (135, 44343), (144, 44301), (153, 44223), (188, 44091), (195, 44058), (197, 44049), (216, 43956), (222, 43908), (225, 43893), (227, 43884), (236, 43851), (241, 43824), (249, 43800), (264, 43710), (275, 43599), (283, 43566), (284, 43563), (287, 43548), (292, 43527), (298, 43494),

Gene: Godines\_50 Start: 44925, Stop: 43558, Start Num: 67

Candidate Starts for Godines\_50:

(Start: 67 @44925 has 65 MA's), (75, 44862), (77, 44847), (108, 44736), (120, 44685), (134, 44637), (142, 44589), (162, 44454), (164, 44448), (167, 44439), (190, 44394), (192, 44388), (193, 44382), (197, 44370), (217, 44265), (221, 44232), (225, 44214), (227, 44205), (236, 44172), (241, 44145), (249, 44121), (253, 44094), (258, 44067), (266, 43992), (271, 43947), (275, 43914), (282, 43893), (283, 43887), (289, 43854), (293, 43836), (335, 43674), (338, 43656), (346, 43599),

Gene: Gophee\_51 Start: 45235, Stop: 43832, Start Num: 65

Candidate Starts for Gophee\_51:

(Start: 34 @45400 has 34 MA's), (Start: 65 @45235 has 226 MA's), (Start: 67 @45232 has 65 MA's), (Start: 68 @45226 has 1 MA's), (73, 45184), (86, 45112), (93, 45091), (Start: 121 @44995 has 1 MA's), (135, 44944), (147, 44878), (148, 44875), (153, 44824), (167, 44758), (171, 44746), (181, 44710), (197, 44665), (205, 44635), (212, 44596), (217, 44557), (221, 44524), (222, 44521), (224, 44515), (227, 44497), (236, 44464), (239, 44443), (249, 44413), (265, 44299), (269, 44257), (271, 44236), (275, 44203), (285, 44131), (286, 44125), (295, 44077), (304, 44032), (310, 44008), (314, 43993), (323, 43969),

Gene: Grand2040\_50 Start: 44955, Stop: 43552, Start Num: 65

Candidate Starts for Grand2040\_50:

(10, 45333), (12, 45288), (18, 45246), (Start: 27 @45165 has 5 MA's), (Start: 34 @45120 has 34 MA's), (Start: 65 @44955 has 226 MA's), (Start: 67 @44952 has 65 MA's), (Start: 68 @44946 has 1 MA's), (73, 44904), (86, 44832), (93, 44811), (Start: 121 @44715 has 1 MA's), (135, 44664), (147, 44598), (148, 44595), (153, 44544), (167, 44478), (171, 44466), (181, 44430), (197, 44385), (205,

44355), (212, 44316), (217, 44277), (221, 44244), (222, 44241), (227, 44217), (236, 44184), (239, 44163), (249, 44133), (265, 44019), (269, 43977), (271, 43956), (275, 43923), (285, 43851), (286, 43845), (295, 43797), (304, 43752), (310, 43728), (314, 43713), (323, 43689),

Gene: Gustav\_32 Start: 25299, Stop: 24172, Start Num: 118

Candidate Starts for Gustav\_32:

(14, 25836), (19, 25827), (28, 25743), (49, 25629), (88, 25392), (Start: 118 @25299 has 5 MA's), (149, 25158), (161, 25065), (163, 25056), (219, 24885), (231, 24831), (233, 24825), (248, 24759), (256, 24723), (272, 24585), (275, 24555), (283, 24528), (292, 24480), (296, 24453), (298, 24447), (304, 24420), (312, 24387), (345, 24207),

Gene: Gwilliam\_52 Start: 45241, Stop: 43838, Start Num: 65

Candidate Starts for Gwilliam\_52:

(Start: 34 @45406 has 34 MA's), (Start: 65 @45241 has 226 MA's), (Start: 67 @45238 has 65 MA's), (Start: 68 @45232 has 1 MA's), (73, 45190), (86, 45118), (93, 45097), (Start: 121 @45001 has 1 MA's), (135, 44950), (147, 44884), (148, 44881), (151, 44857), (153, 44830), (167, 44764), (171, 44752), (181, 44716), (197, 44671), (205, 44641), (212, 44602), (217, 44563), (221, 44530), (222, 44527), (227, 44503), (236, 44470), (239, 44449), (249, 44419), (265, 44305), (269, 44263), (271, 44242), (275, 44209), (285, 44137), (286, 44131), (295, 44083), (304, 44038), (310, 44014), (314, 43999), (323, 43975),

Gene: Gyarad\_0051 Start: 45255, Stop: 43852, Start Num: 65

Candidate Starts for Gyarad\_0051:

(10, 45633), (12, 45588), (18, 45546), (Start: 27 @45465 has 5 MA's), (Start: 34 @45420 has 34 MA's), (Start: 65 @45255 has 226 MA's), (Start: 67 @45252 has 65 MA's), (Start: 68 @45246 has 1 MA's), (73, 45204), (86, 45132), (93, 45111), (Start: 121 @45015 has 1 MA's), (135, 44964), (147, 44898), (148, 44895), (151, 44871), (153, 44844), (167, 44778), (171, 44766), (181, 44730), (197, 44685), (205, 44655), (212, 44616), (217, 44577), (221, 44544), (222, 44541), (227, 44517), (236, 44484), (239, 44463), (249, 44433), (265, 44319), (269, 44277), (271, 44256), (275, 44223), (285, 44151), (286, 44145), (295, 44097), (304, 44052), (310, 44028), (314, 44013), (323, 43989),

Gene: HSavage\_51 Start: 45247, Stop: 43844, Start Num: 65

Candidate Starts for HSavage\_51:

(Start: 34 @45412 has 34 MA's), (Start: 65 @45247 has 226 MA's), (Start: 67 @45244 has 65 MA's), (Start: 68 @45238 has 1 MA's), (73, 45196), (86, 45124), (93, 45103), (Start: 121 @45007 has 1 MA's), (135, 44956), (147, 44890), (148, 44887), (153, 44836), (167, 44770), (171, 44758), (181, 44722), (197, 44677), (205, 44647), (212, 44608), (217, 44569), (221, 44536), (222, 44533), (227, 44509), (236, 44476), (239, 44455), (249, 44425), (265, 44311), (269, 44269), (271, 44248), (275, 44215), (285, 44143), (286, 44137), (295, 44089), (304, 44044), (310, 44020), (314, 44005), (323, 43981),

Gene: Haimas\_51 Start: 45241, Stop: 43838, Start Num: 65

Candidate Starts for Haimas\_51:

(Start: 34 @45406 has 34 MA's), (Start: 65 @45241 has 226 MA's), (Start: 67 @45238 has 65 MA's), (Start: 68 @45232 has 1 MA's), (73, 45190), (86, 45118), (93, 45097), (Start: 121 @45001 has 1 MA's), (135, 44950), (147, 44884), (148, 44881), (153, 44830), (167, 44764), (171, 44752), (181, 44716), (197, 44671), (205, 44641), (212, 44602), (217, 44563), (221, 44530), (222, 44527), (227, 44503), (236, 44470), (239, 44449), (249, 44419), (265, 44305), (269, 44263), (271, 44242), (275, 44209), (285, 44137), (286, 44131), (295, 44083), (304, 44038), (310, 44014), (314, 43999), (323, 43975),

Gene: Haleema\_50 Start: 44955, Stop: 43552, Start Num: 65

Candidate Starts for Haleema\_50:



(10, 45333), (12, 45288), (18, 45246), (Start: 27 @45165 has 5 MA's), (Start: 34 @45120 has 34 MA's), (Start: 65 @44955 has 226 MA's), (Start: 67 @44952 has 65 MA's), (Start: 68 @44946 has 1 MA's), (73, 44904), (86, 44832), (93, 44811), (Start: 121 @44715 has 1 MA's), (135, 44664), (147, 44598), (148, 44595), (153, 44544), (167, 44478), (171, 44466), (181, 44430), (197, 44385), (205, 44355), (212, 44316), (217, 44277), (221, 44244), (222, 44241), (227, 44217), (236, 44184), (239, 44163), (249, 44133), (265, 44019), (269, 43977), (271, 43956), (275, 43923), (285, 43851), (286, 43845), (295, 43797), (304, 43752), (310, 43728), (314, 43713), (323, 43689),

Gene: Halfpint\_48 Start: 44702, Stop: 43080, Start Num: 33

Candidate Starts for Halfpint\_48:

(16, 44819), (20, 44813), (21, 44798), (Start: 33 @44702 has 9 MA's), (Start: 34 @44693 has 34 MA's), (51, 44597), (Start: 70 @44519 has 2 MA's), (87, 44384), (Start: 121 @44225 has 1 MA's), (127, 44210), (129, 44198), (135, 44168), (144, 44126), (153, 44048), (188, 43916), (195, 43883), (197, 43874), (216, 43781), (222, 43733), (225, 43718), (227, 43709), (236, 43676), (241, 43649), (249, 43625), (264, 43535), (275, 43424), (283, 43391), (284, 43388), (287, 43373), (292, 43352), (298, 43319),

Gene: Hamish\_51 Start: 45234, Stop: 43831, Start Num: 65

Candidate Starts for Hamish\_51:

(Start: 34 @45399 has 34 MA's), (Start: 65 @45234 has 226 MA's), (Start: 67 @45231 has 65 MA's), (Start: 68 @45225 has 1 MA's), (73, 45183), (86, 45111), (93, 45090), (Start: 121 @44994 has 1 MA's), (135, 44943), (147, 44877), (148, 44874), (153, 44823), (167, 44757), (171, 44745), (181, 44709), (197, 44664), (205, 44634), (212, 44595), (217, 44556), (221, 44523), (222, 44520), (227, 44496), (236, 44463), (239, 44442), (249, 44412), (265, 44298), (269, 44256), (271, 44235), (275, 44202), (285, 44130), (286, 44124), (295, 44076), (304, 44031), (310, 44007), (314, 43992), (323, 43968),

Gene: Hangman\_46 Start: 45811, Stop: 44468, Start Num: 64

Candidate Starts for Hangman\_46:

(Start: 64 @45811 has 26 MA's), (Start: 65 @45808 has 226 MA's), (Start: 68 @45799 has 1 MA's), (69, 45793), (76, 45742), (116, 45595), (130, 45550), (135, 45529), (157, 45388), (161, 45364), (167, 45343), (168, 45340), (173, 45325), (176, 45310), (203, 45241), (207, 45208), (213, 45184), (225, 45097), (227, 45088), (236, 45055), (237, 45052), (239, 45034), (249, 45004), (260, 44944), (262, 44926), (264, 44914), (267, 44869), (268, 44863), (269, 44854), (271, 44833), (274, 44824), (275, 44800), (286, 44761), (298, 44695), (299, 44692), (319, 44623), (323, 44605),

Gene: Hartsy\_51 Start: 45284, Stop: 43881, Start Num: 65

Candidate Starts for Hartsy\_51:

(Start: 34 @45449 has 34 MA's), (Start: 65 @45284 has 226 MA's), (Start: 67 @45281 has 65 MA's), (Start: 68 @45275 has 1 MA's), (73, 45233), (86, 45161), (93, 45140), (Start: 121 @45044 has 1 MA's), (135, 44993), (147, 44927), (148, 44924), (151, 44900), (153, 44873), (167, 44807), (171, 44795), (181, 44759), (197, 44714), (205, 44684), (212, 44645), (217, 44606), (221, 44573), (222, 44570), (227, 44546), (236, 44513), (239, 44492), (249, 44462), (265, 44348), (269, 44306), (271, 44285), (275, 44252), (285, 44180), (286, 44174), (295, 44126), (304, 44081), (310, 44057), (314, 44042), (323, 44018),

Gene: Harvey\_51 Start: 45271, Stop: 43868, Start Num: 65

Candidate Starts for Harvey\_51:

(Start: 34 @45436 has 34 MA's), (Start: 65 @45271 has 226 MA's), (Start: 67 @45268 has 65 MA's), (Start: 68 @45262 has 1 MA's), (73, 45220), (86, 45148), (93, 45127), (Start: 121 @45031 has 1 MA's), (135, 44980), (147, 44914), (148, 44911), (153, 44860), (167, 44794), (171, 44782), (181, 44746), (197, 44701), (205, 44671), (212, 44632), (217, 44593), (221, 44560), (222, 44557), (227, 44533), (236, 44500), (239, 44479), (249, 44449), (265, 44335), (269, 44293), (271, 44272), (275,

44239), (285, 44167), (286, 44161), (295, 44113), (304, 44068), (310, 44044), (314, 44029), (323, 44005),

Gene: HarveySr\_49 Start: 44861, Stop: 43248, Start Num: 34

Candidate Starts for HarveySr\_49:

(16, 44987), (20, 44981), (21, 44966), (Start: 33 @44870 has 9 MA's), (Start: 34 @44861 has 34 MA's), (51, 44765), (Start: 70 @44687 has 2 MA's), (87, 44552), (Start: 121 @44393 has 1 MA's), (127, 44378), (129, 44366), (135, 44336), (144, 44294), (153, 44216), (166, 44150), (167, 44147), (188, 44084), (195, 44051), (197, 44042), (216, 43949), (222, 43901), (223, 43898), (225, 43886), (227, 43877), (241, 43817), (249, 43793), (264, 43703), (275, 43592), (283, 43559), (284, 43556), (287, 43541), (292, 43520), (298, 43487),

Gene: Hashim76\_54 Start: 45064, Stop: 43547, Start Num: 39

Candidate Starts for Hashim76\_54:

(Start: 39 @45064 has 1 MA's), (63, 44938), (79, 44836), (85, 44812), (122, 44674), (135, 44626), (153, 44506), (155, 44497), (167, 44440), (183, 44386), (184, 44383), (212, 44278), (213, 44275), (222, 44203), (225, 44188), (227, 44179), (240, 44122), (260, 44029), (271, 43912), (275, 43879), (276, 43870), (283, 43852), (286, 43840), (301, 43762), (310, 43723), (348, 43555),

Gene: Heath\_45 Start: 45316, Stop: 43976, Start Num: 65

Candidate Starts for Heath\_45:

(Start: 64 @45319 has 26 MA's), (Start: 65 @45316 has 226 MA's), (Start: 68 @45307 has 1 MA's), (69, 45301), (76, 45250), (116, 45103), (130, 45058), (135, 45037), (157, 44896), (161, 44872), (167, 44851), (168, 44848), (173, 44833), (176, 44818), (203, 44749), (207, 44716), (213, 44692), (222, 44620), (225, 44605), (227, 44596), (236, 44563), (237, 44560), (239, 44542), (249, 44512), (260, 44452), (262, 44434), (264, 44422), (266, 44389), (267, 44377), (268, 44371), (269, 44362), (271, 44341), (274, 44332), (275, 44308), (286, 44269), (294, 44224), (298, 44203), (299, 44200), (319, 44131), (323, 44113),

Gene: Heathcliff\_49 Start: 44839, Stop: 43226, Start Num: 34

Candidate Starts for Heathcliff\_49:

(16, 44965), (20, 44959), (21, 44944), (Start: 33 @44848 has 9 MA's), (Start: 34 @44839 has 34 MA's), (51, 44743), (Start: 70 @44665 has 2 MA's), (87, 44530), (Start: 121 @44371 has 1 MA's), (127, 44356), (129, 44344), (135, 44314), (144, 44272), (153, 44194), (166, 44128), (167, 44125), (188, 44062), (195, 44029), (197, 44020), (216, 43927), (222, 43879), (223, 43876), (225, 43864), (227, 43855), (241, 43795), (249, 43771), (264, 43681), (275, 43570), (283, 43537), (284, 43534), (287, 43519), (292, 43498), (298, 43465),

Gene: Hedgerow\_50 Start: 44982, Stop: 43615, Start Num: 67

Candidate Starts for Hedgerow\_50:

(Start: 67 @44982 has 65 MA's), (75, 44919), (77, 44904), (108, 44793), (120, 44742), (134, 44694), (142, 44646), (164, 44505), (167, 44496), (190, 44451), (192, 44445), (193, 44439), (197, 44427), (217, 44322), (221, 44289), (225, 44271), (227, 44262), (236, 44229), (241, 44202), (249, 44178), (253, 44151), (258, 44124), (266, 44049), (271, 44004), (275, 43971), (282, 43950), (283, 43944), (289, 43911), (291, 43902), (293, 43893), (335, 43731), (338, 43713), (346, 43656),

Gene: Held\_51 Start: 44960, Stop: 43557, Start Num: 65

Candidate Starts for Held\_51:

(10, 45338), (12, 45293), (18, 45251), (Start: 27 @45170 has 5 MA's), (Start: 34 @45125 has 34 MA's), (Start: 65 @44960 has 226 MA's), (Start: 67 @44957 has 65 MA's), (Start: 68 @44951 has 1 MA's), (73, 44909), (86, 44837), (93, 44816), (Start: 121 @44720 has 1 MA's), (135, 44669), (147, 44603), (148, 44600), (153, 44549), (167, 44483), (171, 44471), (181, 44435), (197, 44390), (205, 44360), (212, 44321), (217, 44282), (221, 44249), (222, 44246), (227, 44222), (236, 44189), (239,

44168), (249, 44138), (265, 44024), (269, 43982), (271, 43961), (275, 43928), (285, 43856), (286, 43850), (295, 43802), (304, 43757), (310, 43733), (314, 43718), (323, 43694),

Gene: HenryJackson\_50 Start: 44952, Stop: 43552, Start Num: 67

Candidate Starts for HenryJackson\_50:

(Start: 34 @45120 has 34 MA's), (Start: 65 @44955 has 226 MA's), (Start: 67 @44952 has 65 MA's), (Start: 68 @44946 has 1 MA's), (73, 44904), (86, 44832), (93, 44811), (Start: 121 @44715 has 1 MA's), (135, 44664), (147, 44598), (148, 44595), (151, 44571), (153, 44544), (167, 44478), (171, 44466), (181, 44430), (197, 44385), (205, 44355), (212, 44316), (217, 44277), (221, 44244), (222, 44241), (227, 44217), (236, 44184), (239, 44163), (249, 44133), (265, 44019), (269, 43977), (271, 43956), (275, 43923), (285, 43851), (286, 43845), (295, 43797), (304, 43752), (310, 43728), (314, 43713), (323, 43689),

Gene: Hertubise\_51 Start: 45255, Stop: 43852, Start Num: 65

Candidate Starts for Hertubise\_51:

(Start: 34 @45420 has 34 MA's), (Start: 65 @45255 has 226 MA's), (Start: 67 @45252 has 65 MA's), (Start: 68 @45246 has 1 MA's), (73, 45204), (86, 45132), (93, 45111), (Start: 121 @45015 has 1 MA's), (135, 44964), (147, 44898), (148, 44895), (153, 44844), (167, 44778), (171, 44766), (181, 44730), (197, 44685), (205, 44655), (212, 44616), (217, 44577), (221, 44544), (222, 44541), (227, 44517), (236, 44484), (239, 44463), (249, 44433), (265, 44319), (269, 44277), (271, 44256), (275, 44223), (285, 44151), (286, 44145), (295, 44097), (304, 44052), (310, 44028), (314, 44013), (323, 43989),

Gene: Hetaeria\_51 Start: 45272, Stop: 43869, Start Num: 65

Candidate Starts for Hetaeria\_51:

(10, 45650), (12, 45605), (18, 45563), (Start: 27 @45482 has 5 MA's), (Start: 34 @45437 has 34 MA's), (Start: 65 @45272 has 226 MA's), (Start: 67 @45269 has 65 MA's), (Start: 68 @45263 has 1 MA's), (73, 45221), (86, 45149), (93, 45128), (Start: 121 @45032 has 1 MA's), (135, 44981), (147, 44915), (148, 44912), (151, 44888), (153, 44861), (167, 44795), (171, 44783), (181, 44747), (197, 44702), (205, 44672), (212, 44633), (217, 44594), (221, 44561), (222, 44558), (227, 44534), (236, 44501), (239, 44480), (249, 44450), (265, 44336), (269, 44294), (271, 44273), (275, 44240), (285, 44168), (286, 44162), (295, 44114), (304, 44069), (310, 44045), (314, 44030), (323, 44006),

Gene: HighStump\_51 Start: 45082, Stop: 43679, Start Num: 65

Candidate Starts for HighStump\_51:

(Start: 34 @45247 has 34 MA's), (Start: 65 @45082 has 226 MA's), (Start: 67 @45079 has 65 MA's), (Start: 68 @45073 has 1 MA's), (73, 45031), (86, 44959), (93, 44938), (Start: 121 @44842 has 1 MA's), (135, 44791), (147, 44725), (148, 44722), (151, 44698), (153, 44671), (167, 44605), (171, 44593), (181, 44557), (197, 44512), (205, 44482), (212, 44443), (217, 44404), (221, 44371), (222, 44368), (227, 44344), (236, 44311), (239, 44290), (249, 44260), (265, 44146), (269, 44104), (271, 44083), (275, 44050), (285, 43978), (286, 43972), (295, 43924), (304, 43879), (310, 43855), (314, 43840), (323, 43816),

Gene: Hocus\_50 Start: 44944, Stop: 43541, Start Num: 64

Candidate Starts for Hocus\_50:

(Start: 34 @45106 has 34 MA's), (Start: 64 @44944 has 26 MA's), (Start: 67 @44941 has 65 MA's), (73, 44893), (86, 44821), (93, 44800), (Start: 121 @44704 has 1 MA's), (135, 44653), (147, 44587), (148, 44584), (151, 44560), (153, 44533), (167, 44467), (171, 44455), (181, 44419), (197, 44374), (205, 44344), (212, 44305), (217, 44266), (221, 44233), (222, 44230), (224, 44224), (227, 44206), (236, 44173), (239, 44152), (249, 44122), (265, 44008), (269, 43966), (271, 43945), (275, 43912), (285, 43840), (286, 43834), (295, 43786), (304, 43741), (310, 43717), (314, 43702), (323, 43678),

Gene: Holeinone\_50 Start: 44833, Stop: 43466, Start Num: 67

Candidate Starts for Holeinone\_50:

(Start: 67 @44833 has 65 MA's), (75, 44770), (77, 44755), (108, 44644), (120, 44593), (134, 44545), (142, 44497), (153, 44413), (162, 44362), (164, 44356), (167, 44347), (190, 44302), (192, 44296), (193, 44290), (197, 44278), (217, 44173), (221, 44140), (225, 44122), (227, 44113), (236, 44080), (241, 44053), (249, 44029), (253, 44002), (258, 43975), (266, 43900), (271, 43855), (275, 43822), (282, 43801), (283, 43795), (289, 43762), (293, 43744), (335, 43582), (338, 43564), (346, 43507),

Gene: Horchata\_51 Start: 45247, Stop: 43844, Start Num: 65

Candidate Starts for Horchata\_51:

(10, 45625), (12, 45580), (18, 45538), (Start: 27 @45457 has 5 MA's), (Start: 34 @45412 has 34 MA's), (Start: 65 @45247 has 226 MA's), (Start: 67 @45244 has 65 MA's), (Start: 68 @45238 has 1 MA's), (73, 45196), (86, 45124), (93, 45103), (Start: 121 @45007 has 1 MA's), (135, 44956), (147, 44890), (148, 44887), (153, 44836), (167, 44770), (171, 44758), (181, 44722), (197, 44677), (205, 44647), (212, 44608), (217, 44569), (221, 44536), (222, 44533), (227, 44509), (236, 44476), (239, 44455), (249, 44425), (265, 44311), (269, 44269), (271, 44248), (275, 44215), (285, 44143), (286, 44137), (295, 44089), (304, 44044), (310, 44020), (314, 44005), (323, 43981),

Gene: Hosp\_042 Start: 41753, Stop: 40323, Start Num: 61

Candidate Starts for Hosp\_042:

(46, 41819), (Start: 61 @41753 has 2 MA's), (Start: 68 @41735 has 1 MA's), (103, 41531), (109, 41513), (116, 41459), (125, 41432), (134, 41396), (135, 41384), (165, 41204), (167, 41198), (173, 41180), (176, 41165), (203, 41099), (209, 41057), (212, 41045), (213, 41042), (222, 40970), (224, 40964), (227, 40946), (240, 40889), (255, 40835), (259, 40805), (262, 40784), (269, 40712), (271, 40691), (275, 40658), (286, 40619), (294, 40574), (297, 40556), (299, 40550), (308, 40505), (310, 40502), (340, 40379),

Gene: Hydro\_46 Start: 45744, Stop: 44404, Start Num: 65

Candidate Starts for Hydro\_46:

(Start: 64 @45747 has 26 MA's), (Start: 65 @45744 has 226 MA's), (Start: 68 @45735 has 1 MA's), (69, 45729), (76, 45678), (116, 45531), (130, 45486), (135, 45465), (157, 45324), (161, 45300), (167, 45279), (168, 45276), (173, 45261), (176, 45246), (203, 45177), (205, 45162), (207, 45144), (213, 45120), (222, 45048), (225, 45033), (227, 45024), (236, 44991), (237, 44988), (239, 44970), (249, 44940), (260, 44880), (262, 44862), (264, 44850), (267, 44805), (268, 44799), (269, 44790), (274, 44760), (275, 44736), (286, 44697), (298, 44631), (299, 44628), (319, 44559), (323, 44541),

Gene: ImtiyazSitla\_51 Start: 44930, Stop: 43527, Start Num: 65

Candidate Starts for ImtiyazSitla\_51:

(Start: 34 @45095 has 34 MA's), (Start: 65 @44930 has 226 MA's), (Start: 67 @44927 has 65 MA's), (Start: 68 @44921 has 1 MA's), (73, 44879), (86, 44807), (93, 44786), (Start: 121 @44690 has 1 MA's), (135, 44639), (147, 44573), (148, 44570), (153, 44519), (167, 44453), (171, 44441), (181, 44405), (197, 44360), (205, 44330), (212, 44291), (217, 44252), (221, 44219), (222, 44216), (224, 44210), (227, 44192), (236, 44159), (239, 44138), (249, 44108), (265, 43994), (269, 43952), (271, 43931), (275, 43898), (285, 43826), (286, 43820), (295, 43772), (304, 43727), (310, 43703), (314, 43688), (323, 43664),

Gene: Imvubu\_43 Start: 42496, Stop: 41111, Start Num: 67

Candidate Starts for Imvubu\_43:

(47, 42553), (Start: 67 @42496 has 65 MA's), (73, 42448), (75, 42433), (106, 42310), (109, 42304), (Start: 121 @42229 has 1 MA's), (128, 42211), (144, 42139), (168, 41992), (205, 41887), (206, 41878), (209, 41860), (212, 41848), (213, 41845), (220, 41782), (222, 41773), (225, 41758), (228, 41746), (245, 41677), (249, 41665), (257, 41605), (262, 41575), (264, 41563), (266, 41530), (268, 41512), (271, 41482), (275, 41449), (299, 41341), (310, 41293), (319, 41272),

Gene: Inchworm\_52 Start: 45368, Stop: 43965, Start Num: 65

Candidate Starts for Inchworm\_52:

(Start: 34 @45533 has 34 MA's), (Start: 65 @45368 has 226 MA's), (Start: 67 @45365 has 65 MA's), (Start: 68 @45359 has 1 MA's), (73, 45317), (86, 45245), (93, 45224), (Start: 121 @45128 has 1 MA's), (135, 45077), (147, 45011), (148, 45008), (153, 44957), (167, 44891), (171, 44879), (181, 44843), (197, 44798), (205, 44768), (212, 44729), (217, 44690), (221, 44657), (222, 44654), (224, 44648), (227, 44630), (236, 44597), (239, 44576), (249, 44546), (265, 44432), (269, 44390), (271, 44369), (275, 44336), (285, 44264), (286, 44258), (295, 44210), (304, 44165), (310, 44141), (314, 44126), (323, 44102),

Gene: Indlovu\_48 Start: 44932, Stop: 43562, Start Num: 65

Candidate Starts for Indlovu\_48:

(Start: 65 @44932 has 226 MA's), (91, 44788), (113, 44707), (Start: 121 @44677 has 1 MA's), (135, 44620), (142, 44584), (165, 44440), (173, 44416), (176, 44401), (198, 44344), (203, 44335), (205, 44320), (207, 44302), (213, 44278), (219, 44221), (225, 44191), (228, 44179), (229, 44176), (236, 44149), (240, 44125), (241, 44122), (249, 44098), (255, 44071), (262, 44020), (265, 43990), (267, 43963), (275, 43894), (283, 43867), (298, 43789), (310, 43738), (319, 43717), (338, 43636), (340, 43615), (348, 43570),

Gene: Inverness\_51 Start: 45256, Stop: 43853, Start Num: 65

Candidate Starts for Inverness\_51:

(10, 45634), (12, 45589), (18, 45547), (Start: 27 @45466 has 5 MA's), (Start: 34 @45421 has 34 MA's), (Start: 65 @45256 has 226 MA's), (Start: 67 @45253 has 65 MA's), (Start: 68 @45247 has 1 MA's), (73, 45205), (86, 45133), (93, 45112), (Start: 121 @45016 has 1 MA's), (135, 44965), (147, 44899), (148, 44896), (151, 44872), (153, 44845), (167, 44779), (171, 44767), (181, 44731), (197, 44686), (205, 44656), (212, 44617), (217, 44578), (221, 44545), (222, 44542), (227, 44518), (236, 44485), (239, 44464), (249, 44434), (269, 44278), (271, 44257), (275, 44224), (285, 44152), (286, 44146), (295, 44098), (304, 44053), (310, 44029), (314, 44014), (323, 43990),

Gene: Iridoclysis\_51 Start: 45227, Stop: 43824, Start Num: 65

Candidate Starts for Iridoclysis\_51:

(Start: 34 @45392 has 34 MA's), (Start: 65 @45227 has 226 MA's), (Start: 67 @45224 has 65 MA's), (Start: 68 @45218 has 1 MA's), (73, 45176), (86, 45104), (93, 45083), (Start: 121 @44987 has 1 MA's), (135, 44936), (147, 44870), (148, 44867), (153, 44816), (167, 44750), (171, 44738), (181, 44702), (197, 44657), (205, 44627), (212, 44588), (217, 44549), (221, 44516), (222, 44513), (227, 44489), (236, 44456), (239, 44435), (249, 44405), (265, 44291), (269, 44249), (271, 44228), (275, 44195), (285, 44123), (286, 44117), (295, 44069), (304, 44024), (310, 44000), (314, 43985), (323, 43961),

Gene: IsaacEli\_52 Start: 45386, Stop: 43983, Start Num: 65

Candidate Starts for IsaacEli\_52:

(10, 45764), (12, 45719), (18, 45677), (Start: 27 @45596 has 5 MA's), (Start: 34 @45551 has 34 MA's), (Start: 65 @45386 has 226 MA's), (Start: 67 @45383 has 65 MA's), (Start: 68 @45377 has 1 MA's), (73, 45335), (86, 45263), (93, 45242), (Start: 121 @45146 has 1 MA's), (135, 45095), (147, 45029), (148, 45026), (153, 44975), (167, 44909), (171, 44897), (181, 44861), (197, 44816), (205, 44786), (212, 44747), (217, 44708), (221, 44675), (222, 44672), (227, 44648), (236, 44615), (239, 44594), (249, 44564), (265, 44450), (269, 44408), (271, 44387), (275, 44354), (285, 44282), (286, 44276), (295, 44228), (304, 44183), (310, 44159), (314, 44144), (323, 44120),

Gene: ItsyBitsy1\_50 Start: 44850, Stop: 43483, Start Num: 67

Candidate Starts for ItsyBitsy1\_50:

(Start: 67 @44850 has 65 MA's), (75, 44787), (77, 44772), (108, 44661), (120, 44610), (134, 44562), (142, 44514), (162, 44379), (164, 44373), (167, 44364), (190, 44319), (192, 44313), (193, 44307),

(197, 44295), (217, 44190), (221, 44157), (227, 44130), (236, 44097), (241, 44070), (249, 44046), (253, 44019), (258, 43992), (266, 43917), (271, 43872), (275, 43839), (282, 43818), (283, 43812), (289, 43779), (291, 43770), (293, 43761), (335, 43599), (338, 43581), (346, 43524),

Gene: JAMaL\_46 Start: 45881, Stop: 44538, Start Num: 64

Candidate Starts for JAMaL\_46:

(Start: 64 @45881 has 26 MA's), (Start: 65 @45878 has 226 MA's), (Start: 68 @45869 has 1 MA's), (69, 45863), (76, 45812), (116, 45665), (130, 45620), (135, 45599), (137, 45587), (157, 45458), (161, 45434), (167, 45413), (168, 45410), (173, 45395), (176, 45380), (203, 45311), (205, 45296), (207, 45278), (213, 45254), (225, 45167), (227, 45158), (236, 45125), (237, 45122), (239, 45104), (249, 45074), (260, 45014), (262, 44996), (264, 44984), (267, 44939), (268, 44933), (269, 44924), (271, 44903), (274, 44894), (275, 44870), (286, 44831), (298, 44765), (299, 44762), (319, 44693), (323, 44675),

Gene: JDog\_50 Start: 44964, Stop: 43561, Start Num: 64

Candidate Starts for JDog\_50:

(Start: 34 @45126 has 34 MA's), (Start: 64 @44964 has 26 MA's), (Start: 67 @44961 has 65 MA's), (73, 44913), (86, 44841), (93, 44820), (Start: 121 @44724 has 1 MA's), (135, 44673), (147, 44607), (148, 44604), (151, 44580), (153, 44553), (167, 44487), (171, 44475), (181, 44439), (197, 44394), (205, 44364), (212, 44325), (217, 44286), (221, 44253), (222, 44250), (224, 44244), (227, 44226), (236, 44193), (239, 44172), (249, 44142), (265, 44028), (269, 43986), (271, 43965), (275, 43932), (285, 43860), (286, 43854), (295, 43806), (304, 43761), (310, 43737), (314, 43722), (323, 43698),

Gene: JacAttac\_52 Start: 45368, Stop: 43965, Start Num: 65

Candidate Starts for JacAttac\_52:

(10, 45746), (12, 45701), (18, 45659), (Start: 27 @45578 has 5 MA's), (Start: 34 @45533 has 34 MA's), (Start: 65 @45368 has 226 MA's), (Start: 67 @45365 has 65 MA's), (Start: 68 @45359 has 1 MA's), (73, 45317), (86, 45245), (93, 45224), (Start: 121 @45128 has 1 MA's), (135, 45077), (147, 45011), (148, 45008), (153, 44957), (167, 44891), (171, 44879), (181, 44843), (197, 44798), (205, 44768), (212, 44729), (217, 44690), (221, 44657), (222, 44654), (227, 44630), (236, 44597), (239, 44576), (249, 44546), (265, 44432), (269, 44390), (271, 44369), (275, 44336), (285, 44264), (286, 44258), (295, 44210), (304, 44165), (310, 44141), (314, 44126), (323, 44102),

Gene: Jackstina\_46 Start: 44798, Stop: 43185, Start Num: 34

Candidate Starts for Jackstina\_46:

(16, 44924), (20, 44918), (21, 44903), (Start: 33 @44807 has 9 MA's), (Start: 34 @44798 has 34 MA's), (51, 44702), (Start: 70 @44624 has 2 MA's), (87, 44489), (Start: 121 @44330 has 1 MA's), (127, 44315), (129, 44303), (135, 44273), (144, 44231), (153, 44153), (188, 44021), (195, 43988), (197, 43979), (216, 43886), (222, 43838), (225, 43823), (227, 43814), (236, 43781), (241, 43754), (249, 43730), (264, 43640), (275, 43529), (283, 43496), (284, 43493), (287, 43478), (292, 43457), (298, 43424),

Gene: JaguarMi\_46 Start: 45187, Stop: 43847, Start Num: 65

Candidate Starts for JaguarMi\_46:

(Start: 65 @45187 has 226 MA's), (Start: 68 @45178 has 1 MA's), (69, 45172), (116, 44974), (130, 44929), (135, 44908), (157, 44767), (161, 44743), (167, 44722), (168, 44719), (173, 44704), (176, 44689), (203, 44620), (207, 44587), (213, 44563), (222, 44491), (225, 44476), (227, 44467), (231, 44452), (236, 44434), (237, 44431), (239, 44413), (249, 44383), (260, 44323), (262, 44305), (264, 44293), (267, 44248), (268, 44242), (269, 44233), (271, 44212), (274, 44203), (275, 44179), (286, 44140), (298, 44074), (299, 44071), (319, 44002), (323, 43984),

Gene: JakeO\_50 Start: 44963, Stop: 43560, Start Num: 64

Candidate Starts for JakeO\_50:

(Start: 34 @45125 has 34 MA's), (Start: 64 @44963 has 26 MA's), (Start: 67 @44960 has 65 MA's), (73, 44912), (86, 44840), (93, 44819), (Start: 121 @44723 has 1 MA's), (135, 44672), (147, 44606), (148, 44603), (151, 44579), (153, 44552), (167, 44486), (171, 44474), (181, 44438), (197, 44393), (205, 44363), (212, 44324), (217, 44285), (221, 44252), (222, 44249), (224, 44243), (227, 44225), (236, 44192), (239, 44171), (249, 44141), (265, 44027), (269, 43985), (271, 43964), (275, 43931), (285, 43859), (286, 43853), (295, 43805), (304, 43760), (310, 43736), (314, 43721), (323, 43697),

Gene: JangoPhett\_51 Start: 45238, Stop: 43835, Start Num: 65

Candidate Starts for JangoPhett\_51:

(10, 45616), (12, 45571), (18, 45529), (Start: 27 @45448 has 5 MA's), (Start: 34 @45403 has 34 MA's), (Start: 65 @45238 has 226 MA's), (Start: 67 @45235 has 65 MA's), (Start: 68 @45229 has 1 MA's), (73, 45187), (86, 45115), (93, 45094), (Start: 121 @44998 has 1 MA's), (135, 44947), (147, 44881), (148, 44878), (153, 44827), (167, 44761), (171, 44749), (181, 44713), (197, 44668), (205, 44638), (212, 44599), (217, 44560), (221, 44527), (222, 44524), (227, 44500), (236, 44467), (239, 44446), (249, 44416), (265, 44302), (269, 44260), (271, 44239), (275, 44206), (285, 44134), (286, 44128), (295, 44080), (304, 44035), (310, 44011), (314, 43996), (323, 43972),

Gene: Jillium\_50 Start: 44957, Stop: 43554, Start Num: 65

Candidate Starts for Jillium\_50:

(10, 45335), (12, 45290), (18, 45248), (Start: 27 @45167 has 5 MA's), (Start: 34 @45122 has 34 MA's), (Start: 65 @44957 has 226 MA's), (Start: 67 @44954 has 65 MA's), (Start: 68 @44948 has 1 MA's), (73, 44906), (86, 44834), (93, 44813), (Start: 121 @44717 has 1 MA's), (135, 44666), (147, 44600), (148, 44597), (153, 44546), (167, 44480), (171, 44468), (181, 44432), (197, 44387), (205, 44357), (212, 44318), (217, 44279), (221, 44246), (222, 44243), (227, 44219), (236, 44186), (239, 44165), (249, 44135), (265, 44021), (269, 43979), (271, 43958), (275, 43925), (285, 43853), (286, 43847), (295, 43799), (304, 43754), (310, 43730), (314, 43715), (323, 43691),

Gene: Jiminy\_50 Start: 44798, Stop: 43395, Start Num: 64

Candidate Starts for Jiminy\_50:

(Start: 34 @44960 has 34 MA's), (Start: 64 @44798 has 26 MA's), (Start: 67 @44795 has 65 MA's), (73, 44747), (86, 44675), (93, 44654), (Start: 121 @44558 has 1 MA's), (135, 44507), (147, 44441), (148, 44438), (151, 44414), (153, 44387), (167, 44321), (171, 44309), (181, 44273), (197, 44228), (205, 44198), (212, 44159), (217, 44120), (221, 44087), (222, 44084), (224, 44078), (227, 44060), (236, 44027), (239, 44006), (249, 43976), (265, 43862), (269, 43820), (271, 43799), (275, 43766), (285, 43694), (286, 43688), (295, 43640), (304, 43595), (310, 43571), (314, 43556), (323, 43532),

Gene: Jiraiya\_53 Start: 44951, Stop: 43548, Start Num: 64

Candidate Starts for Jiraiya\_53:

(Start: 34 @45113 has 34 MA's), (Start: 64 @44951 has 26 MA's), (Start: 67 @44948 has 65 MA's), (73, 44900), (86, 44828), (93, 44807), (Start: 121 @44711 has 1 MA's), (135, 44660), (147, 44594), (148, 44591), (151, 44567), (153, 44540), (167, 44474), (171, 44462), (181, 44426), (197, 44381), (205, 44351), (212, 44312), (217, 44273), (221, 44240), (222, 44237), (227, 44213), (236, 44180), (239, 44159), (249, 44129), (265, 44015), (269, 43973), (271, 43952), (275, 43919), (285, 43847), (286, 43841), (295, 43793), (304, 43748), (310, 43724), (314, 43709), (323, 43685),

Gene: Jolie1\_044 Start: 43527, Stop: 42097, Start Num: 61

Candidate Starts for Jolie1\_044:

(42, 43617), (46, 43593), (53, 43557), (Start: 61 @43527 has 2 MA's), (Start: 68 @43509 has 1 MA's), (103, 43305), (109, 43287), (116, 43233), (125, 43206), (134, 43170), (135, 43158), (165, 42978), (167, 42972), (173, 42954), (176, 42939), (203, 42873), (207, 42840), (209, 42831), (212, 42819), (213, 42816), (222, 42744), (224, 42738), (225, 42729), (227, 42720), (228, 42717), (240, 42663), (245, 42648), (255, 42609), (259, 42579), (269, 42486), (271, 42465), (275, 42432), (286, 42393), (294, 42348), (297, 42330), (299, 42324), (308, 42279),

Gene: KLucky39\_51 Start: 45251, Stop: 43851, Start Num: 67

Candidate Starts for KLucky39\_51:

(10, 45632), (12, 45587), (18, 45545), (Start: 27 @45464 has 5 MA's), (Start: 34 @45419 has 34 MA's), (Start: 65 @45254 has 226 MA's), (Start: 67 @45251 has 65 MA's), (Start: 68 @45245 has 1 MA's), (73, 45203), (86, 45131), (93, 45110), (Start: 121 @45014 has 1 MA's), (135, 44963), (147, 44897), (148, 44894), (151, 44870), (153, 44843), (167, 44777), (171, 44765), (181, 44729), (197, 44684), (205, 44654), (212, 44615), (217, 44576), (221, 44543), (222, 44540), (227, 44516), (236, 44483), (239, 44462), (249, 44432), (265, 44318), (269, 44276), (271, 44255), (275, 44222), (285, 44150), (286, 44144), (295, 44096), (304, 44051), (310, 44027), (314, 44012), (323, 43988),

Gene: Kahve\_50 Start: 44952, Stop: 43549, Start Num: 65

Candidate Starts for Kahve\_50:

(Start: 34 @45117 has 34 MA's), (Start: 65 @44952 has 226 MA's), (Start: 67 @44949 has 65 MA's), (Start: 68 @44943 has 1 MA's), (73, 44901), (86, 44829), (93, 44808), (Start: 121 @44712 has 1 MA's), (135, 44661), (147, 44595), (148, 44592), (151, 44568), (153, 44541), (167, 44475), (171, 44463), (181, 44427), (197, 44382), (205, 44352), (212, 44313), (217, 44274), (221, 44241), (222, 44238), (227, 44214), (236, 44181), (239, 44160), (249, 44130), (265, 44016), (269, 43974), (271, 43953), (275, 43920), (285, 43848), (286, 43842), (295, 43794), (304, 43749), (310, 43725), (314, 43710), (323, 43686),

Gene: Kailash\_51 Start: 45314, Stop: 43911, Start Num: 65

Candidate Starts for Kailash\_51:

(Start: 34 @45479 has 34 MA's), (Start: 65 @45314 has 226 MA's), (Start: 67 @45311 has 65 MA's), (Start: 68 @45305 has 1 MA's), (73, 45263), (86, 45191), (93, 45170), (Start: 121 @45074 has 1 MA's), (135, 45023), (147, 44957), (148, 44954), (153, 44903), (167, 44837), (171, 44825), (181, 44789), (197, 44744), (205, 44714), (212, 44675), (217, 44636), (221, 44603), (222, 44600), (224, 44594), (227, 44576), (236, 44543), (239, 44522), (249, 44492), (265, 44378), (269, 44336), (271, 44315), (275, 44282), (285, 44210), (286, 44204), (295, 44156), (304, 44111), (310, 44087), (314, 44072), (323, 44048),

Gene: Kaleb\_50 Start: 44997, Stop: 43630, Start Num: 67

Candidate Starts for Kaleb\_50:

(Start: 67 @44997 has 65 MA's), (75, 44934), (77, 44919), (108, 44808), (120, 44757), (134, 44709), (142, 44661), (164, 44520), (167, 44511), (190, 44466), (192, 44460), (193, 44454), (197, 44442), (217, 44337), (221, 44304), (225, 44286), (227, 44277), (236, 44244), (241, 44217), (249, 44193), (253, 44166), (258, 44139), (266, 44064), (271, 44019), (275, 43986), (282, 43965), (283, 43959), (289, 43926), (291, 43917), (293, 43908), (335, 43746), (338, 43728), (346, 43671),

Gene: Kamiyu\_49 Start: 44846, Stop: 43233, Start Num: 34

Candidate Starts for Kamiyu\_49:

(16, 44972), (20, 44966), (21, 44951), (Start: 33 @44855 has 9 MA's), (Start: 34 @44846 has 34 MA's), (51, 44750), (Start: 70 @44672 has 2 MA's), (87, 44537), (Start: 121 @44378 has 1 MA's), (127, 44363), (129, 44351), (135, 44321), (144, 44279), (153, 44201), (188, 44069), (195, 44036), (197, 44027), (216, 43934), (222, 43886), (225, 43871), (227, 43862), (236, 43829), (241, 43802), (249, 43778), (264, 43688), (275, 43577), (283, 43544), (284, 43541), (287, 43526), (292, 43505), (298, 43472),

Gene: Katniss\_52 Start: 45395, Stop: 43992, Start Num: 65

Candidate Starts for Katniss\_52:

(10, 45773), (12, 45728), (18, 45686), (Start: 27 @45605 has 5 MA's), (Start: 34 @45560 has 34 MA's), (Start: 65 @45395 has 226 MA's), (Start: 67 @45392 has 65 MA's), (Start: 68 @45386 has 1 MA's), (73, 45344), (86, 45272), (93, 45251), (Start: 121 @45155 has 1 MA's), (135, 45104), (147,



45038), (148, 45035), (153, 44984), (167, 44918), (171, 44906), (181, 44870), (197, 44825), (205, 44795), (212, 44756), (217, 44717), (221, 44684), (222, 44681), (227, 44657), (236, 44624), (239, 44603), (249, 44573), (265, 44459), (269, 44417), (271, 44396), (275, 44363), (285, 44291), (286, 44285), (295, 44237), (304, 44192), (310, 44168), (314, 44153), (323, 44129),

Gene: KayaCho\_44 Start: 43553, Stop: 42126, Start Num: 61

Candidate Starts for KayaCho\_44:

(59, 43562), (Start: 61 @43553 has 2 MA's), (Start: 68 @43535 has 1 MA's), (103, 43331), (109, 43313), (116, 43259), (134, 43196), (135, 43184), (165, 43004), (167, 42998), (173, 42980), (176, 42965), (203, 42899), (209, 42857), (212, 42845), (213, 42842), (222, 42770), (224, 42764), (227, 42746), (240, 42689), (255, 42635), (259, 42605), (262, 42584), (269, 42512), (271, 42491), (275, 42458), (294, 42374), (297, 42356), (299, 42350), (308, 42305), (310, 42302),

Gene: Keitherie\_51 Start: 45298, Stop: 43895, Start Num: 64

Candidate Starts for Keitherie\_51:

(Start: 34 @45460 has 34 MA's), (Start: 64 @45298 has 26 MA's), (Start: 67 @45295 has 65 MA's), (73, 45247), (86, 45175), (93, 45154), (Start: 121 @45058 has 1 MA's), (135, 45007), (147, 44941), (148, 44938), (151, 44914), (153, 44887), (167, 44821), (171, 44809), (181, 44773), (197, 44728), (205, 44698), (212, 44659), (217, 44620), (221, 44587), (222, 44584), (227, 44560), (236, 44527), (239, 44506), (249, 44476), (265, 44362), (269, 44320), (271, 44299), (275, 44266), (285, 44194), (286, 44188), (295, 44140), (304, 44095), (310, 44071), (314, 44056), (323, 44032),

Gene: Kheth\_50 Start: 44886, Stop: 43519, Start Num: 67

Candidate Starts for Kheth\_50:

(Start: 67 @44886 has 65 MA's), (75, 44823), (77, 44808), (108, 44697), (120, 44646), (134, 44598), (142, 44550), (164, 44409), (167, 44400), (190, 44355), (192, 44349), (193, 44343), (197, 44331), (217, 44226), (221, 44193), (227, 44166), (236, 44133), (241, 44106), (249, 44082), (253, 44055), (258, 44028), (266, 43953), (271, 43908), (275, 43875), (282, 43854), (283, 43848), (289, 43815), (293, 43797), (335, 43635), (338, 43617), (346, 43560),

Gene: Kikipoo\_52 Start: 45386, Stop: 43983, Start Num: 65

Candidate Starts for Kikipoo\_52:

(10, 45764), (12, 45719), (18, 45677), (Start: 27 @45596 has 5 MA's), (Start: 34 @45551 has 34 MA's), (Start: 65 @45386 has 226 MA's), (Start: 67 @45383 has 65 MA's), (Start: 68 @45377 has 1 MA's), (73, 45335), (86, 45263), (93, 45242), (Start: 121 @45146 has 1 MA's), (135, 45095), (147, 45029), (148, 45026), (153, 44975), (167, 44909), (171, 44897), (181, 44861), (197, 44816), (205, 44786), (212, 44747), (217, 44708), (221, 44675), (222, 44672), (227, 44648), (236, 44615), (239, 44594), (249, 44564), (265, 44450), (269, 44408), (271, 44387), (275, 44354), (285, 44282), (286, 44276), (295, 44228), (304, 44183), (310, 44159), (314, 44144), (323, 44120),

Gene: Kimbrough\_51 Start: 44959, Stop: 43556, Start Num: 65

Candidate Starts for Kimbrough\_51:

(Start: 34 @45124 has 34 MA's), (Start: 65 @44959 has 226 MA's), (Start: 67 @44956 has 65 MA's), (Start: 68 @44950 has 1 MA's), (73, 44908), (86, 44836), (93, 44815), (Start: 121 @44719 has 1 MA's), (135, 44668), (147, 44602), (148, 44599), (151, 44575), (153, 44548), (167, 44482), (171, 44470), (181, 44434), (197, 44389), (205, 44359), (212, 44320), (217, 44281), (221, 44248), (222, 44245), (227, 44221), (236, 44188), (239, 44167), (249, 44137), (265, 44023), (269, 43981), (271, 43960), (275, 43927), (285, 43855), (286, 43849), (295, 43801), (304, 43756), (310, 43732), (314, 43717), (323, 43693),

Gene: KingTut\_42 Start: 40622, Stop: 39219, Start Num: 65

Candidate Starts for KingTut\_42:

(Start: 34 @40787 has 34 MA's), (Start: 65 @40622 has 226 MA's), (Start: 67 @40619 has 65 MA's), (Start: 68 @40613 has 1 MA's), (73, 40571), (86, 40499), (93, 40478), (Start: 121 @40382 has 1 MA's), (135, 40331), (147, 40265), (148, 40262), (153, 40211), (167, 40145), (171, 40133), (181, 40097), (197, 40052), (205, 40022), (212, 39983), (217, 39944), (221, 39911), (222, 39908), (224, 39902), (227, 39884), (236, 39851), (239, 39830), (249, 39800), (265, 39686), (269, 39644), (271, 39623), (275, 39590), (285, 39518), (286, 39512), (295, 39464), (304, 39419), (310, 39395), (314, 39380), (323, 39356),

Gene: KingVeVeVe\_51 Start: 45227, Stop: 43827, Start Num: 67

Candidate Starts for KingVeVeVe\_51:

(10, 45608), (12, 45563), (18, 45521), (Start: 27 @45440 has 5 MA's), (Start: 34 @45395 has 34 MA's), (Start: 65 @45230 has 226 MA's), (Start: 67 @45227 has 65 MA's), (Start: 68 @45221 has 1 MA's), (73, 45179), (86, 45107), (93, 45086), (Start: 121 @44990 has 1 MA's), (135, 44939), (147, 44873), (148, 44870), (153, 44819), (167, 44753), (171, 44741), (181, 44705), (197, 44660), (205, 44630), (212, 44591), (217, 44552), (221, 44519), (222, 44516), (227, 44492), (236, 44459), (239, 44438), (249, 44408), (265, 44294), (269, 44252), (271, 44231), (275, 44198), (285, 44126), (286, 44120), (295, 44072), (304, 44027), (310, 44003), (314, 43988), (323, 43964),

Gene: KlimbOn\_51 Start: 45248, Stop: 43845, Start Num: 65

Candidate Starts for KlimbOn\_51:

(10, 45626), (12, 45581), (18, 45539), (Start: 27 @45458 has 5 MA's), (Start: 34 @45413 has 34 MA's), (Start: 65 @45248 has 226 MA's), (Start: 67 @45245 has 65 MA's), (Start: 68 @45239 has 1 MA's), (73, 45197), (86, 45125), (93, 45104), (Start: 121 @45008 has 1 MA's), (135, 44957), (147, 44891), (148, 44888), (151, 44864), (153, 44837), (167, 44771), (171, 44759), (181, 44723), (197, 44678), (205, 44648), (212, 44609), (217, 44570), (221, 44537), (222, 44534), (227, 44510), (236, 44477), (239, 44456), (249, 44426), (269, 44270), (271, 44249), (275, 44216), (285, 44144), (286, 44138), (295, 44090), (304, 44045), (310, 44021), (314, 44006), (323, 43982),

Gene: Kloppinator\_52 Start: 45661, Stop: 44258, Start Num: 65

Candidate Starts for Kloppinator\_52:

(10, 46039), (12, 45994), (18, 45952), (Start: 27 @45871 has 5 MA's), (Start: 34 @45826 has 34 MA's), (Start: 65 @45661 has 226 MA's), (Start: 67 @45658 has 65 MA's), (Start: 68 @45652 has 1 MA's), (73, 45610), (86, 45538), (93, 45517), (Start: 121 @45421 has 1 MA's), (135, 45370), (147, 45304), (148, 45301), (153, 45250), (167, 45184), (171, 45172), (181, 45136), (197, 45091), (205, 45061), (212, 45022), (217, 44983), (221, 44950), (222, 44947), (227, 44923), (236, 44890), (239, 44869), (249, 44839), (265, 44725), (269, 44683), (271, 44662), (275, 44629), (285, 44557), (286, 44551), (295, 44503), (304, 44458), (310, 44434), (314, 44419), (323, 44395),

Gene: Klocker\_52 Start: 47486, Stop: 46047, Start Num: 67

Candidate Starts for Klocker\_52:

(22, 47720), (24, 47714), (Start: 34 @47633 has 34 MA's), (Start: 67 @47486 has 65 MA's), (Start: 68 @47480 has 1 MA's), (73, 47438), (105, 47279), (106, 47276), (109, 47270), (Start: 121 @47195 has 1 MA's), (137, 47132), (153, 47024), (172, 46943), (173, 46940), (195, 46886), (203, 46865), (207, 46832), (209, 46823), (216, 46784), (220, 46745), (222, 46736), (225, 46721), (228, 46709), (231, 46697), (237, 46676), (239, 46658), (241, 46652), (245, 46640), (250, 46607), (255, 46562), (260, 46529), (261, 46514), (264, 46499), (265, 46481), (266, 46466), (267, 46454), (271, 46418), (275, 46385), (282, 46364), (285, 46352), (286, 46346), (303, 46256), (307, 46235), (310, 46229), (319, 46208), (330, 46163), (340, 46106), (346, 46070),

Gene: Kronus\_48 Start: 45468, Stop: 43846, Start Num: 33

Candidate Starts for Kronus\_48:

(16, 45585), (20, 45579), (21, 45564), (Start: 33 @45468 has 9 MA's), (Start: 34 @45459 has 34 MA's), (51, 45363), (Start: 70 @45285 has 2 MA's), (87, 45150), (Start: 121 @44991 has 1 MA's),

(127, 44976), (129, 44964), (135, 44934), (144, 44892), (153, 44814), (188, 44682), (195, 44649), (197, 44640), (216, 44547), (222, 44499), (225, 44484), (227, 44475), (241, 44415), (249, 44391), (264, 44301), (275, 44190), (283, 44157), (284, 44154), (287, 44139), (292, 44118), (298, 44085),

Gene: Kwadwo\_50 Start: 44934, Stop: 43531, Start Num: 65

Candidate Starts for Kwadwo\_50:

(10, 45312), (12, 45267), (18, 45225), (Start: 27 @45144 has 5 MA's), (Start: 34 @45099 has 34 MA's), (Start: 65 @44934 has 226 MA's), (Start: 67 @44931 has 65 MA's), (Start: 68 @44925 has 1 MA's), (73, 44883), (86, 44811), (93, 44790), (Start: 121 @44694 has 1 MA's), (135, 44643), (147, 44577), (148, 44574), (153, 44523), (167, 44457), (171, 44445), (181, 44409), (197, 44364), (205, 44334), (212, 44295), (217, 44256), (221, 44223), (222, 44220), (227, 44196), (236, 44163), (239, 44142), (249, 44112), (265, 43998), (269, 43956), (271, 43935), (275, 43902), (285, 43830), (286, 43824), (295, 43776), (304, 43731), (310, 43707), (314, 43692), (323, 43668),

Gene: Kwksand96\_50 Start: 44809, Stop: 43406, Start Num: 65

Candidate Starts for Kwksand96\_50:

(Start: 34 @44974 has 34 MA's), (Start: 65 @44809 has 226 MA's), (Start: 67 @44806 has 65 MA's), (Start: 68 @44800 has 1 MA's), (73, 44758), (86, 44686), (93, 44665), (Start: 121 @44569 has 1 MA's), (135, 44518), (147, 44452), (148, 44449), (153, 44398), (167, 44332), (171, 44320), (181, 44284), (197, 44239), (205, 44209), (212, 44170), (217, 44131), (221, 44098), (222, 44095), (224, 44089), (227, 44071), (236, 44038), (239, 44017), (249, 43987), (265, 43873), (269, 43831), (271, 43810), (275, 43777), (285, 43705), (286, 43699), (295, 43651), (304, 43606), (310, 43582), (314, 43567), (323, 43543),

Gene: Labeouficaum\_50 Start: 44804, Stop: 43401, Start Num: 65

Candidate Starts for Labeouficaum\_50:

(10, 45182), (12, 45137), (18, 45095), (Start: 27 @45014 has 5 MA's), (Start: 34 @44969 has 34 MA's), (Start: 65 @44804 has 226 MA's), (Start: 67 @44801 has 65 MA's), (Start: 68 @44795 has 1 MA's), (73, 44753), (86, 44681), (93, 44660), (Start: 121 @44564 has 1 MA's), (135, 44513), (147, 44447), (148, 44444), (153, 44393), (167, 44327), (171, 44315), (181, 44279), (197, 44234), (205, 44204), (212, 44165), (217, 44126), (221, 44093), (222, 44090), (224, 44084), (227, 44066), (236, 44033), (239, 44012), (249, 43982), (265, 43868), (269, 43826), (271, 43805), (275, 43772), (285, 43700), (286, 43694), (295, 43646), (304, 43601), (310, 43577), (314, 43562), (323, 43538),

Gene: Lars\_50 Start: 44957, Stop: 43590, Start Num: 67

Candidate Starts for Lars\_50:

(Start: 67 @44957 has 65 MA's), (75, 44894), (77, 44879), (108, 44768), (120, 44717), (134, 44669), (142, 44621), (164, 44480), (167, 44471), (190, 44426), (192, 44420), (193, 44414), (197, 44402), (217, 44297), (221, 44264), (225, 44246), (227, 44237), (236, 44204), (241, 44177), (249, 44153), (253, 44126), (258, 44099), (266, 44024), (271, 43979), (275, 43946), (282, 43925), (283, 43919), (289, 43886), (293, 43868), (335, 43706), (338, 43688), (346, 43631),

Gene: LasagnaCat\_52 Start: 45380, Stop: 43977, Start Num: 65

Candidate Starts for LasagnaCat\_52:

(Start: 34 @45545 has 34 MA's), (Start: 65 @45380 has 226 MA's), (Start: 67 @45377 has 65 MA's), (Start: 68 @45371 has 1 MA's), (73, 45329), (86, 45257), (93, 45236), (Start: 121 @45140 has 1 MA's), (135, 45089), (147, 45023), (148, 45020), (153, 44969), (167, 44903), (171, 44891), (181, 44855), (197, 44810), (205, 44780), (212, 44741), (217, 44702), (221, 44669), (222, 44666), (227, 44642), (236, 44609), (239, 44588), (249, 44558), (265, 44444), (269, 44402), (271, 44381), (275, 44348), (285, 44276), (286, 44270), (295, 44222), (304, 44177), (310, 44153), (314, 44138), (323, 44114),

Gene: Lasso\_51 Start: 45209, Stop: 43806, Start Num: 65

Candidate Starts for Lasso\_51:

(10, 45587), (12, 45542), (18, 45500), (Start: 27 @45419 has 5 MA's), (Start: 34 @45374 has 34 MA's), (Start: 65 @45209 has 226 MA's), (Start: 67 @45206 has 65 MA's), (Start: 68 @45200 has 1 MA's), (73, 45158), (86, 45086), (93, 45065), (Start: 121 @44969 has 1 MA's), (135, 44918), (147, 44852), (148, 44849), (153, 44798), (167, 44732), (171, 44720), (181, 44684), (197, 44639), (205, 44609), (212, 44570), (217, 44531), (221, 44498), (222, 44495), (227, 44471), (236, 44438), (239, 44417), (249, 44387), (265, 44273), (269, 44231), (271, 44210), (275, 44177), (285, 44105), (286, 44099), (295, 44051), (304, 44006), (310, 43982), (314, 43967), (323, 43943),

Gene: Laurie\_49 Start: 44345, Stop: 42978, Start Num: 67

Candidate Starts for Laurie\_49:

(Start: 67 @44345 has 65 MA's), (75, 44282), (77, 44267), (108, 44156), (120, 44105), (134, 44057), (142, 44009), (162, 43874), (164, 43868), (167, 43859), (190, 43814), (192, 43808), (193, 43802), (197, 43790), (217, 43685), (221, 43652), (223, 43646), (227, 43625), (236, 43592), (241, 43565), (249, 43541), (253, 43514), (258, 43487), (266, 43412), (271, 43367), (275, 43334), (282, 43313), (283, 43307), (289, 43274), (293, 43256), (319, 43157), (335, 43094), (338, 43076), (346, 43019),

Gene: LeeLot\_51 Start: 45258, Stop: 43858, Start Num: 67

Candidate Starts for LeeLot\_51:

(Start: 34 @45426 has 34 MA's), (Start: 65 @45261 has 226 MA's), (Start: 67 @45258 has 65 MA's), (Start: 68 @45252 has 1 MA's), (73, 45210), (86, 45138), (93, 45117), (Start: 121 @45021 has 1 MA's), (135, 44970), (147, 44904), (148, 44901), (151, 44877), (153, 44850), (167, 44784), (171, 44772), (181, 44736), (197, 44691), (205, 44661), (212, 44622), (217, 44583), (221, 44550), (222, 44547), (227, 44523), (236, 44490), (239, 44469), (249, 44439), (265, 44325), (269, 44283), (271, 44262), (275, 44229), (285, 44157), (286, 44151), (295, 44103), (304, 44058), (310, 44034), (314, 44019), (323, 43995),

Gene: Lego3393\_50 Start: 45389, Stop: 43986, Start Num: 65

Candidate Starts for Lego3393\_50:

(10, 45767), (12, 45722), (18, 45680), (Start: 27 @45599 has 5 MA's), (Start: 34 @45554 has 34 MA's), (Start: 65 @45389 has 226 MA's), (Start: 67 @45386 has 65 MA's), (Start: 68 @45380 has 1 MA's), (73, 45338), (86, 45266), (93, 45245), (Start: 121 @45149 has 1 MA's), (135, 45098), (147, 45032), (148, 45029), (153, 44978), (167, 44912), (171, 44900), (181, 44864), (197, 44819), (205, 44789), (212, 44750), (217, 44711), (221, 44678), (222, 44675), (227, 44651), (236, 44618), (239, 44597), (249, 44567), (265, 44453), (269, 44411), (271, 44390), (275, 44357), (285, 44285), (286, 44279), (295, 44231), (304, 44186), (310, 44162), (314, 44147), (323, 44123),

Gene: Legolas\_51 Start: 44976, Stop: 43576, Start Num: 67

Candidate Starts for Legolas\_51:

(10, 45357), (12, 45312), (18, 45270), (Start: 27 @45189 has 5 MA's), (Start: 34 @45144 has 34 MA's), (Start: 65 @44979 has 226 MA's), (Start: 67 @44976 has 65 MA's), (Start: 68 @44970 has 1 MA's), (73, 44928), (86, 44856), (93, 44835), (Start: 121 @44739 has 1 MA's), (135, 44688), (147, 44622), (148, 44619), (153, 44568), (167, 44502), (171, 44490), (181, 44454), (197, 44409), (205, 44379), (212, 44340), (217, 44301), (221, 44268), (222, 44265), (227, 44241), (236, 44208), (239, 44187), (249, 44157), (265, 44043), (269, 44001), (271, 43980), (275, 43947), (285, 43875), (286, 43869), (295, 43821), (304, 43776), (310, 43752), (314, 43737), (323, 43713),

Gene: LeiMonet\_52 Start: 44941, Stop: 43538, Start Num: 65

Candidate Starts for LeiMonet\_52:

(10, 45319), (12, 45274), (18, 45232), (Start: 27 @45151 has 5 MA's), (Start: 34 @45106 has 34 MA's), (Start: 65 @44941 has 226 MA's), (Start: 67 @44938 has 65 MA's), (Start: 68 @44932 has 1 MA's), (73, 44890), (86, 44818), (93, 44797), (Start: 121 @44701 has 1 MA's), (135, 44650), (147, 44584), (148, 44581), (153, 44530), (167, 44464), (171, 44452), (181, 44416), (197, 44371), (205,

44341), (212, 44302), (217, 44263), (221, 44230), (222, 44227), (227, 44203), (236, 44170), (239, 44149), (249, 44119), (265, 44005), (269, 43963), (271, 43942), (275, 43909), (285, 43837), (286, 43831), (295, 43783), (304, 43738), (310, 43714), (314, 43699), (323, 43675),

Gene: LemonSlice\_51 Start: 44946, Stop: 43543, Start Num: 65

Candidate Starts for LemonSlice\_51:

(10, 45324), (12, 45279), (18, 45237), (Start: 27 @45156 has 5 MA's), (Start: 34 @45111 has 34 MA's), (Start: 65 @44946 has 226 MA's), (Start: 67 @44943 has 65 MA's), (Start: 68 @44937 has 1 MA's), (73, 44895), (86, 44823), (93, 44802), (Start: 121 @44706 has 1 MA's), (135, 44655), (147, 44589), (148, 44586), (153, 44535), (167, 44469), (171, 44457), (181, 44421), (197, 44376), (205, 44346), (212, 44307), (217, 44268), (221, 44235), (222, 44232), (227, 44208), (236, 44175), (239, 44154), (249, 44124), (265, 44010), (269, 43968), (271, 43947), (275, 43914), (285, 43842), (286, 43836), (295, 43788), (304, 43743), (310, 43719), (314, 43704), (323, 43680),

Gene: Lephleur\_50 Start: 44863, Stop: 43496, Start Num: 67

Candidate Starts for Lephleur\_50:

(Start: 67 @44863 has 65 MA's), (75, 44800), (77, 44785), (108, 44674), (120, 44623), (134, 44575), (142, 44527), (164, 44386), (167, 44377), (190, 44332), (192, 44326), (193, 44320), (197, 44308), (217, 44203), (221, 44170), (227, 44143), (236, 44110), (241, 44083), (249, 44059), (253, 44032), (258, 44005), (266, 43930), (271, 43885), (275, 43852), (282, 43831), (283, 43825), (289, 43792), (293, 43774), (335, 43612), (338, 43594), (346, 43537),

Gene: LestyG\_49 Start: 44887, Stop: 43265, Start Num: 33

Candidate Starts for LestyG\_49:

(16, 45004), (20, 44998), (21, 44983), (Start: 33 @44887 has 9 MA's), (Start: 34 @44878 has 34 MA's), (51, 44782), (Start: 70 @44704 has 2 MA's), (87, 44569), (Start: 121 @44410 has 1 MA's), (127, 44395), (129, 44383), (135, 44353), (144, 44311), (153, 44233), (188, 44101), (195, 44068), (197, 44059), (216, 43966), (222, 43918), (225, 43903), (227, 43894), (241, 43834), (249, 43810), (264, 43720), (275, 43609), (283, 43576), (284, 43573), (287, 43558), (292, 43537), (298, 43504),

Gene: Ligma\_44 Start: 37982, Stop: 36669, Start Num: 37

Candidate Starts for Ligma\_44:

(Start: 36 @37985 has 1 MA's), (Start: 37 @37982 has 3 MA's), (Start: 121 @37823 has 1 MA's), (124, 37817), (135, 37766), (195, 37511), (202, 37490), (210, 37445), (213, 37433), (236, 37304), (241, 37277), (249, 37253), (256, 37223), (257, 37205), (260, 37193), (264, 37163), (266, 37130), (271, 37085), (275, 37052), (279, 37019), (283, 36992), (292, 36947), (293, 36941), (298, 36914), (299, 36911), (310, 36863), (346, 36701),

Gene: LilMcDreamy\_48 Start: 45351, Stop: 43921, Start Num: 57

Candidate Starts for LilMcDreamy\_48:

(Start: 57 @45351 has 1 MA's), (Start: 121 @45084 has 1 MA's), (153, 44913), (173, 44835), (174, 44829), (195, 44775), (213, 44697), (216, 44673), (217, 44661), (227, 44601), (241, 44541), (249, 44517), (251, 44514), (257, 44469), (267, 44382), (275, 44316), (277, 44298), (283, 44235), (285, 44229), (292, 44190), (293, 44184), (298, 44157), (311, 44100), (330, 44031),

Gene: LittleMunchkin\_46 Start: 41233, Stop: 39968, Start Num: 40

Candidate Starts for LittleMunchkin\_46:

(Start: 40 @41233 has 6 MA's), (50, 41194), (Start: 121 @41107 has 1 MA's), (124, 41101), (129, 41080), (135, 41050), (182, 40819), (202, 40774), (213, 40717), (217, 40681), (221, 40648), (222, 40645), (225, 40630), (227, 40621), (231, 40606), (232, 40603), (236, 40588), (241, 40561), (249, 40537), (267, 40402), (271, 40369), (275, 40336), (276, 40327), (279, 40303), (282, 40291), (283, 40276), (293, 40225), (298, 40198), (331, 40075), (338, 40042),

Gene: LizLemon\_50 Start: 44979, Stop: 43612, Start Num: 67

Candidate Starts for LizLemon\_50:

(Start: 67 @44979 has 65 MA's), (75, 44916), (77, 44901), (108, 44790), (120, 44739), (134, 44691), (142, 44643), (164, 44502), (167, 44493), (190, 44448), (192, 44442), (193, 44436), (197, 44424), (217, 44319), (221, 44286), (225, 44268), (227, 44259), (236, 44226), (241, 44199), (249, 44175), (253, 44148), (258, 44121), (266, 44046), (271, 44001), (275, 43968), (282, 43947), (283, 43941), (289, 43908), (293, 43890), (335, 43728), (338, 43710), (346, 43653),

Gene: Lolalove\_47 Start: 45711, Stop: 44371, Start Num: 65

Candidate Starts for Lolalove\_47:

(Start: 64 @45714 has 26 MA's), (Start: 65 @45711 has 226 MA's), (Start: 68 @45702 has 1 MA's), (69, 45696), (76, 45645), (116, 45498), (130, 45453), (135, 45432), (157, 45291), (161, 45267), (167, 45246), (168, 45243), (173, 45228), (176, 45213), (203, 45144), (205, 45129), (207, 45111), (213, 45087), (222, 45015), (227, 44991), (236, 44958), (237, 44955), (239, 44937), (249, 44907), (260, 44847), (262, 44829), (264, 44817), (267, 44772), (268, 44766), (269, 44757), (274, 44727), (275, 44703), (286, 44664), (294, 44619), (298, 44598), (299, 44595), (319, 44526), (323, 44508),

Gene: Longacauda\_50 Start: 44942, Stop: 43539, Start Num: 65

Candidate Starts for Longacauda\_50:

(10, 45320), (12, 45275), (18, 45233), (Start: 27 @45152 has 5 MA's), (Start: 34 @45107 has 34 MA's), (Start: 65 @44942 has 226 MA's), (Start: 67 @44939 has 65 MA's), (Start: 68 @44933 has 1 MA's), (73, 44891), (86, 44819), (93, 44798), (Start: 121 @44702 has 1 MA's), (135, 44651), (147, 44585), (148, 44582), (153, 44531), (167, 44465), (171, 44453), (181, 44417), (197, 44372), (205, 44342), (212, 44303), (217, 44264), (221, 44231), (222, 44228), (227, 44204), (236, 44171), (239, 44150), (249, 44120), (265, 44006), (269, 43964), (271, 43943), (275, 43910), (285, 43838), (286, 43832), (295, 43784), (304, 43739), (310, 43715), (314, 43700), (323, 43676),

Gene: Lopsy\_50 Start: 44807, Stop: 43404, Start Num: 65

Candidate Starts for Lopsy\_50:

(10, 45185), (12, 45140), (18, 45098), (Start: 27 @45017 has 5 MA's), (Start: 34 @44972 has 34 MA's), (Start: 65 @44807 has 226 MA's), (Start: 67 @44804 has 65 MA's), (Start: 68 @44798 has 1 MA's), (73, 44756), (86, 44684), (93, 44663), (Start: 121 @44567 has 1 MA's), (135, 44516), (147, 44450), (148, 44447), (153, 44396), (167, 44330), (171, 44318), (181, 44282), (197, 44237), (205, 44207), (212, 44168), (217, 44129), (221, 44096), (222, 44093), (227, 44069), (236, 44036), (239, 44015), (249, 43985), (265, 43871), (269, 43829), (271, 43808), (275, 43775), (285, 43703), (286, 43697), (304, 43604), (310, 43580), (314, 43565), (323, 43541),

Gene: LostAndPhound\_50 Start: 44961, Stop: 43558, Start Num: 65

Candidate Starts for LostAndPhound\_50:

(10, 45339), (12, 45294), (18, 45252), (Start: 27 @45171 has 5 MA's), (Start: 34 @45126 has 34 MA's), (Start: 65 @44961 has 226 MA's), (Start: 67 @44958 has 65 MA's), (Start: 68 @44952 has 1 MA's), (73, 44910), (86, 44838), (93, 44817), (Start: 121 @44721 has 1 MA's), (135, 44670), (147, 44604), (148, 44601), (153, 44550), (167, 44484), (171, 44472), (181, 44436), (197, 44391), (205, 44361), (212, 44322), (217, 44283), (221, 44250), (222, 44247), (227, 44223), (236, 44190), (239, 44169), (249, 44139), (265, 44025), (269, 43983), (271, 43962), (275, 43929), (285, 43857), (286, 43851), (295, 43803), (304, 43758), (310, 43734), (314, 43719), (323, 43695),

Gene: LuckyMarjie\_50 Start: 44949, Stop: 43546, Start Num: 65

Candidate Starts for LuckyMarjie\_50:

(Start: 34 @45114 has 34 MA's), (Start: 65 @44949 has 226 MA's), (Start: 67 @44946 has 65 MA's), (Start: 68 @44940 has 1 MA's), (73, 44898), (86, 44826), (93, 44805), (Start: 121 @44709 has 1 MA's), (135, 44658), (147, 44592), (148, 44589), (153, 44538), (167, 44472), (171, 44460), (181, 44424), (197, 44379), (205, 44349), (212, 44310), (217, 44271), (221, 44238), (222, 44235), (227,

44211), (236, 44178), (239, 44157), (249, 44127), (265, 44013), (269, 43971), (271, 43950), (275, 43917), (285, 43845), (286, 43839), (295, 43791), (304, 43746), (310, 43722), (314, 43707), (323, 43683),

Gene: Lulumae\_50 Start: 44931, Stop: 43531, Start Num: 67

Candidate Starts for Lulumae\_50:

(Start: 34 @45099 has 34 MA's), (Start: 65 @44934 has 226 MA's), (Start: 67 @44931 has 65 MA's), (Start: 68 @44925 has 1 MA's), (73, 44883), (86, 44811), (93, 44790), (Start: 121 @44694 has 1 MA's), (135, 44643), (147, 44577), (148, 44574), (153, 44523), (167, 44457), (171, 44445), (181, 44409), (197, 44364), (205, 44334), (212, 44295), (217, 44256), (221, 44223), (222, 44220), (227, 44196), (236, 44163), (239, 44142), (249, 44112), (265, 43998), (269, 43956), (271, 43935), (275, 43902), (285, 43830), (286, 43824), (295, 43776), (304, 43731), (310, 43707), (314, 43692), (323, 43668),

Gene: Lulwa\_51 Start: 45227, Stop: 43824, Start Num: 65

Candidate Starts for Lulwa\_51:

(Start: 34 @45392 has 34 MA's), (Start: 65 @45227 has 226 MA's), (Start: 67 @45224 has 65 MA's), (Start: 68 @45218 has 1 MA's), (73, 45176), (86, 45104), (93, 45083), (Start: 121 @44987 has 1 MA's), (135, 44936), (147, 44870), (148, 44867), (153, 44816), (167, 44750), (171, 44738), (181, 44702), (197, 44657), (205, 44627), (212, 44588), (217, 44549), (221, 44516), (222, 44513), (227, 44489), (236, 44456), (239, 44435), (249, 44405), (265, 44291), (269, 44249), (271, 44228), (275, 44195), (285, 44123), (286, 44117), (295, 44069), (304, 44024), (310, 44000), (314, 43985), (323, 43961),

Gene: Lumine\_50 Start: 44930, Stop: 43527, Start Num: 65

Candidate Starts for Lumine\_50:

(Start: 34 @45095 has 34 MA's), (Start: 65 @44930 has 226 MA's), (Start: 67 @44927 has 65 MA's), (Start: 68 @44921 has 1 MA's), (73, 44879), (86, 44807), (93, 44786), (Start: 121 @44690 has 1 MA's), (135, 44639), (147, 44573), (148, 44570), (153, 44519), (167, 44453), (171, 44441), (181, 44405), (197, 44360), (205, 44330), (212, 44291), (217, 44252), (221, 44219), (222, 44216), (224, 44210), (227, 44192), (236, 44159), (239, 44138), (249, 44108), (265, 43994), (269, 43952), (271, 43931), (275, 43898), (285, 43826), (286, 43820), (295, 43772), (304, 43727), (310, 43703), (314, 43688), (323, 43664),

Gene: MRabcd\_50 Start: 44940, Stop: 43537, Start Num: 65

Candidate Starts for MRabcd\_50:

(10, 45318), (12, 45273), (18, 45231), (Start: 27 @45150 has 5 MA's), (Start: 34 @45105 has 34 MA's), (Start: 65 @44940 has 226 MA's), (Start: 67 @44937 has 65 MA's), (Start: 68 @44931 has 1 MA's), (73, 44889), (86, 44817), (93, 44796), (Start: 121 @44700 has 1 MA's), (135, 44649), (147, 44583), (148, 44580), (153, 44529), (167, 44463), (171, 44451), (181, 44415), (197, 44370), (205, 44340), (212, 44301), (217, 44262), (221, 44229), (222, 44226), (227, 44202), (236, 44169), (239, 44148), (249, 44118), (265, 44004), (269, 43962), (271, 43941), (275, 43908), (285, 43836), (286, 43830), (295, 43782), (304, 43737), (310, 43713), (314, 43698), (323, 43674),

Gene: Mag7\_50 Start: 44864, Stop: 43461, Start Num: 65

Candidate Starts for Mag7\_50:

(Start: 34 @45029 has 34 MA's), (Start: 65 @44864 has 226 MA's), (Start: 67 @44861 has 65 MA's), (Start: 68 @44855 has 1 MA's), (73, 44813), (86, 44741), (93, 44720), (Start: 121 @44624 has 1 MA's), (135, 44573), (147, 44507), (148, 44504), (153, 44453), (167, 44387), (171, 44375), (181, 44339), (197, 44294), (205, 44264), (212, 44225), (217, 44186), (221, 44153), (222, 44150), (224, 44144), (227, 44126), (236, 44093), (239, 44072), (249, 44042), (265, 43928), (269, 43886), (271, 43865), (275, 43832), (285, 43760), (286, 43754), (295, 43706), (304, 43661), (310, 43637), (314, 43622), (323, 43598),

Gene: Magic8\_51 Start: 45299, Stop: 43896, Start Num: 65

Candidate Starts for Magic8\_51:

(Start: 34 @45464 has 34 MA's), (Start: 65 @45299 has 226 MA's), (Start: 67 @45296 has 65 MA's), (Start: 68 @45290 has 1 MA's), (73, 45248), (86, 45176), (93, 45155), (Start: 121 @45059 has 1 MA's), (135, 45008), (147, 44942), (148, 44939), (153, 44888), (167, 44822), (171, 44810), (181, 44774), (197, 44729), (205, 44699), (212, 44660), (217, 44621), (221, 44588), (222, 44585), (224, 44579), (227, 44561), (236, 44528), (239, 44507), (249, 44477), (265, 44363), (269, 44321), (271, 44300), (275, 44267), (285, 44195), (286, 44189), (295, 44141), (304, 44096), (310, 44072), (314, 44057), (323, 44033),

Gene: Magpie\_45 Start: 45553, Stop: 44210, Start Num: 64

Candidate Starts for Magpie\_45:

(Start: 64 @45553 has 26 MA's), (Start: 65 @45550 has 226 MA's), (Start: 68 @45541 has 1 MA's), (69, 45535), (76, 45484), (116, 45337), (130, 45292), (135, 45271), (157, 45130), (161, 45106), (167, 45085), (168, 45082), (173, 45067), (176, 45052), (203, 44983), (205, 44968), (213, 44926), (222, 44854), (225, 44839), (227, 44830), (236, 44797), (237, 44794), (239, 44776), (249, 44746), (260, 44686), (262, 44668), (264, 44656), (267, 44611), (268, 44605), (269, 44596), (274, 44566), (275, 44542), (286, 44503), (294, 44458), (298, 44437), (299, 44434), (319, 44365), (323, 44347),

Gene: Mahdia\_31 Start: 24495, Stop: 23398, Start Num: 118

Candidate Starts for Mahdia\_31:

(19, 25017), (35, 24885), (49, 24807), (Start: 118 @24495 has 5 MA's), (149, 24360), (161, 24273), (163, 24264), (219, 24093), (231, 24039), (248, 23967), (256, 23931), (261, 23889), (272, 23793), (275, 23763), (283, 23736), (292, 23688), (296, 23661), (304, 23628), (312, 23595), (318, 23568), (321, 23547), (326, 23532),

Gene: Maih\_43 Start: 36174, Stop: 34984, Start Num: 92

Candidate Starts for Maih\_43:

(55, 36393), (66, 36342), (74, 36285), (Start: 92 @36174 has 5 MA's), (Start: 99 @36150 has 5 MA's), (114, 36111), (126, 36072), (136, 36027), (138, 36006), (154, 35901), (155, 35895), (163, 35850), (167, 35838), (199, 35781), (204, 35775), (212, 35730), (215, 35712), (225, 35640), (233, 35610), (240, 35574), (241, 35571), (244, 35562), (291, 35286), (293, 35277), (302, 35232), (306, 35208), (308, 35199), (316, 35166), (329, 35109), (334, 35091), (347, 34998), (348, 34995),

Gene: MakoManhole\_47 Start: 40329, Stop: 38938, Start Num: 27

Candidate Starts for MakoManhole\_47:

(4, 40668), (5, 40644), (7, 40533), (11, 40488), (Start: 27 @40329 has 5 MA's), (31, 40302), (Start: 41 @40251 has 1 MA's), (71, 40107), (124, 40101), (133, 40068), (135, 40050), (141, 40017), (143, 40011), (155, 39921), (168, 39861), (194, 39792), (209, 39729), (219, 39657), (221, 39645), (225, 39627), (227, 39618), (236, 39585), (249, 39534), (256, 39504), (259, 39477), (260, 39474), (271, 39366), (276, 39324), (278, 39291), (283, 39246), (286, 39234), (292, 39201), (293, 39195), (298, 39168),

Gene: Mana\_50 Start: 44949, Stop: 43546, Start Num: 65

Candidate Starts for Mana\_50:

(10, 45327), (12, 45282), (18, 45240), (Start: 27 @45159 has 5 MA's), (Start: 34 @45114 has 34 MA's), (Start: 65 @44949 has 226 MA's), (Start: 67 @44946 has 65 MA's), (Start: 68 @44940 has 1 MA's), (73, 44898), (86, 44826), (93, 44805), (Start: 121 @44709 has 1 MA's), (135, 44658), (147, 44592), (148, 44589), (153, 44538), (167, 44472), (171, 44460), (181, 44424), (197, 44379), (205, 44349), (212, 44310), (217, 44271), (221, 44238), (222, 44235), (227, 44211), (236, 44178), (239, 44157), (249, 44127), (265, 44013), (269, 43971), (271, 43950), (275, 43917), (285, 43845), (286, 43839), (295, 43791), (304, 43746), (310, 43722), (314, 43707), (323, 43683),



Gene: Manad\_51 Start: 45209, Stop: 43806, Start Num: 65

Candidate Starts for Manad\_51:

(10, 45587), (12, 45542), (18, 45500), (Start: 27 @45419 has 5 MA's), (Start: 34 @45374 has 34 MA's), (Start: 65 @45209 has 226 MA's), (Start: 67 @45206 has 65 MA's), (Start: 68 @45200 has 1 MA's), (73, 45158), (86, 45086), (93, 45065), (Start: 121 @44969 has 1 MA's), (135, 44918), (147, 44852), (148, 44849), (153, 44798), (167, 44732), (171, 44720), (181, 44684), (197, 44639), (205, 44609), (212, 44570), (217, 44531), (221, 44498), (222, 44495), (227, 44471), (236, 44438), (239, 44417), (249, 44387), (265, 44273), (269, 44231), (271, 44210), (275, 44177), (285, 44105), (286, 44099), (304, 44006), (310, 43982), (314, 43967), (323, 43943),

Gene: Mariokart\_44 Start: 37741, Stop: 36515, Start Num: 56

Candidate Starts for Mariokart\_44:

(Start: 56 @37741 has 1 MA's), (Start: 121 @37669 has 1 MA's), (129, 37642), (135, 37612), (185, 37375), (195, 37357), (209, 37294), (210, 37291), (213, 37279), (236, 37150), (241, 37123), (249, 37099), (257, 37051), (260, 37039), (264, 37009), (266, 36976), (271, 36931), (275, 36898), (279, 36865), (283, 36838), (292, 36793), (293, 36787), (298, 36760), (299, 36757), (310, 36709), (346, 36547),

Gene: Marley1013\_49 Start: 45665, Stop: 44043, Start Num: 33

Candidate Starts for Marley1013\_49:

(16, 45782), (20, 45776), (21, 45761), (Start: 33 @45665 has 9 MA's), (Start: 34 @45656 has 34 MA's), (51, 45560), (Start: 70 @45482 has 2 MA's), (87, 45347), (Start: 121 @45188 has 1 MA's), (127, 45173), (129, 45161), (135, 45131), (144, 45089), (153, 45011), (188, 44879), (195, 44846), (197, 44837), (216, 44744), (222, 44696), (225, 44681), (227, 44672), (236, 44639), (241, 44612), (249, 44588), (264, 44498), (275, 44387), (283, 44354), (284, 44351), (287, 44336), (292, 44315), (298, 44282),

Gene: Maru\_50 Start: 44889, Stop: 43489, Start Num: 67

Candidate Starts for Maru\_50:

(10, 45270), (12, 45225), (18, 45183), (Start: 27 @45102 has 5 MA's), (Start: 34 @45057 has 34 MA's), (Start: 65 @44892 has 226 MA's), (Start: 67 @44889 has 65 MA's), (Start: 68 @44883 has 1 MA's), (73, 44841), (86, 44769), (93, 44748), (Start: 121 @44652 has 1 MA's), (135, 44601), (147, 44535), (148, 44532), (153, 44481), (167, 44415), (171, 44403), (181, 44367), (197, 44322), (205, 44292), (212, 44253), (217, 44214), (221, 44181), (222, 44178), (227, 44154), (236, 44121), (239, 44100), (249, 44070), (265, 43956), (269, 43914), (271, 43893), (275, 43860), (285, 43788), (286, 43782), (295, 43734), (304, 43689), (310, 43665), (314, 43650), (323, 43626),

Gene: Maskar\_51 Start: 44930, Stop: 43527, Start Num: 65

Candidate Starts for Maskar\_51:

(Start: 34 @45095 has 34 MA's), (Start: 65 @44930 has 226 MA's), (Start: 67 @44927 has 65 MA's), (Start: 68 @44921 has 1 MA's), (73, 44879), (86, 44807), (93, 44786), (Start: 121 @44690 has 1 MA's), (135, 44639), (147, 44573), (148, 44570), (153, 44519), (167, 44453), (171, 44441), (181, 44405), (197, 44360), (205, 44330), (212, 44291), (217, 44252), (221, 44219), (222, 44216), (224, 44210), (227, 44192), (236, 44159), (239, 44138), (249, 44108), (265, 43994), (269, 43952), (271, 43931), (275, 43898), (285, 43826), (286, 43820), (295, 43772), (304, 43727), (310, 43703), (314, 43688), (323, 43664),

Gene: MasterPo\_50 Start: 44872, Stop: 43505, Start Num: 67

Candidate Starts for MasterPo\_50:

(Start: 67 @44872 has 65 MA's), (75, 44809), (77, 44794), (108, 44683), (120, 44632), (134, 44584), (142, 44536), (164, 44395), (167, 44386), (190, 44341), (192, 44335), (193, 44329), (197, 44317), (217, 44212), (221, 44179), (227, 44152), (236, 44119), (241, 44092), (249, 44068), (253, 44041),

(258, 44014), (266, 43939), (271, 43894), (275, 43861), (282, 43840), (283, 43834), (289, 43801), (291, 43792), (293, 43783), (335, 43621), (338, 43603), (346, 43546),

Gene: Matalotodo\_51 Start: 45244, Stop: 43841, Start Num: 65

Candidate Starts for Matalotodo\_51:

(Start: 34 @45409 has 34 MA's), (Start: 65 @45244 has 226 MA's), (Start: 67 @45241 has 65 MA's), (Start: 68 @45235 has 1 MA's), (73, 45193), (86, 45121), (93, 45100), (Start: 121 @45004 has 1 MA's), (135, 44953), (147, 44887), (148, 44884), (151, 44860), (153, 44833), (167, 44767), (171, 44755), (181, 44719), (197, 44674), (205, 44644), (212, 44605), (217, 44566), (221, 44533), (222, 44530), (227, 44506), (236, 44473), (239, 44452), (249, 44422), (265, 44308), (269, 44266), (271, 44245), (275, 44212), (285, 44140), (286, 44134), (295, 44086), (304, 44041), (310, 44017), (314, 44002), (323, 43978),

Gene: Mcshane\_50 Start: 44941, Stop: 43538, Start Num: 65

Candidate Starts for Mcshane\_50:

(10, 45319), (12, 45274), (18, 45232), (Start: 27 @45151 has 5 MA's), (Start: 34 @45106 has 34 MA's), (Start: 65 @44941 has 226 MA's), (Start: 67 @44938 has 65 MA's), (Start: 68 @44932 has 1 MA's), (73, 44890), (86, 44818), (93, 44797), (Start: 121 @44701 has 1 MA's), (135, 44650), (147, 44584), (148, 44581), (153, 44530), (167, 44464), (171, 44452), (181, 44416), (197, 44371), (205, 44341), (212, 44302), (217, 44263), (221, 44230), (222, 44227), (227, 44203), (236, 44170), (239, 44149), (249, 44119), (265, 44005), (269, 43963), (271, 43942), (275, 43909), (285, 43837), (286, 43831), (295, 43783), (304, 43738), (310, 43714), (314, 43699), (323, 43675),

Gene: Mecca\_50 Start: 44947, Stop: 43544, Start Num: 65

Candidate Starts for Mecca\_50:

(Start: 34 @45112 has 34 MA's), (Start: 65 @44947 has 226 MA's), (Start: 67 @44944 has 65 MA's), (Start: 68 @44938 has 1 MA's), (73, 44896), (86, 44824), (93, 44803), (Start: 121 @44707 has 1 MA's), (135, 44656), (147, 44590), (148, 44587), (151, 44563), (153, 44536), (167, 44470), (171, 44458), (181, 44422), (197, 44377), (205, 44347), (212, 44308), (217, 44269), (221, 44236), (222, 44233), (227, 44209), (236, 44176), (239, 44155), (249, 44125), (265, 44011), (269, 43969), (271, 43948), (275, 43915), (285, 43843), (286, 43837), (295, 43789), (304, 43744), (310, 43720), (314, 43705), (323, 43681),

Gene: Megamind20\_51 Start: 44966, Stop: 43566, Start Num: 67

Candidate Starts for Megamind20\_51:

(10, 45347), (12, 45302), (18, 45260), (Start: 27 @45179 has 5 MA's), (Start: 34 @45134 has 34 MA's), (Start: 65 @44969 has 226 MA's), (Start: 67 @44966 has 65 MA's), (Start: 68 @44960 has 1 MA's), (73, 44918), (86, 44846), (93, 44825), (Start: 121 @44729 has 1 MA's), (135, 44678), (147, 44612), (148, 44609), (153, 44558), (167, 44492), (171, 44480), (181, 44444), (197, 44399), (205, 44369), (212, 44330), (217, 44291), (221, 44258), (222, 44255), (227, 44231), (236, 44198), (239, 44177), (249, 44147), (265, 44033), (269, 43991), (271, 43970), (275, 43937), (285, 43865), (286, 43859), (295, 43811), (304, 43766), (310, 43742), (314, 43727), (323, 43703),

Gene: Megatron\_52 Start: 45377, Stop: 43974, Start Num: 65

Candidate Starts for Megatron\_52:

(10, 45755), (12, 45710), (18, 45668), (Start: 27 @45587 has 5 MA's), (Start: 34 @45542 has 34 MA's), (Start: 65 @45377 has 226 MA's), (Start: 67 @45374 has 65 MA's), (Start: 68 @45368 has 1 MA's), (73, 45326), (86, 45254), (93, 45233), (Start: 121 @45137 has 1 MA's), (135, 45086), (147, 45020), (148, 45017), (153, 44966), (167, 44900), (171, 44888), (181, 44852), (197, 44807), (205, 44777), (212, 44738), (217, 44699), (221, 44666), (222, 44663), (227, 44639), (236, 44606), (239, 44585), (249, 44555), (265, 44441), (269, 44399), (271, 44378), (275, 44345), (285, 44273), (286, 44267), (295, 44219), (304, 44174), (310, 44150), (314, 44135), (323, 44111),

Gene: Melc17\_51 Start: 45239, Stop: 43836, Start Num: 65

Candidate Starts for Melc17\_51:

(Start: 34 @45404 has 34 MA's), (Start: 65 @45239 has 226 MA's), (Start: 67 @45236 has 65 MA's), (Start: 68 @45230 has 1 MA's), (73, 45188), (86, 45116), (93, 45095), (Start: 121 @44999 has 1 MA's), (135, 44948), (147, 44882), (148, 44879), (153, 44828), (167, 44762), (171, 44750), (181, 44714), (197, 44669), (205, 44639), (212, 44600), (217, 44561), (221, 44528), (222, 44525), (224, 44519), (227, 44501), (236, 44468), (239, 44447), (249, 44417), (265, 44303), (269, 44261), (271, 44240), (275, 44207), (285, 44135), (286, 44129), (295, 44081), (304, 44036), (310, 44012), (314, 43997), (323, 43973),

Gene: MelsMeow\_51 Start: 44983, Stop: 43580, Start Num: 65

Candidate Starts for MelsMeow\_51:

(Start: 34 @45148 has 34 MA's), (Start: 65 @44983 has 226 MA's), (Start: 67 @44980 has 65 MA's), (Start: 68 @44974 has 1 MA's), (73, 44932), (86, 44860), (93, 44839), (Start: 121 @44743 has 1 MA's), (135, 44692), (147, 44626), (148, 44623), (153, 44572), (167, 44506), (171, 44494), (181, 44458), (197, 44413), (205, 44383), (212, 44344), (217, 44305), (221, 44272), (222, 44269), (224, 44263), (227, 44245), (236, 44212), (239, 44191), (249, 44161), (265, 44047), (269, 44005), (271, 43984), (275, 43951), (285, 43879), (286, 43873), (295, 43825), (304, 43780), (310, 43756), (314, 43741), (323, 43717),

Gene: Mesh1\_51 Start: 45257, Stop: 43854, Start Num: 64

Candidate Starts for Mesh1\_51:

(Start: 64 @45257 has 26 MA's), (Start: 67 @45254 has 65 MA's), (Start: 68 @45248 has 1 MA's), (73, 45206), (86, 45134), (93, 45113), (Start: 121 @45017 has 1 MA's), (135, 44966), (147, 44900), (148, 44897), (153, 44846), (167, 44780), (171, 44768), (181, 44732), (197, 44687), (205, 44657), (212, 44618), (217, 44579), (221, 44546), (222, 44543), (227, 44519), (236, 44486), (239, 44465), (249, 44435), (265, 44321), (269, 44279), (271, 44258), (275, 44225), (285, 44153), (286, 44147), (295, 44099), (304, 44054), (310, 44030), (314, 44015), (323, 43991),

Gene: MichaelPhcott\_50 Start: 44861, Stop: 43458, Start Num: 65

Candidate Starts for MichaelPhcott\_50:

(Start: 34 @45026 has 34 MA's), (Start: 65 @44861 has 226 MA's), (Start: 67 @44858 has 65 MA's), (Start: 68 @44852 has 1 MA's), (73, 44810), (86, 44738), (93, 44717), (Start: 121 @44621 has 1 MA's), (135, 44570), (147, 44504), (148, 44501), (153, 44450), (167, 44384), (171, 44372), (181, 44336), (197, 44291), (205, 44261), (212, 44222), (217, 44183), (221, 44150), (222, 44147), (224, 44141), (227, 44123), (236, 44090), (239, 44069), (249, 44039), (265, 43925), (269, 43883), (271, 43862), (275, 43829), (285, 43757), (286, 43751), (295, 43703), (304, 43658), (310, 43634), (314, 43619), (323, 43595),

Gene: Mikota\_51 Start: 45227, Stop: 43824, Start Num: 65

Candidate Starts for Mikota\_51:

(10, 45605), (12, 45560), (18, 45518), (Start: 27 @45437 has 5 MA's), (Start: 34 @45392 has 34 MA's), (Start: 65 @45227 has 226 MA's), (Start: 67 @45224 has 65 MA's), (Start: 68 @45218 has 1 MA's), (73, 45176), (86, 45104), (93, 45083), (Start: 121 @44987 has 1 MA's), (135, 44936), (147, 44870), (148, 44867), (153, 44816), (167, 44750), (171, 44738), (181, 44702), (197, 44657), (205, 44627), (212, 44588), (217, 44549), (221, 44516), (222, 44513), (227, 44489), (236, 44456), (239, 44435), (249, 44405), (265, 44291), (269, 44249), (271, 44228), (275, 44195), (285, 44123), (286, 44117), (295, 44069), (304, 44024), (310, 44000), (314, 43985), (323, 43961),

Gene: MiniBoss\_51 Start: 45230, Stop: 43830, Start Num: 67

Candidate Starts for MiniBoss\_51:

(10, 45611), (12, 45566), (18, 45524), (Start: 27 @45443 has 5 MA's), (Start: 34 @45398 has 34 MA's), (Start: 65 @45233 has 226 MA's), (Start: 67 @45230 has 65 MA's), (Start: 68 @45224 has 1

MA's), (73, 45182), (86, 45110), (93, 45089), (Start: 121 @44993 has 1 MA's), (135, 44942), (147, 44876), (148, 44873), (153, 44822), (167, 44756), (171, 44744), (181, 44708), (197, 44663), (205, 44633), (212, 44594), (217, 44555), (221, 44522), (222, 44519), (227, 44495), (236, 44462), (239, 44441), (249, 44411), (265, 44297), (269, 44255), (271, 44234), (275, 44201), (285, 44129), (286, 44123), (295, 44075), (304, 44030), (310, 44006), (314, 43991), (323, 43967),

Gene: Mischief19\_53 Start: 46548, Stop: 45343, Start Num: 99

Candidate Starts for Mischief19\_53:

(78, 46626), (80, 46605), (90, 46581), (Start: 99 @46548 has 5 MA's), (114, 46509), (146, 46380), (189, 46215), (231, 46017), (241, 45972), (244, 45963), (270, 45795), (273, 45780), (279, 45744), (285, 45720), (292, 45684), (302, 45633), (315, 45567), (319, 45540), (333, 45477), (334, 45474), (341, 45426), (350, 45369), (351, 45354),

Gene: MitKao\_51 Start: 44959, Stop: 43556, Start Num: 65

Candidate Starts for MitKao\_51:

(10, 45337), (12, 45292), (18, 45250), (Start: 27 @45169 has 5 MA's), (Start: 34 @45124 has 34 MA's), (Start: 65 @44959 has 226 MA's), (Start: 67 @44956 has 65 MA's), (Start: 68 @44950 has 1 MA's), (73, 44908), (86, 44836), (93, 44815), (Start: 121 @44719 has 1 MA's), (135, 44668), (147, 44602), (148, 44599), (153, 44548), (167, 44482), (171, 44470), (181, 44434), (197, 44389), (205, 44359), (212, 44320), (217, 44281), (221, 44248), (222, 44245), (224, 44239), (227, 44221), (236, 44188), (239, 44167), (249, 44137), (265, 44023), (269, 43981), (271, 43960), (275, 43927), (285, 43855), (286, 43849), (295, 43801), (304, 43756), (310, 43732), (314, 43717), (323, 43693),

Gene: Mithril\_46 Start: 45718, Stop: 44378, Start Num: 65

Candidate Starts for Mithril\_46:

(Start: 64 @45721 has 26 MA's), (Start: 65 @45718 has 226 MA's), (Start: 68 @45709 has 1 MA's), (69, 45703), (76, 45652), (116, 45505), (135, 45439), (157, 45298), (161, 45274), (167, 45253), (168, 45250), (173, 45235), (176, 45220), (203, 45151), (207, 45118), (213, 45094), (222, 45022), (225, 45007), (227, 44998), (236, 44965), (237, 44962), (239, 44944), (249, 44914), (260, 44854), (262, 44836), (264, 44824), (266, 44791), (267, 44779), (268, 44773), (269, 44764), (271, 44743), (274, 44734), (275, 44710), (286, 44671), (298, 44605), (299, 44602), (314, 44539), (319, 44533), (323, 44515),

Gene: MmasiCarm\_49 Start: 44861, Stop: 43248, Start Num: 34

Candidate Starts for MmasiCarm\_49:

(16, 44987), (20, 44981), (21, 44966), (Start: 33 @44870 has 9 MA's), (Start: 34 @44861 has 34 MA's), (51, 44765), (Start: 70 @44687 has 2 MA's), (87, 44552), (Start: 121 @44393 has 1 MA's), (127, 44378), (129, 44366), (135, 44336), (144, 44294), (153, 44216), (188, 44084), (195, 44051), (197, 44042), (216, 43949), (222, 43901), (225, 43886), (227, 43877), (236, 43844), (241, 43817), (249, 43793), (264, 43703), (275, 43592), (283, 43559), (287, 43541), (292, 43520), (298, 43487),

Gene: Morgushi\_51 Start: 44948, Stop: 43545, Start Num: 65

Candidate Starts for Morgushi\_51:

(10, 45326), (12, 45281), (18, 45239), (Start: 27 @45158 has 5 MA's), (Start: 34 @45113 has 34 MA's), (Start: 65 @44948 has 226 MA's), (Start: 67 @44945 has 65 MA's), (Start: 68 @44939 has 1 MA's), (73, 44897), (86, 44825), (93, 44804), (Start: 121 @44708 has 1 MA's), (135, 44657), (147, 44591), (148, 44588), (153, 44537), (167, 44471), (171, 44459), (181, 44423), (197, 44378), (205, 44348), (212, 44309), (217, 44270), (221, 44237), (222, 44234), (227, 44210), (236, 44177), (239, 44156), (249, 44126), (265, 44012), (269, 43970), (271, 43949), (275, 43916), (285, 43844), (286, 43838), (295, 43790), (304, 43745), (310, 43721), (314, 43706), (323, 43682),

Gene: Morrissey\_33 Start: 26237, Stop: 25131, Start Num: 117

Candidate Starts for Morrissey\_33:

(Start: 117 @26237 has 1 MA's), (149, 26090), (164, 25988), (219, 25820), (225, 25790), (233, 25760), (248, 25694), (259, 25631), (262, 25613), (272, 25520), (274, 25514), (275, 25490), (282, 25469), (283, 25463), (292, 25415), (301, 25370), (304, 25355), (305, 25346), (308, 25334), (321, 25280), (326, 25265),

Gene: Mortcellus\_48 Start: 45513, Stop: 43900, Start Num: 34

Candidate Starts for Mortcellus\_48:

(16, 45639), (20, 45633), (21, 45618), (Start: 33 @45522 has 9 MA's), (Start: 34 @45513 has 34 MA's), (51, 45417), (Start: 70 @45339 has 2 MA's), (87, 45204), (Start: 121 @45045 has 1 MA's), (127, 45030), (129, 45018), (135, 44988), (144, 44946), (153, 44868), (188, 44736), (195, 44703), (197, 44694), (216, 44601), (222, 44553), (225, 44538), (227, 44529), (236, 44496), (241, 44469), (249, 44445), (264, 44355), (275, 44244), (283, 44211), (287, 44193), (292, 44172), (298, 44139),

Gene: Morty\_52 Start: 45386, Stop: 43983, Start Num: 65

Candidate Starts for Morty\_52:

(10, 45764), (12, 45719), (18, 45677), (Start: 27 @45596 has 5 MA's), (Start: 34 @45551 has 34 MA's), (Start: 65 @45386 has 226 MA's), (Start: 67 @45383 has 65 MA's), (Start: 68 @45377 has 1 MA's), (73, 45335), (86, 45263), (93, 45242), (Start: 121 @45146 has 1 MA's), (135, 45095), (147, 45029), (148, 45026), (153, 44975), (167, 44909), (171, 44897), (181, 44861), (197, 44816), (205, 44786), (212, 44747), (217, 44708), (221, 44675), (222, 44672), (227, 44648), (236, 44615), (239, 44594), (249, 44564), (265, 44450), (269, 44408), (271, 44387), (275, 44354), (285, 44282), (286, 44276), (295, 44228), (304, 44183), (310, 44159), (314, 44144), (323, 44120),

Gene: Morty007\_49 Start: 45656, Stop: 44043, Start Num: 34

Candidate Starts for Morty007\_49:

(16, 45782), (20, 45776), (21, 45761), (Start: 33 @45665 has 9 MA's), (Start: 34 @45656 has 34 MA's), (51, 45560), (Start: 70 @45482 has 2 MA's), (87, 45347), (Start: 121 @45188 has 1 MA's), (127, 45173), (129, 45161), (135, 45131), (144, 45089), (153, 45011), (188, 44879), (195, 44846), (197, 44837), (216, 44744), (222, 44696), (225, 44681), (227, 44672), (236, 44639), (241, 44612), (249, 44588), (264, 44498), (275, 44387), (283, 44354), (284, 44351), (287, 44336), (292, 44315), (298, 44282),

Gene: Mosaic\_50 Start: 44953, Stop: 43550, Start Num: 65

Candidate Starts for Mosaic\_50:

(10, 45331), (12, 45286), (18, 45244), (Start: 27 @45163 has 5 MA's), (Start: 34 @45118 has 34 MA's), (Start: 65 @44953 has 226 MA's), (Start: 67 @44950 has 65 MA's), (Start: 68 @44944 has 1 MA's), (73, 44902), (86, 44830), (93, 44809), (Start: 121 @44713 has 1 MA's), (135, 44662), (147, 44596), (148, 44593), (153, 44542), (167, 44476), (171, 44464), (181, 44428), (197, 44383), (205, 44353), (212, 44314), (217, 44275), (221, 44242), (222, 44239), (227, 44215), (236, 44182), (239, 44161), (249, 44131), (265, 44017), (269, 43975), (271, 43954), (275, 43921), (285, 43849), (286, 43843), (295, 43795), (304, 43750), (310, 43726), (314, 43711), (323, 43687),

Gene: MossRose\_47 Start: 40308, Stop: 38917, Start Num: 27

Candidate Starts for MossRose\_47:

(Start: 27 @40308 has 5 MA's), (31, 40281), (Start: 41 @40230 has 1 MA's), (71, 40086), (124, 40080), (133, 40047), (135, 40029), (141, 39996), (143, 39990), (155, 39900), (168, 39840), (194, 39771), (202, 39750), (209, 39708), (219, 39636), (221, 39624), (225, 39606), (227, 39597), (236, 39564), (249, 39513), (256, 39483), (260, 39453), (271, 39345), (276, 39303), (278, 39270), (283, 39225), (286, 39213), (292, 39180), (293, 39174), (298, 39147),

Gene: MrPhizzler\_50 Start: 44950, Stop: 43547, Start Num: 65

Candidate Starts for MrPhizzler\_50:

(10, 45328), (12, 45283), (18, 45241), (Start: 27 @45160 has 5 MA's), (Start: 34 @45115 has 34 MA's), (Start: 65 @44950 has 226 MA's), (Start: 67 @44947 has 65 MA's), (Start: 68 @44941 has 1 MA's), (73, 44899), (86, 44827), (93, 44806), (Start: 121 @44710 has 1 MA's), (135, 44659), (147, 44593), (148, 44590), (153, 44539), (167, 44473), (171, 44461), (181, 44425), (197, 44380), (205, 44350), (212, 44311), (217, 44272), (221, 44239), (222, 44236), (227, 44212), (236, 44179), (239, 44158), (249, 44128), (265, 44014), (269, 43972), (271, 43951), (275, 43918), (285, 43846), (286, 43840), (295, 43792), (304, 43747), (310, 43723), (314, 43708), (323, 43684),

Gene: Mudslide\_46 Start: 45977, Stop: 44637, Start Num: 65

Candidate Starts for Mudslide\_46:

(Start: 64 @45980 has 26 MA's), (Start: 65 @45977 has 226 MA's), (Start: 68 @45968 has 1 MA's), (69, 45962), (76, 45911), (116, 45764), (130, 45719), (135, 45698), (157, 45557), (161, 45533), (167, 45512), (168, 45509), (173, 45494), (176, 45479), (203, 45410), (205, 45395), (207, 45377), (213, 45353), (222, 45281), (227, 45257), (236, 45224), (237, 45221), (239, 45203), (249, 45173), (260, 45113), (262, 45095), (264, 45083), (267, 45038), (268, 45032), (269, 45023), (274, 44993), (275, 44969), (286, 44930), (294, 44885), (298, 44864), (299, 44861), (319, 44792), (323, 44774),

Gene: Mulan\_51 Start: 45100, Stop: 43700, Start Num: 67

Candidate Starts for Mulan\_51:

(Start: 34 @45268 has 34 MA's), (Start: 65 @45103 has 226 MA's), (Start: 67 @45100 has 65 MA's), (Start: 68 @45094 has 1 MA's), (73, 45052), (86, 44980), (93, 44959), (Start: 121 @44863 has 1 MA's), (135, 44812), (147, 44746), (148, 44743), (151, 44719), (153, 44692), (167, 44626), (171, 44614), (181, 44578), (197, 44533), (205, 44503), (212, 44464), (217, 44425), (221, 44392), (222, 44389), (227, 44365), (236, 44332), (239, 44311), (249, 44281), (265, 44167), (269, 44125), (271, 44104), (275, 44071), (285, 43999), (286, 43993), (295, 43945), (304, 43900), (310, 43876), (314, 43861), (323, 43837),

Gene: Murdoc\_51 Start: 45234, Stop: 43831, Start Num: 65

Candidate Starts for Murdoc\_51:

(Start: 34 @45399 has 34 MA's), (Start: 65 @45234 has 226 MA's), (Start: 67 @45231 has 65 MA's), (Start: 68 @45225 has 1 MA's), (73, 45183), (86, 45111), (93, 45090), (Start: 121 @44994 has 1 MA's), (135, 44943), (147, 44877), (148, 44874), (151, 44850), (153, 44823), (167, 44757), (171, 44745), (181, 44709), (197, 44664), (205, 44634), (212, 44595), (217, 44556), (221, 44523), (222, 44520), (227, 44496), (236, 44463), (239, 44442), (249, 44412), (265, 44298), (269, 44256), (271, 44235), (275, 44202), (285, 44130), (286, 44124), (295, 44076), (304, 44031), (310, 44007), (314, 43992), (323, 43968),

Gene: Mutante\_50 Start: 44953, Stop: 43550, Start Num: 65

Candidate Starts for Mutante\_50:

(Start: 34 @45118 has 34 MA's), (Start: 65 @44953 has 226 MA's), (Start: 67 @44950 has 65 MA's), (Start: 68 @44944 has 1 MA's), (73, 44902), (86, 44830), (93, 44809), (Start: 121 @44713 has 1 MA's), (135, 44662), (147, 44596), (148, 44593), (151, 44569), (153, 44542), (167, 44476), (171, 44464), (181, 44428), (197, 44383), (205, 44353), (212, 44314), (217, 44275), (221, 44242), (222, 44239), (227, 44215), (236, 44182), (239, 44161), (249, 44131), (265, 44017), (269, 43975), (271, 43954), (275, 43921), (285, 43849), (286, 43843), (295, 43795), (304, 43750), (310, 43726), (314, 43711), (323, 43687),

Gene: Mysterious\_51 Start: 46273, Stop: 44888, Start Num: 65

Candidate Starts for Mysterious\_51:

(Start: 34 @46426 has 34 MA's), (Start: 65 @46273 has 226 MA's), (Start: 70 @46255 has 2 MA's), (Start: 121 @46036 has 1 MA's), (129, 46009), (130, 46006), (169, 45799), (174, 45781), (209, 45664), (218, 45601), (222, 45577), (225, 45562), (241, 45493), (249, 45469), (251, 45466), (267, 45334), (269, 45322), (271, 45301), (275, 45268), (277, 45250), (285, 45196), (293, 45151), (298,

45124), (319, 45043), (328, 45004), (330, 44998), (338, 44962),

Gene: NHagos\_45 Start: 38885, Stop: 37521, Start Num: 27

Candidate Starts for NHagos\_45:

(Start: 27 @38885 has 5 MA's), (31, 38858), (Start: 41 @38807 has 1 MA's), (Start: 121 @38663 has 1 MA's), (135, 38606), (170, 38411), (182, 38372), (213, 38270), (221, 38201), (239, 38120), (249, 38090), (251, 38087), (257, 38042), (260, 38030), (267, 37955), (271, 37922), (275, 37889), (279, 37856), (282, 37844), (283, 37829), (286, 37817), (293, 37778), (298, 37751), (338, 37595),

Gene: Nacho\_0052 Start: 45380, Stop: 43977, Start Num: 65

Candidate Starts for Nacho\_0052:

(Start: 34 @45545 has 34 MA's), (Start: 65 @45380 has 226 MA's), (Start: 67 @45377 has 65 MA's), (Start: 68 @45371 has 1 MA's), (73, 45329), (86, 45257), (93, 45236), (Start: 121 @45140 has 1 MA's), (135, 45089), (147, 45023), (148, 45020), (151, 44996), (153, 44969), (167, 44903), (171, 44891), (181, 44855), (197, 44810), (205, 44780), (212, 44741), (217, 44702), (221, 44669), (222, 44666), (227, 44642), (236, 44609), (239, 44588), (249, 44558), (265, 44444), (269, 44402), (271, 44381), (275, 44348), (285, 44276), (286, 44270), (295, 44222), (304, 44177), (310, 44153), (314, 44138), (323, 44114),

Gene: Nanao\_45 Start: 44677, Stop: 43337, Start Num: 65

Candidate Starts for Nanao\_45:

(Start: 64 @44680 has 26 MA's), (Start: 65 @44677 has 226 MA's), (Start: 68 @44668 has 1 MA's), (69, 44662), (76, 44611), (116, 44464), (135, 44398), (139, 44374), (167, 44212), (173, 44194), (176, 44179), (178, 44176), (187, 44149), (206, 44086), (207, 44077), (220, 43990), (225, 43966), (236, 43924), (237, 43921), (239, 43903), (249, 43873), (255, 43846), (260, 43813), (263, 43792), (264, 43783), (267, 43738), (268, 43732), (269, 43723), (271, 43702), (275, 43669), (286, 43630), (298, 43564), (299, 43561), (319, 43492), (323, 43474),

Gene: Nangang\_50 Start: 46226, Stop: 44841, Start Num: 65

Candidate Starts for Nangang\_50:

(Start: 65 @46226 has 226 MA's), (Start: 70 @46208 has 2 MA's), (Start: 121 @45989 has 1 MA's), (130, 45959), (158, 45794), (169, 45752), (174, 45734), (179, 45719), (200, 45668), (209, 45617), (222, 45530), (225, 45515), (227, 45506), (241, 45446), (249, 45422), (251, 45419), (263, 45341), (267, 45287), (275, 45221), (277, 45203), (285, 45149), (292, 45110), (293, 45104), (298, 45077), (319, 44996), (328, 44957), (338, 44915),

Gene: Neos5\_49 Start: 45672, Stop: 44059, Start Num: 34

Candidate Starts for Neos5\_49:

(16, 45798), (20, 45792), (21, 45777), (Start: 33 @45681 has 9 MA's), (Start: 34 @45672 has 34 MA's), (51, 45576), (Start: 70 @45498 has 2 MA's), (87, 45363), (Start: 121 @45204 has 1 MA's), (127, 45189), (129, 45177), (135, 45147), (144, 45105), (153, 45027), (188, 44895), (195, 44862), (197, 44853), (216, 44760), (222, 44712), (225, 44697), (227, 44688), (241, 44628), (249, 44604), (264, 44514), (275, 44403), (283, 44370), (287, 44352), (292, 44331), (298, 44298),

Gene: Newman\_51 Start: 45251, Stop: 43848, Start Num: 65

Candidate Starts for Newman\_51:

(10, 45629), (12, 45584), (18, 45542), (Start: 27 @45461 has 5 MA's), (Start: 34 @45416 has 34 MA's), (Start: 65 @45251 has 226 MA's), (Start: 67 @45248 has 65 MA's), (Start: 68 @45242 has 1 MA's), (73, 45200), (86, 45128), (93, 45107), (Start: 121 @45011 has 1 MA's), (135, 44960), (147, 44894), (148, 44891), (151, 44867), (153, 44840), (167, 44774), (171, 44762), (181, 44726), (197, 44681), (205, 44651), (212, 44612), (217, 44573), (221, 44540), (222, 44537), (227, 44513), (236, 44480), (239, 44459), (249, 44429), (269, 44273), (271, 44252), (275, 44219), (285, 44147), (286, 44141), (295, 44093), (304, 44048), (310, 44024), (314, 44009), (323, 43985),

Gene: Nicole21\_51 Start: 45255, Stop: 43852, Start Num: 65

Candidate Starts for Nicole21\_51:

(Start: 34 @45420 has 34 MA's), (Start: 65 @45255 has 226 MA's), (Start: 67 @45252 has 65 MA's), (Start: 68 @45246 has 1 MA's), (73, 45204), (86, 45132), (93, 45111), (Start: 121 @45015 has 1 MA's), (135, 44964), (147, 44898), (148, 44895), (153, 44844), (167, 44778), (171, 44766), (181, 44730), (197, 44685), (205, 44655), (212, 44616), (217, 44577), (221, 44544), (222, 44541), (227, 44517), (236, 44484), (239, 44463), (249, 44433), (265, 44319), (269, 44277), (271, 44256), (275, 44223), (285, 44151), (286, 44145), (295, 44097), (304, 44052), (310, 44028), (314, 44013), (323, 43989),

Gene: Nigel\_45 Start: 44555, Stop: 43215, Start Num: 65

Candidate Starts for Nigel\_45:

(Start: 65 @44555 has 226 MA's), (Start: 68 @44546 has 1 MA's), (69, 44540), (116, 44342), (135, 44276), (139, 44252), (163, 44102), (167, 44090), (173, 44072), (205, 43973), (207, 43955), (213, 43931), (217, 43895), (222, 43859), (225, 43844), (227, 43835), (228, 43832), (231, 43820), (236, 43802), (237, 43799), (239, 43781), (245, 43763), (249, 43751), (255, 43724), (260, 43691), (263, 43670), (264, 43661), (267, 43616), (268, 43610), (269, 43601), (271, 43580), (275, 43547), (286, 43508), (298, 43442), (299, 43439), (319, 43370), (323, 43352), (340, 43268),

Gene: Nozo\_49 Start: 45636, Stop: 44023, Start Num: 34

Candidate Starts for Nozo\_49:

(16, 45762), (20, 45756), (21, 45741), (Start: 33 @45645 has 9 MA's), (Start: 34 @45636 has 34 MA's), (51, 45540), (Start: 70 @45462 has 2 MA's), (87, 45327), (Start: 121 @45168 has 1 MA's), (127, 45153), (129, 45141), (135, 45111), (144, 45069), (153, 44991), (188, 44859), (195, 44826), (197, 44817), (216, 44724), (222, 44676), (225, 44661), (227, 44652), (236, 44619), (241, 44592), (249, 44568), (264, 44478), (275, 44367), (283, 44334), (284, 44331), (287, 44316), (292, 44295), (298, 44262),

Gene: Numberten\_51 Start: 45246, Stop: 43843, Start Num: 65

Candidate Starts for Numberten\_51:

(Start: 34 @45411 has 34 MA's), (Start: 65 @45246 has 226 MA's), (Start: 67 @45243 has 65 MA's), (Start: 68 @45237 has 1 MA's), (73, 45195), (86, 45123), (93, 45102), (Start: 121 @45006 has 1 MA's), (135, 44955), (147, 44889), (148, 44886), (153, 44835), (167, 44769), (171, 44757), (181, 44721), (197, 44676), (205, 44646), (212, 44607), (217, 44568), (221, 44535), (222, 44532), (227, 44508), (236, 44475), (239, 44454), (249, 44424), (265, 44310), (269, 44268), (271, 44247), (275, 44214), (285, 44142), (286, 44136), (295, 44088), (304, 44043), (310, 44019), (314, 44004), (323, 43980),

Gene: Nyala\_50 Start: 44945, Stop: 43542, Start Num: 65

Candidate Starts for Nyala\_50:

(10, 45323), (12, 45278), (18, 45236), (Start: 27 @45155 has 5 MA's), (Start: 34 @45110 has 34 MA's), (Start: 65 @44945 has 226 MA's), (Start: 67 @44942 has 65 MA's), (Start: 68 @44936 has 1 MA's), (73, 44894), (86, 44822), (93, 44801), (Start: 121 @44705 has 1 MA's), (135, 44654), (147, 44588), (148, 44585), (153, 44534), (167, 44468), (171, 44456), (181, 44420), (197, 44375), (205, 44345), (212, 44306), (217, 44267), (221, 44234), (222, 44231), (227, 44207), (236, 44174), (239, 44153), (249, 44123), (265, 44009), (269, 43967), (271, 43946), (275, 43913), (285, 43841), (286, 43835), (295, 43787), (304, 43742), (310, 43718), (314, 43703), (323, 43679),

Gene: OSmaximus\_52 Start: 45419, Stop: 44016, Start Num: 65

Candidate Starts for OSmaximus\_52:

(Start: 34 @45584 has 34 MA's), (Start: 65 @45419 has 226 MA's), (Start: 67 @45416 has 65 MA's), (Start: 68 @45410 has 1 MA's), (73, 45368), (86, 45296), (93, 45275), (Start: 121 @45179 has 1



MA's), (135, 45128), (147, 45062), (148, 45059), (153, 45008), (167, 44942), (171, 44930), (181, 44894), (197, 44849), (205, 44819), (212, 44780), (217, 44741), (221, 44708), (222, 44705), (227, 44681), (236, 44648), (239, 44627), (249, 44597), (265, 44483), (269, 44441), (271, 44420), (275, 44387), (285, 44315), (286, 44309), (295, 44261), (304, 44216), (310, 44192), (314, 44177), (323, 44153),

Gene: Obutu\_49 Start: 44861, Stop: 43248, Start Num: 34

Candidate Starts for Obutu\_49:

(16, 44987), (20, 44981), (21, 44966), (Start: 33 @44870 has 9 MA's), (Start: 34 @44861 has 34 MA's), (51, 44765), (Start: 70 @44687 has 2 MA's), (87, 44552), (Start: 121 @44393 has 1 MA's), (127, 44378), (129, 44366), (135, 44336), (144, 44294), (153, 44216), (188, 44084), (195, 44051), (197, 44042), (216, 43949), (222, 43901), (225, 43886), (227, 43877), (236, 43844), (241, 43817), (249, 43793), (264, 43703), (275, 43592), (283, 43559), (287, 43541), (292, 43520), (298, 43487),

Gene: Olak\_51 Start: 44948, Stop: 43545, Start Num: 65

Candidate Starts for Olak\_51:

(10, 45326), (12, 45281), (18, 45239), (Start: 27 @45158 has 5 MA's), (Start: 34 @45113 has 34 MA's), (Start: 65 @44948 has 226 MA's), (Start: 67 @44945 has 65 MA's), (Start: 68 @44939 has 1 MA's), (73, 44897), (86, 44825), (93, 44804), (Start: 121 @44708 has 1 MA's), (135, 44657), (147, 44591), (148, 44588), (153, 44537), (167, 44471), (171, 44459), (181, 44423), (197, 44378), (205, 44348), (212, 44309), (217, 44270), (221, 44237), (222, 44234), (227, 44210), (236, 44177), (239, 44156), (249, 44126), (265, 44012), (269, 43970), (271, 43949), (275, 43916), (285, 43844), (286, 43838), (295, 43790), (304, 43745), (310, 43721), (314, 43706), (323, 43682),

Gene: Oline\_50 Start: 44808, Stop: 43405, Start Num: 65

Candidate Starts for Oline\_50:

(Start: 34 @44973 has 34 MA's), (Start: 65 @44808 has 226 MA's), (Start: 67 @44805 has 65 MA's), (Start: 68 @44799 has 1 MA's), (73, 44757), (86, 44685), (93, 44664), (Start: 121 @44568 has 1 MA's), (135, 44517), (147, 44451), (148, 44448), (153, 44397), (167, 44331), (171, 44319), (181, 44283), (197, 44238), (205, 44208), (212, 44169), (217, 44130), (221, 44097), (222, 44094), (224, 44088), (227, 44070), (236, 44037), (239, 44016), (249, 43986), (265, 43872), (269, 43830), (271, 43809), (275, 43776), (285, 43704), (286, 43698), (295, 43650), (304, 43605), (310, 43581), (314, 43566), (323, 43542),

Gene: Olive\_51 Start: 45235, Stop: 43832, Start Num: 65

Candidate Starts for Olive\_51:

(10, 45613), (12, 45568), (18, 45526), (Start: 27 @45445 has 5 MA's), (Start: 34 @45400 has 34 MA's), (Start: 65 @45235 has 226 MA's), (Start: 67 @45232 has 65 MA's), (Start: 68 @45226 has 1 MA's), (73, 45184), (86, 45112), (93, 45091), (Start: 121 @44995 has 1 MA's), (135, 44944), (147, 44878), (148, 44875), (153, 44824), (167, 44758), (171, 44746), (181, 44710), (197, 44665), (205, 44635), (212, 44596), (217, 44557), (221, 44524), (222, 44521), (227, 44497), (236, 44464), (239, 44443), (249, 44413), (265, 44299), (269, 44257), (271, 44236), (275, 44203), (285, 44131), (286, 44125), (295, 44077), (304, 44032), (310, 44008), (314, 43993), (323, 43969),

Gene: OliverWalter\_51 Start: 45257, Stop: 43854, Start Num: 65

Candidate Starts for OliverWalter\_51:

(Start: 34 @45422 has 34 MA's), (Start: 65 @45257 has 226 MA's), (Start: 67 @45254 has 65 MA's), (Start: 68 @45248 has 1 MA's), (73, 45206), (86, 45134), (93, 45113), (Start: 121 @45017 has 1 MA's), (135, 44966), (147, 44900), (148, 44897), (151, 44873), (153, 44846), (167, 44780), (171, 44768), (181, 44732), (197, 44687), (205, 44657), (212, 44618), (217, 44579), (221, 44546), (222, 44543), (227, 44519), (236, 44486), (239, 44465), (249, 44435), (265, 44321), (269, 44279), (271, 44258), (275, 44225), (285, 44153), (286, 44147), (295, 44099), (304, 44054), (310, 44030), (314, 44015), (323, 43991),

Gene: Omniscient\_51 Start: 45254, Stop: 43851, Start Num: 65

Candidate Starts for Omniscient\_51:

(Start: 34 @45419 has 34 MA's), (Start: 65 @45254 has 226 MA's), (Start: 67 @45251 has 65 MA's), (Start: 68 @45245 has 1 MA's), (73, 45203), (86, 45131), (93, 45110), (Start: 121 @45014 has 1 MA's), (135, 44963), (147, 44897), (148, 44894), (151, 44870), (153, 44843), (167, 44777), (171, 44765), (181, 44729), (197, 44684), (205, 44654), (212, 44615), (217, 44576), (221, 44543), (222, 44540), (227, 44516), (236, 44483), (239, 44462), (249, 44432), (265, 44318), (269, 44276), (271, 44255), (275, 44222), (285, 44150), (286, 44144), (295, 44096), (304, 44051), (310, 44027), (314, 44012), (323, 43988),

Gene: Oosterbaan\_51 Start: 45239, Stop: 43839, Start Num: 67

Candidate Starts for Oosterbaan\_51:

(Start: 34 @45407 has 34 MA's), (Start: 65 @45242 has 226 MA's), (Start: 67 @45239 has 65 MA's), (Start: 68 @45233 has 1 MA's), (73, 45191), (86, 45119), (93, 45098), (Start: 121 @45002 has 1 MA's), (135, 44951), (147, 44885), (148, 44882), (153, 44831), (167, 44765), (171, 44753), (181, 44717), (197, 44672), (205, 44642), (212, 44603), (217, 44564), (221, 44531), (222, 44528), (227, 44504), (236, 44471), (239, 44450), (249, 44420), (265, 44306), (269, 44264), (271, 44243), (275, 44210), (285, 44138), (286, 44132), (295, 44084), (304, 44039), (310, 44015), (314, 44000), (323, 43976),

Gene: Opia\_50 Start: 44866, Stop: 43499, Start Num: 67

Candidate Starts for Opia\_50:

(Start: 67 @44866 has 65 MA's), (75, 44803), (77, 44788), (108, 44677), (120, 44626), (134, 44578), (142, 44530), (164, 44389), (167, 44380), (190, 44335), (192, 44329), (193, 44323), (197, 44311), (217, 44206), (221, 44173), (225, 44155), (227, 44146), (236, 44113), (241, 44086), (249, 44062), (253, 44035), (258, 44008), (266, 43933), (271, 43888), (275, 43855), (282, 43834), (283, 43828), (289, 43795), (291, 43786), (293, 43777), (335, 43615), (338, 43597), (346, 43540),

Gene: OrangeOswald\_49 Start: 44877, Stop: 43264, Start Num: 34

Candidate Starts for OrangeOswald\_49:

(16, 45003), (20, 44997), (21, 44982), (Start: 33 @44886 has 9 MA's), (Start: 34 @44877 has 34 MA's), (51, 44781), (Start: 70 @44703 has 2 MA's), (87, 44568), (Start: 121 @44409 has 1 MA's), (127, 44394), (129, 44382), (135, 44352), (144, 44310), (153, 44232), (188, 44100), (195, 44067), (197, 44058), (216, 43965), (222, 43917), (225, 43902), (227, 43893), (236, 43860), (241, 43833), (249, 43809), (264, 43719), (275, 43608), (283, 43575), (284, 43572), (287, 43557), (292, 43536), (298, 43503),

Gene: Orfeu\_51 Start: 44941, Stop: 43538, Start Num: 65

Candidate Starts for Orfeu\_51:

(10, 45319), (12, 45274), (18, 45232), (Start: 27 @45151 has 5 MA's), (Start: 34 @45106 has 34 MA's), (Start: 65 @44941 has 226 MA's), (Start: 67 @44938 has 65 MA's), (Start: 68 @44932 has 1 MA's), (73, 44890), (86, 44818), (93, 44797), (Start: 121 @44701 has 1 MA's), (135, 44650), (147, 44584), (148, 44581), (153, 44530), (167, 44464), (171, 44452), (181, 44416), (197, 44371), (205, 44341), (212, 44302), (217, 44263), (221, 44230), (222, 44227), (227, 44203), (236, 44170), (239, 44149), (249, 44119), (265, 44005), (269, 43963), (271, 43942), (275, 43909), (285, 43837), (286, 43831), (295, 43783), (304, 43738), (310, 43714), (314, 43699), (323, 43675),

Gene: Orion\_52 Start: 45372, Stop: 43972, Start Num: 67

Candidate Starts for Orion\_52:

(10, 45753), (12, 45708), (18, 45666), (Start: 27 @45585 has 5 MA's), (Start: 34 @45540 has 34 MA's), (Start: 65 @45375 has 226 MA's), (Start: 67 @45372 has 65 MA's), (Start: 68 @45366 has 1 MA's), (73, 45324), (86, 45252), (93, 45231), (Start: 121 @45135 has 1 MA's), (135, 45084), (147,

45018), (148, 45015), (153, 44964), (167, 44898), (171, 44886), (181, 44850), (197, 44805), (205, 44775), (212, 44736), (217, 44697), (221, 44664), (222, 44661), (227, 44637), (236, 44604), (239, 44583), (249, 44553), (265, 44439), (269, 44397), (271, 44376), (275, 44343), (285, 44271), (286, 44265), (295, 44217), (304, 44172), (310, 44148), (314, 44133), (323, 44109),

Gene: Orwigg\_52 Start: 44941, Stop: 43538, Start Num: 65

Candidate Starts for Orwigg\_52:

(Start: 34 @45106 has 34 MA's), (Start: 65 @44941 has 226 MA's), (Start: 67 @44938 has 65 MA's), (Start: 68 @44932 has 1 MA's), (73, 44890), (86, 44818), (93, 44797), (Start: 121 @44701 has 1 MA's), (135, 44650), (147, 44584), (148, 44581), (153, 44530), (167, 44464), (171, 44452), (181, 44416), (197, 44371), (205, 44341), (212, 44302), (217, 44263), (221, 44230), (222, 44227), (227, 44203), (236, 44170), (239, 44149), (249, 44119), (265, 44005), (269, 43963), (271, 43942), (275, 43909), (285, 43837), (286, 43831), (295, 43783), (304, 43738), (310, 43714), (314, 43699), (323, 43675),

Gene: PG1\_52 Start: 45388, Stop: 43985, Start Num: 65

Candidate Starts for PG1\_52:

(Start: 34 @45553 has 34 MA's), (Start: 65 @45388 has 226 MA's), (Start: 67 @45385 has 65 MA's), (Start: 68 @45379 has 1 MA's), (73, 45337), (86, 45265), (93, 45244), (Start: 121 @45148 has 1 MA's), (135, 45097), (147, 45031), (148, 45028), (151, 45004), (153, 44977), (167, 44911), (171, 44899), (181, 44863), (197, 44818), (205, 44788), (212, 44749), (217, 44710), (221, 44677), (222, 44674), (227, 44650), (236, 44617), (239, 44596), (249, 44566), (265, 44452), (269, 44410), (271, 44389), (275, 44356), (285, 44284), (286, 44278), (295, 44230), (304, 44185), (310, 44161), (314, 44146), (323, 44122),

Gene: Pacifista\_53 Start: 44941, Stop: 43541, Start Num: 67

Candidate Starts for Pacifista\_53:

(10, 45322), (12, 45277), (18, 45235), (Start: 27 @45154 has 5 MA's), (Start: 34 @45109 has 34 MA's), (Start: 65 @44944 has 226 MA's), (Start: 67 @44941 has 65 MA's), (Start: 68 @44935 has 1 MA's), (73, 44893), (86, 44821), (93, 44800), (Start: 121 @44704 has 1 MA's), (135, 44653), (147, 44587), (148, 44584), (153, 44533), (167, 44467), (171, 44455), (181, 44419), (197, 44374), (205, 44344), (212, 44305), (217, 44266), (221, 44233), (222, 44230), (227, 44206), (236, 44173), (239, 44152), (249, 44122), (265, 44008), (269, 43966), (271, 43945), (275, 43912), (285, 43840), (286, 43834), (295, 43786), (304, 43741), (310, 43717), (314, 43702), (323, 43678),

Gene: PenguinLover67\_52 Start: 47634, Stop: 46015, Start Num: 17

Candidate Starts for PenguinLover67\_52:

(Start: 17 @47634 has 1 MA's), (28, 47547), (30, 47535), (48, 47424), (50, 47418), (Start: 65 @47352 has 226 MA's), (Start: 121 @47124 has 1 MA's), (125, 47115), (150, 46983), (176, 46854), (209, 46752), (220, 46674), (222, 46665), (225, 46650), (228, 46638), (249, 46557), (255, 46530), (262, 46479), (264, 46467), (265, 46449), (285, 46320), (295, 46266), (298, 46248), (310, 46197), (346, 46038),

Gene: Phaedrus\_47 Start: 44797, Stop: 43184, Start Num: 34

Candidate Starts for Phaedrus\_47:

(16, 44926), (20, 44920), (21, 44905), (Start: 33 @44806 has 9 MA's), (Start: 34 @44797 has 34 MA's), (51, 44701), (Start: 70 @44623 has 2 MA's), (87, 44488), (Start: 121 @44329 has 1 MA's), (127, 44314), (129, 44302), (135, 44272), (144, 44230), (153, 44152), (188, 44020), (195, 43987), (197, 43978), (216, 43885), (222, 43837), (225, 43822), (227, 43813), (241, 43753), (249, 43729), (264, 43639), (275, 43528), (283, 43495), (284, 43492), (287, 43477), (292, 43456), (298, 43423),

Gene: Phamished\_52 Start: 45395, Stop: 43992, Start Num: 65

Candidate Starts for Phamished\_52:

(10, 45773), (12, 45728), (18, 45686), (Start: 27 @45605 has 5 MA's), (Start: 34 @45560 has 34 MA's), (Start: 65 @45395 has 226 MA's), (Start: 67 @45392 has 65 MA's), (Start: 68 @45386 has 1 MA's), (73, 45344), (86, 45272), (93, 45251), (Start: 121 @45155 has 1 MA's), (135, 45104), (147, 45038), (148, 45035), (153, 44984), (167, 44918), (171, 44906), (181, 44870), (197, 44825), (205, 44795), (212, 44756), (217, 44717), (221, 44684), (222, 44681), (227, 44657), (236, 44624), (239, 44603), (249, 44573), (265, 44459), (269, 44417), (271, 44396), (275, 44363), (285, 44291), (286, 44285), (295, 44237), (304, 44192), (310, 44168), (314, 44153), (323, 44129),

Gene: Phantasmagoria\_50 Start: 44864, Stop: 43497, Start Num: 67

Candidate Starts for Phantasmagoria\_50:

(Start: 67 @44864 has 65 MA's), (75, 44801), (77, 44786), (108, 44675), (120, 44624), (134, 44576), (142, 44528), (164, 44387), (167, 44378), (190, 44333), (192, 44327), (193, 44321), (197, 44309), (217, 44204), (221, 44171), (227, 44144), (236, 44111), (241, 44084), (249, 44060), (253, 44033), (258, 44006), (266, 43931), (271, 43886), (275, 43853), (282, 43832), (283, 43826), (289, 43793), (291, 43784), (293, 43775), (335, 43613), (338, 43595), (346, 43538),

Gene: Phareon\_51 Start: 44943, Stop: 43540, Start Num: 65

Candidate Starts for Phareon\_51:

(Start: 34 @45108 has 34 MA's), (Start: 65 @44943 has 226 MA's), (Start: 67 @44940 has 65 MA's), (Start: 68 @44934 has 1 MA's), (73, 44892), (86, 44820), (93, 44799), (Start: 121 @44703 has 1 MA's), (135, 44652), (147, 44586), (148, 44583), (153, 44532), (167, 44466), (171, 44454), (181, 44418), (197, 44373), (205, 44343), (212, 44304), (217, 44265), (221, 44232), (222, 44229), (227, 44205), (236, 44172), (239, 44151), (249, 44121), (265, 44007), (269, 43965), (271, 43944), (275, 43911), (285, 43839), (286, 43833), (295, 43785), (304, 43740), (310, 43716), (314, 43701), (323, 43677),

Gene: PhatCats2014\_52 Start: 45389, Stop: 43989, Start Num: 67

Candidate Starts for PhatCats2014\_52:

(10, 45770), (12, 45725), (18, 45683), (Start: 27 @45602 has 5 MA's), (Start: 34 @45557 has 34 MA's), (Start: 65 @45392 has 226 MA's), (Start: 67 @45389 has 65 MA's), (Start: 68 @45383 has 1 MA's), (73, 45341), (86, 45269), (93, 45248), (Start: 121 @45152 has 1 MA's), (135, 45101), (147, 45035), (148, 45032), (153, 44981), (167, 44915), (171, 44903), (181, 44867), (197, 44822), (205, 44792), (212, 44753), (217, 44714), (221, 44681), (222, 44678), (227, 44654), (236, 44621), (239, 44600), (249, 44570), (265, 44456), (269, 44414), (271, 44393), (275, 44360), (285, 44288), (286, 44282), (295, 44234), (304, 44189), (310, 44165), (314, 44150), (323, 44126),

Gene: PhatLouie\_51 Start: 45243, Stop: 43843, Start Num: 67

Candidate Starts for PhatLouie\_51:

(Start: 34 @45411 has 34 MA's), (Start: 65 @45246 has 226 MA's), (Start: 67 @45243 has 65 MA's), (Start: 68 @45237 has 1 MA's), (73, 45195), (86, 45123), (93, 45102), (Start: 121 @45006 has 1 MA's), (135, 44955), (147, 44889), (148, 44886), (151, 44862), (153, 44835), (167, 44769), (171, 44757), (181, 44721), (197, 44676), (205, 44646), (212, 44607), (217, 44568), (221, 44535), (222, 44532), (227, 44508), (236, 44475), (239, 44454), (249, 44424), (265, 44310), (269, 44268), (271, 44247), (275, 44214), (285, 44142), (286, 44136), (295, 44088), (304, 44043), (310, 44019), (314, 44004), (323, 43980),

Gene: Phayeta\_50 Start: 44752, Stop: 43130, Start Num: 33

Candidate Starts for Phayeta\_50:

(16, 44869), (20, 44863), (21, 44848), (Start: 33 @44752 has 9 MA's), (Start: 34 @44743 has 34 MA's), (51, 44647), (Start: 70 @44569 has 2 MA's), (87, 44434), (Start: 121 @44275 has 1 MA's), (127, 44260), (129, 44248), (135, 44218), (144, 44176), (153, 44098), (188, 43966), (195, 43933), (197, 43924), (216, 43831), (222, 43783), (225, 43768), (227, 43759), (236, 43726), (241, 43699), (249, 43675), (264, 43585), (275, 43474), (283, 43441), (287, 43423), (292, 43402), (298, 43369),

Gene: Phelemich\_49 Start: 46254, Stop: 44887, Start Num: 70

Candidate Starts for Phelemich\_49:

(Start: 34 @46425 has 34 MA's), (Start: 65 @46272 has 226 MA's), (Start: 70 @46254 has 2 MA's), (72, 46224), (Start: 121 @46035 has 1 MA's), (129, 46008), (130, 46005), (169, 45798), (174, 45780), (209, 45663), (218, 45600), (222, 45576), (225, 45561), (241, 45492), (249, 45468), (251, 45465), (267, 45333), (269, 45321), (271, 45300), (275, 45267), (277, 45249), (285, 45195), (293, 45150), (298, 45123), (319, 45042), (328, 45003), (330, 44997), (338, 44961),

Gene: PhenghisKhan\_50 Start: 44867, Stop: 43464, Start Num: 65

Candidate Starts for PhenghisKhan\_50:

(Start: 34 @45032 has 34 MA's), (Start: 65 @44867 has 226 MA's), (Start: 67 @44864 has 65 MA's), (Start: 68 @44858 has 1 MA's), (73, 44816), (86, 44744), (93, 44723), (Start: 121 @44627 has 1 MA's), (135, 44576), (147, 44510), (148, 44507), (153, 44456), (167, 44390), (171, 44378), (181, 44342), (197, 44297), (205, 44267), (212, 44228), (217, 44189), (221, 44156), (222, 44153), (224, 44147), (227, 44129), (236, 44096), (239, 44075), (249, 44045), (265, 43931), (269, 43889), (271, 43868), (275, 43835), (285, 43763), (286, 43757), (295, 43709), (304, 43664), (310, 43640), (314, 43625), (323, 43601),

Gene: Pherdinand\_52 Start: 45404, Stop: 44001, Start Num: 65

Candidate Starts for Pherdinand\_52:

(Start: 65 @45404 has 226 MA's), (Start: 67 @45401 has 65 MA's), (Start: 68 @45395 has 1 MA's), (73, 45353), (86, 45281), (93, 45260), (Start: 121 @45164 has 1 MA's), (135, 45113), (147, 45047), (148, 45044), (153, 44993), (167, 44927), (171, 44915), (181, 44879), (197, 44834), (205, 44804), (212, 44765), (217, 44726), (221, 44693), (222, 44690), (227, 44666), (236, 44633), (239, 44612), (249, 44582), (265, 44468), (269, 44426), (271, 44405), (275, 44372), (285, 44300), (286, 44294), (295, 44246), (304, 44201), (310, 44177), (314, 44162), (323, 44138),

Gene: Phergie\_51 Start: 44859, Stop: 43456, Start Num: 65

Candidate Starts for Phergie\_51:

(Start: 34 @45024 has 34 MA's), (Start: 65 @44859 has 226 MA's), (Start: 67 @44856 has 65 MA's), (Start: 68 @44850 has 1 MA's), (73, 44808), (86, 44736), (93, 44715), (Start: 121 @44619 has 1 MA's), (135, 44568), (147, 44502), (148, 44499), (153, 44448), (167, 44382), (171, 44370), (181, 44334), (197, 44289), (205, 44259), (212, 44220), (217, 44181), (221, 44148), (222, 44145), (224, 44139), (227, 44121), (236, 44088), (239, 44067), (249, 44037), (265, 43923), (269, 43881), (271, 43860), (275, 43827), (285, 43755), (286, 43749), (295, 43701), (304, 43656), (310, 43632), (314, 43617), (323, 43593),

Gene: Philly\_48 Start: 44728, Stop: 43115, Start Num: 34

Candidate Starts for Philly\_48:

(16, 44854), (20, 44848), (21, 44833), (Start: 33 @44737 has 9 MA's), (Start: 34 @44728 has 34 MA's), (51, 44632), (Start: 70 @44554 has 2 MA's), (87, 44419), (Start: 121 @44260 has 1 MA's), (127, 44245), (129, 44233), (135, 44203), (144, 44161), (153, 44083), (188, 43951), (195, 43918), (197, 43909), (216, 43816), (222, 43768), (225, 43753), (227, 43744), (236, 43711), (241, 43684), (249, 43660), (264, 43570), (275, 43459), (283, 43426), (284, 43423), (287, 43408), (292, 43387), (298, 43354),

Gene: Phipps\_51 Start: 45223, Stop: 43820, Start Num: 65

Candidate Starts for Phipps\_51:

(10, 45601), (12, 45556), (18, 45514), (Start: 27 @45433 has 5 MA's), (Start: 34 @45388 has 34 MA's), (Start: 65 @45223 has 226 MA's), (Start: 67 @45220 has 65 MA's), (Start: 68 @45214 has 1 MA's), (73, 45172), (86, 45100), (93, 45079), (Start: 121 @44983 has 1 MA's), (135, 44932), (147, 44866), (148, 44863), (153, 44812), (167, 44746), (171, 44734), (181, 44698), (197, 44653), (205,

44623), (212, 44584), (217, 44545), (221, 44512), (222, 44509), (227, 44485), (236, 44452), (239, 44431), (249, 44401), (265, 44287), (269, 44245), (271, 44224), (275, 44191), (285, 44119), (286, 44113), (295, 44065), (304, 44020), (310, 43996), (314, 43981), (323, 43957),

Gene: Phleuron\_50 Start: 44864, Stop: 43461, Start Num: 65

Candidate Starts for Phleuron\_50:

(Start: 34 @45029 has 34 MA's), (Start: 65 @44864 has 226 MA's), (Start: 67 @44861 has 65 MA's), (Start: 68 @44855 has 1 MA's), (73, 44813), (86, 44741), (93, 44720), (Start: 121 @44624 has 1 MA's), (135, 44573), (147, 44507), (148, 44504), (153, 44453), (167, 44387), (171, 44375), (181, 44339), (197, 44294), (205, 44264), (212, 44225), (217, 44186), (221, 44153), (222, 44150), (224, 44144), (227, 44126), (236, 44093), (239, 44072), (249, 44042), (265, 43928), (269, 43886), (271, 43865), (275, 43832), (285, 43760), (286, 43754), (295, 43706), (304, 43661), (310, 43637), (314, 43622), (323, 43598),

Gene: Phlyer\_49 Start: 45617, Stop: 44004, Start Num: 34

Candidate Starts for Phlyer\_49:

(16, 45743), (20, 45737), (21, 45722), (Start: 33 @45626 has 9 MA's), (Start: 34 @45617 has 34 MA's), (51, 45521), (Start: 70 @45443 has 2 MA's), (87, 45308), (Start: 121 @45149 has 1 MA's), (127, 45134), (129, 45122), (135, 45092), (144, 45050), (153, 44972), (188, 44840), (195, 44807), (197, 44798), (216, 44705), (222, 44657), (225, 44642), (227, 44633), (241, 44573), (249, 44549), (264, 44459), (275, 44348), (283, 44315), (284, 44312), (287, 44297), (292, 44276), (298, 44243),

Gene: PhrankReynolds\_49 Start: 44864, Stop: 43461, Start Num: 65

Candidate Starts for PhrankReynolds\_49:

(Start: 34 @45029 has 34 MA's), (Start: 65 @44864 has 226 MA's), (Start: 67 @44861 has 65 MA's), (Start: 68 @44855 has 1 MA's), (73, 44813), (86, 44741), (93, 44720), (Start: 121 @44624 has 1 MA's), (135, 44573), (147, 44507), (148, 44504), (153, 44453), (167, 44387), (171, 44375), (181, 44339), (197, 44294), (205, 44264), (212, 44225), (217, 44186), (221, 44153), (222, 44150), (224, 44144), (227, 44126), (236, 44093), (239, 44072), (249, 44042), (265, 43928), (269, 43886), (271, 43865), (275, 43832), (285, 43760), (286, 43754), (295, 43706), (304, 43661), (310, 43637), (314, 43622), (323, 43598),

Gene: PhrodoBaggins\_51 Start: 45371, Stop: 43968, Start Num: 65

Candidate Starts for PhrodoBaggins\_51:

(Start: 34 @45536 has 34 MA's), (Start: 65 @45371 has 226 MA's), (Start: 67 @45368 has 65 MA's), (Start: 68 @45362 has 1 MA's), (73, 45320), (86, 45248), (93, 45227), (Start: 121 @45131 has 1 MA's), (135, 45080), (147, 45014), (148, 45011), (153, 44960), (167, 44894), (171, 44882), (181, 44846), (197, 44801), (205, 44771), (212, 44732), (217, 44693), (221, 44660), (222, 44657), (227, 44633), (236, 44600), (239, 44579), (249, 44549), (265, 44435), (269, 44393), (271, 44372), (275, 44339), (285, 44267), (286, 44261), (295, 44213), (304, 44168), (310, 44144), (314, 44129), (323, 44105),

Gene: Phunky\_51 Start: 45240, Stop: 43837, Start Num: 65

Candidate Starts for Phunky\_51:

(Start: 34 @45405 has 34 MA's), (Start: 65 @45240 has 226 MA's), (Start: 67 @45237 has 65 MA's), (Start: 68 @45231 has 1 MA's), (73, 45189), (86, 45117), (93, 45096), (Start: 121 @45000 has 1 MA's), (135, 44949), (147, 44883), (148, 44880), (153, 44829), (167, 44763), (171, 44751), (181, 44715), (197, 44670), (205, 44640), (212, 44601), (217, 44562), (221, 44529), (222, 44526), (227, 44502), (236, 44469), (239, 44448), (249, 44418), (265, 44304), (269, 44262), (271, 44241), (275, 44208), (285, 44136), (286, 44130), (295, 44082), (304, 44037), (310, 44013), (314, 43998), (323, 43974),

Gene: Piglet\_0051 Start: 45365, Stop: 43962, Start Num: 65

Candidate Starts for Piglet\_0051:

(Start: 34 @45530 has 34 MA's), (Start: 65 @45365 has 226 MA's), (Start: 67 @45362 has 65 MA's), (Start: 68 @45356 has 1 MA's), (73, 45314), (86, 45242), (93, 45221), (Start: 121 @45125 has 1 MA's), (135, 45074), (147, 45008), (148, 45005), (151, 44981), (153, 44954), (167, 44888), (171, 44876), (181, 44840), (197, 44795), (205, 44765), (212, 44726), (217, 44687), (221, 44654), (222, 44651), (227, 44627), (236, 44594), (239, 44573), (249, 44543), (265, 44429), (269, 44387), (271, 44366), (275, 44333), (285, 44261), (286, 44255), (295, 44207), (304, 44162), (310, 44138), (314, 44123), (323, 44099),

Gene: Pine5\_42 Start: 35716, Stop: 34616, Start Num: 117

Candidate Starts for Pine5\_42:

(Start: 117 @35716 has 1 MA's), (153, 35521), (183, 35425), (208, 35359), (211, 35350), (214, 35326), (231, 35227), (237, 35206), (241, 35182), (259, 35107), (264, 35077), (267, 35032), (271, 34999), (275, 34966), (306, 34822), (309, 34810), (312, 34801), (320, 34768), (325, 34750), (338, 34693), (342, 34663), (347, 34627),

Gene: PinheadLarry\_51 Start: 44953, Stop: 43550, Start Num: 64

Candidate Starts for PinheadLarry\_51:

(Start: 34 @45115 has 34 MA's), (Start: 64 @44953 has 26 MA's), (Start: 67 @44950 has 65 MA's), (73, 44902), (86, 44830), (93, 44809), (Start: 121 @44713 has 1 MA's), (135, 44662), (147, 44596), (148, 44593), (151, 44569), (153, 44542), (167, 44476), (171, 44464), (181, 44428), (197, 44383), (205, 44353), (212, 44314), (217, 44275), (221, 44242), (222, 44239), (227, 44215), (236, 44182), (239, 44161), (249, 44131), (265, 44017), (269, 43975), (271, 43954), (275, 43921), (285, 43849), (286, 43843), (295, 43795), (304, 43750), (310, 43726), (314, 43711), (323, 43687),

Gene: Pinkman\_50 Start: 44802, Stop: 43399, Start Num: 65

Candidate Starts for Pinkman\_50:

(10, 45180), (12, 45135), (18, 45093), (Start: 27 @45012 has 5 MA's), (Start: 34 @44967 has 34 MA's), (Start: 65 @44802 has 226 MA's), (Start: 67 @44799 has 65 MA's), (Start: 68 @44793 has 1 MA's), (73, 44751), (86, 44679), (93, 44658), (Start: 121 @44562 has 1 MA's), (135, 44511), (147, 44445), (148, 44442), (153, 44391), (167, 44325), (171, 44313), (181, 44277), (197, 44232), (205, 44202), (212, 44163), (217, 44124), (221, 44091), (222, 44088), (224, 44082), (227, 44064), (236, 44031), (239, 44010), (249, 43980), (265, 43866), (269, 43824), (271, 43803), (275, 43770), (285, 43698), (286, 43692), (295, 43644), (304, 43599), (310, 43575), (314, 43560), (323, 43536),

Gene: Pipefish\_51 Start: 46266, Stop: 44656, Start Num: 34

Candidate Starts for Pipefish\_51:

(16, 46392), (20, 46386), (21, 46371), (Start: 33 @46275 has 9 MA's), (Start: 34 @46266 has 34 MA's), (51, 46170), (Start: 70 @46092 has 2 MA's), (83, 45969), (87, 45957), (94, 45933), (98, 45918), (Start: 121 @45801 has 1 MA's), (127, 45786), (129, 45774), (135, 45744), (144, 45702), (153, 45624), (188, 45492), (195, 45459), (197, 45450), (216, 45357), (222, 45309), (225, 45294), (227, 45285), (236, 45252), (241, 45225), (249, 45201), (264, 45111), (275, 45000), (283, 44967), (284, 44964), (287, 44949), (292, 44928), (298, 44895),

Gene: Pipsqueak\_51 Start: 45247, Stop: 43844, Start Num: 65

Candidate Starts for Pipsqueak\_51:

(10, 45625), (12, 45580), (18, 45538), (Start: 27 @45457 has 5 MA's), (Start: 34 @45412 has 34 MA's), (Start: 65 @45247 has 226 MA's), (Start: 67 @45244 has 65 MA's), (Start: 68 @45238 has 1 MA's), (73, 45196), (86, 45124), (93, 45103), (Start: 121 @45007 has 1 MA's), (135, 44956), (147, 44890), (148, 44887), (153, 44836), (167, 44770), (171, 44758), (181, 44722), (197, 44677), (205, 44647), (212, 44608), (217, 44569), (221, 44536), (222, 44533), (227, 44509), (236, 44476), (239, 44455), (249, 44425), (265, 44311), (269, 44269), (271, 44248), (275, 44215), (285, 44143), (286, 44137), (295, 44089), (304, 44044), (310, 44020), (314, 44005), (323, 43981),

Gene: Placalicious\_50 Start: 44940, Stop: 43537, Start Num: 65

Candidate Starts for Placalicious\_50:

(Start: 34 @45105 has 34 MA's), (Start: 65 @44940 has 226 MA's), (Start: 67 @44937 has 65 MA's), (Start: 68 @44931 has 1 MA's), (73, 44889), (86, 44817), (93, 44796), (Start: 121 @44700 has 1 MA's), (135, 44649), (147, 44583), (148, 44580), (151, 44556), (153, 44529), (167, 44463), (171, 44451), (181, 44415), (197, 44370), (205, 44340), (212, 44301), (217, 44262), (221, 44229), (222, 44226), (227, 44202), (236, 44169), (239, 44148), (249, 44118), (265, 44004), (269, 43962), (271, 43941), (275, 43908), (285, 43836), (286, 43830), (295, 43782), (304, 43737), (310, 43713), (314, 43698), (323, 43674),

Gene: Plmatters\_51 Start: 45243, Stop: 43840, Start Num: 65

Candidate Starts for Plmatters\_51:

(Start: 34 @45408 has 34 MA's), (Start: 65 @45243 has 226 MA's), (Start: 67 @45240 has 65 MA's), (Start: 68 @45234 has 1 MA's), (73, 45192), (86, 45120), (93, 45099), (Start: 121 @45003 has 1 MA's), (135, 44952), (147, 44886), (148, 44883), (153, 44832), (167, 44766), (171, 44754), (181, 44718), (197, 44673), (205, 44643), (212, 44604), (217, 44565), (221, 44532), (222, 44529), (227, 44505), (236, 44472), (239, 44451), (249, 44421), (265, 44307), (269, 44265), (271, 44244), (275, 44211), (285, 44139), (286, 44133), (295, 44085), (304, 44040), (310, 44016), (314, 44001), (323, 43977),

Gene: Podrick\_51 Start: 45234, Stop: 43831, Start Num: 65

Candidate Starts for Podrick\_51:

(10, 45612), (12, 45567), (18, 45525), (Start: 27 @45444 has 5 MA's), (Start: 34 @45399 has 34 MA's), (Start: 65 @45234 has 226 MA's), (Start: 67 @45231 has 65 MA's), (Start: 68 @45225 has 1 MA's), (73, 45183), (86, 45111), (93, 45090), (Start: 121 @44994 has 1 MA's), (135, 44943), (147, 44877), (148, 44874), (153, 44823), (167, 44757), (171, 44745), (181, 44709), (197, 44664), (205, 44634), (212, 44595), (217, 44556), (221, 44523), (222, 44520), (227, 44496), (236, 44463), (239, 44442), (249, 44412), (265, 44298), (269, 44256), (271, 44235), (275, 44202), (285, 44130), (286, 44124), (295, 44076), (304, 44031), (310, 44007), (314, 43992), (323, 43968),

Gene: Pops\_51 Start: 45258, Stop: 43855, Start Num: 65

Candidate Starts for Pops\_51:

(10, 45636), (12, 45591), (18, 45549), (Start: 27 @45468 has 5 MA's), (Start: 34 @45423 has 34 MA's), (Start: 65 @45258 has 226 MA's), (Start: 67 @45255 has 65 MA's), (Start: 68 @45249 has 1 MA's), (73, 45207), (86, 45135), (93, 45114), (Start: 121 @45018 has 1 MA's), (135, 44967), (147, 44901), (148, 44898), (151, 44874), (153, 44847), (167, 44781), (171, 44769), (181, 44733), (197, 44688), (205, 44658), (212, 44619), (217, 44580), (221, 44547), (222, 44544), (227, 44520), (236, 44487), (239, 44466), (249, 44436), (265, 44322), (269, 44280), (271, 44259), (275, 44226), (285, 44154), (286, 44148), (295, 44100), (304, 44055), (310, 44031), (314, 44016), (323, 43992),

Gene: Poster\_45 Start: 44678, Stop: 43338, Start Num: 65

Candidate Starts for Poster\_45:

(Start: 64 @44681 has 26 MA's), (Start: 65 @44678 has 226 MA's), (Start: 68 @44669 has 1 MA's), (69, 44663), (76, 44612), (116, 44465), (135, 44399), (139, 44375), (167, 44213), (173, 44195), (176, 44180), (178, 44177), (187, 44150), (206, 44087), (207, 44078), (220, 43991), (225, 43967), (236, 43925), (237, 43922), (239, 43904), (249, 43874), (255, 43847), (260, 43814), (263, 43793), (264, 43784), (267, 43739), (268, 43733), (269, 43724), (271, 43703), (275, 43670), (286, 43631), (298, 43565), (299, 43562), (319, 43493), (323, 43475),

Gene: Potter\_50 Start: 44970, Stop: 43567, Start Num: 65

Candidate Starts for Potter\_50:



(10, 45348), (12, 45303), (18, 45261), (Start: 27 @45180 has 5 MA's), (Start: 34 @45135 has 34 MA's), (Start: 65 @44970 has 226 MA's), (Start: 67 @44967 has 65 MA's), (Start: 68 @44961 has 1 MA's), (73, 44919), (86, 44847), (93, 44826), (Start: 121 @44730 has 1 MA's), (135, 44679), (147, 44613), (148, 44610), (153, 44559), (167, 44493), (171, 44481), (181, 44445), (197, 44400), (205, 44370), (212, 44331), (217, 44292), (221, 44259), (222, 44256), (224, 44250), (227, 44232), (236, 44199), (239, 44178), (249, 44148), (265, 44034), (269, 43992), (271, 43971), (275, 43938), (285, 43866), (286, 43860), (295, 43812), (304, 43767), (310, 43743), (314, 43728), (323, 43704),

Gene: Prickles\_51 Start: 45234, Stop: 43831, Start Num: 65

Candidate Starts for Prickles\_51:

(10, 45612), (12, 45567), (18, 45525), (Start: 27 @45444 has 5 MA's), (Start: 34 @45399 has 34 MA's), (Start: 65 @45234 has 226 MA's), (Start: 67 @45231 has 65 MA's), (Start: 68 @45225 has 1 MA's), (73, 45183), (86, 45111), (93, 45090), (Start: 121 @44994 has 1 MA's), (135, 44943), (147, 44877), (148, 44874), (153, 44823), (167, 44757), (171, 44745), (181, 44709), (197, 44664), (205, 44634), (212, 44595), (217, 44556), (221, 44523), (222, 44520), (227, 44496), (236, 44463), (239, 44442), (249, 44412), (265, 44298), (269, 44256), (271, 44235), (275, 44202), (285, 44130), (286, 44124), (295, 44076), (304, 44031), (310, 44007), (314, 43992), (323, 43968),

Gene: Prince\_47 Start: 45887, Stop: 44547, Start Num: 65

Candidate Starts for Prince\_47:

(Start: 64 @45890 has 26 MA's), (Start: 65 @45887 has 226 MA's), (Start: 68 @45878 has 1 MA's), (69, 45872), (76, 45821), (116, 45674), (130, 45629), (135, 45608), (157, 45467), (161, 45443), (167, 45422), (168, 45419), (173, 45404), (176, 45389), (203, 45320), (205, 45305), (207, 45287), (213, 45263), (222, 45191), (227, 45167), (236, 45134), (237, 45131), (239, 45113), (249, 45083), (260, 45023), (262, 45005), (264, 44993), (267, 44948), (268, 44942), (269, 44933), (274, 44903), (275, 44879), (286, 44840), (294, 44795), (298, 44774), (299, 44771), (319, 44702), (323, 44684),

Gene: ProfessorX\_51 Start: 45235, Stop: 43832, Start Num: 65

Candidate Starts for ProfessorX\_51:

(10, 45613), (12, 45568), (18, 45526), (Start: 27 @45445 has 5 MA's), (Start: 34 @45400 has 34 MA's), (Start: 65 @45235 has 226 MA's), (Start: 67 @45232 has 65 MA's), (Start: 68 @45226 has 1 MA's), (73, 45184), (86, 45112), (93, 45091), (Start: 121 @44995 has 1 MA's), (135, 44944), (147, 44878), (148, 44875), (151, 44851), (153, 44824), (167, 44758), (171, 44746), (181, 44710), (197, 44665), (205, 44635), (212, 44596), (217, 44557), (221, 44524), (222, 44521), (227, 44497), (236, 44464), (239, 44443), (249, 44413), (265, 44299), (269, 44257), (271, 44236), (275, 44203), (285, 44131), (286, 44125), (295, 44077), (304, 44032), (310, 44008), (314, 43993), (323, 43969),

Gene: Puhltonio\_51 Start: 45244, Stop: 43841, Start Num: 65

Candidate Starts for Puhltonio\_51:

(10, 45622), (12, 45577), (18, 45535), (Start: 27 @45454 has 5 MA's), (Start: 34 @45409 has 34 MA's), (Start: 65 @45244 has 226 MA's), (Start: 67 @45241 has 65 MA's), (Start: 68 @45235 has 1 MA's), (73, 45193), (86, 45121), (93, 45100), (Start: 121 @45004 has 1 MA's), (135, 44953), (147, 44887), (148, 44884), (153, 44833), (167, 44767), (171, 44755), (181, 44719), (197, 44674), (205, 44644), (212, 44605), (217, 44566), (221, 44533), (222, 44530), (227, 44506), (236, 44473), (239, 44452), (249, 44422), (265, 44308), (269, 44266), (271, 44245), (275, 44212), (285, 44140), (286, 44134), (295, 44086), (304, 44041), (310, 44017), (314, 44002), (323, 43978),

Gene: Puppies\_31 Start: 24982, Stop: 23882, Start Num: 118

Candidate Starts for Puppies\_31:

(Start: 118 @24982 has 5 MA's), (123, 24967), (134, 24934), (152, 24805), (159, 24766), (163, 24742), (201, 24670), (223, 24550), (225, 24538), (248, 24442), (264, 24349), (266, 24316), (271, 24271), (272, 24268), (275, 24238), (282, 24217), (283, 24211), (284, 24208), (291, 24166), (304, 24103), (327, 24007), (332, 23992), (337, 23971),

Gene: QueenBeane\_51 Start: 45234, Stop: 43831, Start Num: 65

Candidate Starts for QueenBeane\_51:

(10, 45612), (12, 45567), (18, 45525), (Start: 27 @45444 has 5 MA's), (Start: 34 @45399 has 34 MA's), (Start: 65 @45234 has 226 MA's), (Start: 67 @45231 has 65 MA's), (Start: 68 @45225 has 1 MA's), (73, 45183), (86, 45111), (93, 45090), (Start: 121 @44994 has 1 MA's), (135, 44943), (147, 44877), (148, 44874), (153, 44823), (167, 44757), (171, 44745), (181, 44709), (197, 44664), (205, 44634), (212, 44595), (217, 44556), (221, 44523), (222, 44520), (227, 44496), (236, 44463), (239, 44442), (249, 44412), (265, 44298), (269, 44256), (271, 44235), (275, 44202), (285, 44130), (286, 44124), (295, 44076), (304, 44031), (310, 44007), (314, 43992), (323, 43968),

Gene: Quesadilla\_52 Start: 47383, Stop: 46022, Start Num: 60

Candidate Starts for Quesadilla\_52:

(43, 47464), (54, 47407), (Start: 60 @47383 has 1 MA's), (Start: 61 @47380 has 2 MA's), (Start: 68 @47362 has 1 MA's), (Start: 70 @47353 has 2 MA's), (Start: 121 @47131 has 1 MA's), (150, 46990), (167, 46894), (176, 46861), (195, 46822), (209, 46759), (213, 46744), (222, 46672), (225, 46657), (234, 46621), (236, 46615), (239, 46594), (240, 46591), (255, 46537), (257, 46516), (262, 46486), (268, 46423), (271, 46393), (283, 46333), (298, 46255), (299, 46252), (310, 46204), (319, 46183), (338, 46102), (346, 46045),

Gene: Quisquilliae\_51 Start: 45271, Stop: 43868, Start Num: 65

Candidate Starts for Quisquilliae\_51:

(10, 45649), (12, 45604), (18, 45562), (Start: 27 @45481 has 5 MA's), (Start: 34 @45436 has 34 MA's), (Start: 65 @45271 has 226 MA's), (Start: 67 @45268 has 65 MA's), (Start: 68 @45262 has 1 MA's), (73, 45220), (86, 45148), (93, 45127), (Start: 121 @45031 has 1 MA's), (135, 44980), (147, 44914), (148, 44911), (153, 44860), (167, 44794), (171, 44782), (181, 44746), (197, 44701), (205, 44671), (212, 44632), (217, 44593), (221, 44560), (222, 44557), (227, 44533), (236, 44500), (239, 44479), (249, 44449), (265, 44335), (269, 44293), (271, 44272), (275, 44239), (285, 44167), (286, 44161), (295, 44113), (304, 44068), (310, 44044), (314, 44029), (323, 44005),

Gene: Qyrzula\_47 Start: 44983, Stop: 43616, Start Num: 67

Candidate Starts for Qyrzula\_47:

(Start: 67 @44983 has 65 MA's), (75, 44920), (77, 44905), (108, 44794), (120, 44743), (134, 44695), (142, 44647), (162, 44512), (164, 44506), (167, 44497), (190, 44452), (192, 44446), (193, 44440), (197, 44428), (217, 44323), (221, 44290), (227, 44263), (236, 44230), (241, 44203), (249, 44179), (253, 44152), (258, 44125), (266, 44050), (271, 44005), (275, 43972), (282, 43951), (283, 43945), (289, 43912), (291, 43903), (293, 43894), (319, 43795), (335, 43732), (338, 43714), (346, 43657),

Gene: RagingRooster\_49 Start: 44878, Stop: 43265, Start Num: 34

Candidate Starts for RagingRooster\_49:

(16, 45004), (20, 44998), (21, 44983), (Start: 33 @44887 has 9 MA's), (Start: 34 @44878 has 34 MA's), (51, 44782), (Start: 70 @44704 has 2 MA's), (87, 44569), (Start: 121 @44410 has 1 MA's), (127, 44395), (129, 44383), (135, 44353), (144, 44311), (153, 44233), (166, 44167), (167, 44164), (188, 44101), (195, 44068), (197, 44059), (216, 43966), (222, 43918), (223, 43915), (225, 43903), (227, 43894), (241, 43834), (249, 43810), (264, 43720), (275, 43609), (283, 43576), (284, 43573), (287, 43558), (292, 43537), (298, 43504),

Gene: RainyPolka\_45 Start: 36140, Stop: 34974, Start Num: 99

Candidate Starts for RainyPolka\_45:

(Start: 99 @36140 has 5 MA's), (102, 36131), (114, 36101), (126, 36062), (138, 35996), (140, 35987), (154, 35891), (155, 35885), (163, 35840), (212, 35720), (215, 35702), (225, 35630), (233, 35600), (240, 35564), (241, 35561), (244, 35552), (290, 35282), (291, 35276), (293, 35267), (302, 35222), (306, 35198), (308, 35189), (317, 35141), (322, 35126), (329, 35099), (334, 35081), (348, 34985),

Gene: RawrgerThat\_47 Start: 45738, Stop: 44398, Start Num: 65

Candidate Starts for RawrgerThat\_47:

(Start: 64 @45741 has 26 MA's), (Start: 65 @45738 has 226 MA's), (Start: 68 @45729 has 1 MA's), (69, 45723), (76, 45672), (116, 45525), (130, 45480), (135, 45459), (157, 45318), (161, 45294), (167, 45273), (168, 45270), (173, 45255), (176, 45240), (203, 45171), (205, 45156), (213, 45114), (222, 45042), (225, 45027), (227, 45018), (236, 44985), (237, 44982), (239, 44964), (249, 44934), (260, 44874), (262, 44856), (264, 44844), (267, 44799), (268, 44793), (269, 44784), (274, 44754), (275, 44730), (286, 44691), (294, 44646), (298, 44625), (299, 44622), (319, 44553), (323, 44535),

Gene: RedMaple\_51 Start: 45385, Stop: 43982, Start Num: 65

Candidate Starts for RedMaple\_51:

(Start: 34 @45550 has 34 MA's), (Start: 65 @45385 has 226 MA's), (Start: 67 @45382 has 65 MA's), (Start: 68 @45376 has 1 MA's), (73, 45334), (86, 45262), (93, 45241), (Start: 121 @45145 has 1 MA's), (135, 45094), (147, 45028), (148, 45025), (153, 44974), (167, 44908), (171, 44896), (181, 44860), (197, 44815), (205, 44785), (212, 44746), (217, 44707), (221, 44674), (222, 44671), (227, 44647), (236, 44614), (239, 44593), (249, 44563), (265, 44449), (269, 44407), (271, 44386), (275, 44353), (285, 44281), (286, 44275), (295, 44227), (304, 44182), (310, 44158), (314, 44143), (323, 44119),

Gene: Reprobate\_50 Start: 46277, Stop: 44892, Start Num: 65

Candidate Starts for Reprobate\_50:

(Start: 34 @46430 has 34 MA's), (Start: 65 @46277 has 226 MA's), (Start: 70 @46259 has 2 MA's), (72, 46229), (Start: 121 @46040 has 1 MA's), (129, 46013), (130, 46010), (169, 45803), (174, 45785), (209, 45668), (218, 45605), (222, 45581), (225, 45566), (241, 45497), (249, 45473), (251, 45470), (267, 45338), (269, 45326), (271, 45305), (275, 45272), (277, 45254), (285, 45200), (293, 45155), (298, 45128), (319, 45047), (328, 45008), (330, 45002), (338, 44966),

Gene: Rhinoforte\_50 Start: 44985, Stop: 43618, Start Num: 67

Candidate Starts for Rhinoforte\_50:

(Start: 67 @44985 has 65 MA's), (75, 44922), (77, 44907), (108, 44796), (120, 44745), (134, 44697), (142, 44649), (164, 44508), (167, 44499), (190, 44454), (192, 44448), (193, 44442), (197, 44430), (217, 44325), (221, 44292), (227, 44265), (236, 44232), (241, 44205), (249, 44181), (253, 44154), (258, 44127), (266, 44052), (271, 44007), (275, 43974), (282, 43953), (283, 43947), (289, 43914), (293, 43896), (335, 43734), (338, 43716), (346, 43659),

Gene: Rich\_49 Start: 46053, Stop: 44674, Start Num: 65

Candidate Starts for Rich\_49:

(26, 46257), (29, 46248), (45, 46143), (Start: 65 @46053 has 226 MA's), (Start: 70 @46035 has 2 MA's), (Start: 121 @45822 has 1 MA's), (130, 45792), (158, 45627), (169, 45585), (174, 45567), (179, 45552), (180, 45549), (200, 45501), (209, 45450), (222, 45363), (225, 45348), (227, 45339), (238, 45288), (241, 45279), (249, 45255), (251, 45252), (263, 45174), (264, 45165), (267, 45120), (275, 45054), (277, 45036), (285, 44982), (293, 44937), (298, 44910), (319, 44829), (338, 44748),

Gene: Ricotta\_51 Start: 44954, Stop: 43554, Start Num: 67

Candidate Starts for Ricotta\_51:

(10, 45335), (12, 45290), (18, 45248), (Start: 27 @45167 has 5 MA's), (Start: 34 @45122 has 34 MA's), (Start: 65 @44957 has 226 MA's), (Start: 67 @44954 has 65 MA's), (Start: 68 @44948 has 1 MA's), (73, 44906), (86, 44834), (93, 44813), (Start: 121 @44717 has 1 MA's), (135, 44666), (147, 44600), (148, 44597), (153, 44546), (167, 44480), (171, 44468), (181, 44432), (197, 44387), (205, 44357), (212, 44318), (217, 44279), (221, 44246), (222, 44243), (227, 44219), (236, 44186), (239, 44165), (249, 44135), (265, 44021), (269, 43979), (271, 43958), (275, 43925), (285, 43853), (286, 43847), (295, 43799), (304, 43754), (310, 43730), (314, 43715), (323, 43691),

Gene: Riggan\_51 Start: 45230, Stop: 43827, Start Num: 65

Candidate Starts for Riggan\_51:

(10, 45608), (12, 45563), (18, 45521), (Start: 27 @45440 has 5 MA's), (Start: 34 @45395 has 34 MA's), (Start: 65 @45230 has 226 MA's), (Start: 67 @45227 has 65 MA's), (Start: 68 @45221 has 1 MA's), (73, 45179), (86, 45107), (93, 45086), (Start: 121 @44990 has 1 MA's), (135, 44939), (147, 44873), (148, 44870), (153, 44819), (167, 44753), (171, 44741), (181, 44705), (197, 44660), (205, 44630), (212, 44591), (217, 44552), (221, 44519), (222, 44516), (227, 44492), (236, 44459), (239, 44438), (249, 44408), (265, 44294), (269, 44252), (271, 44231), (275, 44198), (285, 44126), (286, 44120), (295, 44072), (304, 44027), (310, 44003), (314, 43988), (323, 43964),

Gene: Rimu\_53 Start: 44970, Stop: 43567, Start Num: 65

Candidate Starts for Rimu\_53:

(10, 45348), (12, 45303), (18, 45261), (Start: 27 @45180 has 5 MA's), (Start: 34 @45135 has 34 MA's), (Start: 65 @44970 has 226 MA's), (Start: 67 @44967 has 65 MA's), (Start: 68 @44961 has 1 MA's), (73, 44919), (86, 44847), (93, 44826), (Start: 121 @44730 has 1 MA's), (135, 44679), (147, 44613), (148, 44610), (153, 44559), (167, 44493), (171, 44481), (181, 44445), (197, 44400), (205, 44370), (212, 44331), (217, 44292), (221, 44259), (222, 44256), (227, 44232), (236, 44199), (239, 44178), (249, 44148), (265, 44034), (269, 43992), (271, 43971), (275, 43938), (285, 43866), (286, 43860), (295, 43812), (304, 43767), (310, 43743), (314, 43728), (323, 43704),

Gene: Rita1961\_49 Start: 44862, Stop: 43249, Start Num: 34

Candidate Starts for Rita1961\_49:

(16, 44988), (20, 44982), (21, 44967), (Start: 33 @44871 has 9 MA's), (Start: 34 @44862 has 34 MA's), (51, 44766), (Start: 70 @44688 has 2 MA's), (87, 44553), (Start: 121 @44394 has 1 MA's), (127, 44379), (129, 44367), (135, 44337), (144, 44295), (153, 44217), (188, 44085), (195, 44052), (197, 44043), (216, 43950), (222, 43902), (225, 43887), (227, 43878), (236, 43845), (241, 43818), (249, 43794), (264, 43704), (275, 43593), (283, 43560), (287, 43542), (292, 43521), (298, 43488),

Gene: Robyn\_50 Start: 44826, Stop: 43423, Start Num: 65

Candidate Starts for Robyn\_50:

(10, 45204), (12, 45159), (18, 45117), (Start: 27 @45036 has 5 MA's), (Start: 34 @44991 has 34 MA's), (Start: 65 @44826 has 226 MA's), (Start: 67 @44823 has 65 MA's), (Start: 68 @44817 has 1 MA's), (73, 44775), (86, 44703), (93, 44682), (Start: 121 @44586 has 1 MA's), (135, 44535), (147, 44469), (148, 44466), (153, 44415), (167, 44349), (171, 44337), (181, 44301), (197, 44256), (205, 44226), (212, 44187), (217, 44148), (221, 44115), (222, 44112), (227, 44088), (236, 44055), (239, 44034), (249, 44004), (265, 43890), (269, 43848), (271, 43827), (275, 43794), (285, 43722), (286, 43716), (295, 43668), (304, 43623), (310, 43599), (314, 43584), (323, 43560),

Gene: Roliet\_51 Start: 45243, Stop: 43840, Start Num: 65

Candidate Starts for Roliet\_51:

(10, 45621), (12, 45576), (18, 45534), (Start: 27 @45453 has 5 MA's), (Start: 34 @45408 has 34 MA's), (Start: 65 @45243 has 226 MA's), (Start: 67 @45240 has 65 MA's), (Start: 68 @45234 has 1 MA's), (73, 45192), (86, 45120), (93, 45099), (Start: 121 @45003 has 1 MA's), (135, 44952), (147, 44886), (148, 44883), (153, 44832), (167, 44766), (171, 44754), (181, 44718), (197, 44673), (205, 44643), (212, 44604), (217, 44565), (221, 44532), (222, 44529), (227, 44505), (236, 44472), (239, 44451), (249, 44421), (265, 44307), (269, 44265), (271, 44244), (275, 44211), (285, 44139), (286, 44133), (295, 44085), (304, 44040), (310, 44016), (314, 44001), (323, 43977),

Gene: RomaT\_49 Start: 45660, Stop: 44038, Start Num: 33

Candidate Starts for RomaT\_49:

(16, 45777), (20, 45771), (21, 45756), (Start: 33 @45660 has 9 MA's), (Start: 34 @45651 has 34 MA's), (51, 45555), (Start: 70 @45477 has 2 MA's), (87, 45342), (Start: 121 @45183 has 1 MA's),

(127, 45168), (129, 45156), (135, 45126), (144, 45084), (153, 45006), (188, 44874), (195, 44841), (197, 44832), (216, 44739), (222, 44691), (225, 44676), (227, 44667), (241, 44607), (249, 44583), (264, 44493), (275, 44382), (283, 44349), (284, 44346), (287, 44331), (292, 44310), (298, 44277),

Gene: Roscoe\_52 Start: 45480, Stop: 44077, Start Num: 65

Candidate Starts for Roscoe\_52:

(10, 45858), (12, 45813), (18, 45771), (Start: 27 @45690 has 5 MA's), (Start: 34 @45645 has 34 MA's), (Start: 65 @45480 has 226 MA's), (Start: 67 @45477 has 65 MA's), (Start: 68 @45471 has 1 MA's), (73, 45429), (86, 45357), (93, 45336), (Start: 121 @45240 has 1 MA's), (135, 45189), (147, 45123), (148, 45120), (153, 45069), (167, 45003), (171, 44991), (181, 44955), (197, 44910), (205, 44880), (212, 44841), (217, 44802), (221, 44769), (222, 44766), (227, 44742), (236, 44709), (239, 44688), (249, 44658), (265, 44544), (269, 44502), (271, 44481), (275, 44448), (285, 44376), (286, 44370), (295, 44322), (304, 44277), (310, 44253), (314, 44238), (323, 44214),

Gene: Rosebush\_49 Start: 44997, Stop: 43630, Start Num: 67

Candidate Starts for Rosebush\_49:

(Start: 67 @44997 has 65 MA's), (75, 44934), (77, 44919), (108, 44808), (120, 44757), (134, 44709), (142, 44661), (164, 44520), (167, 44511), (190, 44466), (192, 44460), (193, 44454), (197, 44442), (217, 44337), (221, 44304), (225, 44286), (227, 44277), (236, 44244), (241, 44217), (249, 44193), (253, 44166), (258, 44139), (266, 44064), (271, 44019), (275, 43986), (282, 43965), (283, 43959), (289, 43926), (291, 43917), (293, 43908), (335, 43746), (338, 43728), (346, 43671),

Gene: Roy17\_51 Start: 44934, Stop: 43531, Start Num: 65

Candidate Starts for Roy17\_51:

(Start: 34 @45099 has 34 MA's), (Start: 65 @44934 has 226 MA's), (Start: 67 @44931 has 65 MA's), (Start: 68 @44925 has 1 MA's), (73, 44883), (86, 44811), (93, 44790), (Start: 121 @44694 has 1 MA's), (135, 44643), (147, 44577), (148, 44574), (153, 44523), (167, 44457), (171, 44445), (181, 44409), (197, 44364), (205, 44334), (212, 44295), (217, 44256), (221, 44223), (222, 44220), (227, 44196), (236, 44163), (239, 44142), (249, 44112), (265, 43998), (269, 43956), (271, 43935), (275, 43902), (285, 43830), (286, 43824), (295, 43776), (304, 43731), (310, 43707), (314, 43692), (323, 43668),

Gene: SDcharge11\_51 Start: 45053, Stop: 43818, Start Num: 100

Candidate Starts for SDcharge11\_51:

(Start: 100 @45053 has 1 MA's), (Start: 121 @44981 has 1 MA's), (135, 44930), (147, 44864), (148, 44861), (153, 44810), (167, 44744), (171, 44732), (181, 44696), (197, 44651), (205, 44621), (212, 44582), (217, 44543), (221, 44510), (222, 44507), (227, 44483), (236, 44450), (239, 44429), (249, 44399), (265, 44285), (269, 44243), (271, 44222), (275, 44189), (285, 44117), (286, 44111), (295, 44063), (304, 44018), (310, 43994), (314, 43979), (323, 43955),

Gene: Sabella\_49 Start: 44851, Stop: 43490, Start Num: 67

Candidate Starts for Sabella\_49:

(Start: 67 @44851 has 65 MA's), (75, 44788), (77, 44773), (108, 44662), (120, 44617), (134, 44569), (142, 44521), (164, 44380), (167, 44371), (190, 44326), (192, 44320), (193, 44314), (197, 44302), (217, 44197), (221, 44164), (225, 44146), (227, 44137), (236, 44104), (241, 44077), (249, 44053), (258, 43999), (266, 43924), (271, 43879), (275, 43846), (282, 43825), (283, 43819), (289, 43786), (291, 43777), (293, 43768), (335, 43606), (338, 43588), (346, 43531),

Gene: Saguaro\_53 Start: 47395, Stop: 46115, Start Num: 65

Candidate Starts for Saguaro\_53:

(Start: 27 @47587 has 5 MA's), (Start: 65 @47395 has 226 MA's), (73, 47344), (116, 47212), (125, 47206), (135, 47164), (143, 47125), (148, 47095), (156, 47032), (167, 46978), (176, 46945), (207, 46858), (213, 46834), (220, 46771), (222, 46762), (225, 46747), (228, 46735), (239, 46684), (246,

46657), (249, 46654), (255, 46627), (260, 46594), (262, 46576), (264, 46564), (271, 46483), (275, 46450), (298, 46345), (299, 46342), (307, 46300),

Gene: Salete\_44 Start: 36172, Stop: 34982, Start Num: 92

Candidate Starts for Salete\_44:

(55, 36391), (66, 36340), (74, 36283), (Start: 92 @36172 has 5 MA's), (Start: 99 @36148 has 5 MA's), (114, 36109), (126, 36070), (136, 36025), (138, 36004), (154, 35899), (155, 35893), (163, 35848), (167, 35836), (199, 35779), (204, 35773), (212, 35728), (215, 35710), (225, 35638), (233, 35608), (240, 35572), (241, 35569), (244, 35560), (291, 35284), (293, 35275), (302, 35230), (306, 35206), (308, 35197), (316, 35164), (329, 35107), (334, 35089), (347, 34996), (348, 34993),

Gene: Samaymay\_51 Start: 45234, Stop: 43831, Start Num: 65

Candidate Starts for Samaymay\_51:

(10, 45612), (12, 45567), (18, 45525), (Start: 27 @45444 has 5 MA's), (Start: 34 @45399 has 34 MA's), (Start: 65 @45234 has 226 MA's), (Start: 67 @45231 has 65 MA's), (Start: 68 @45225 has 1 MA's), (73, 45183), (86, 45111), (93, 45090), (Start: 121 @44994 has 1 MA's), (135, 44943), (147, 44877), (148, 44874), (153, 44823), (167, 44757), (171, 44745), (181, 44709), (197, 44664), (205, 44634), (212, 44595), (217, 44556), (221, 44523), (222, 44520), (227, 44496), (236, 44463), (239, 44442), (249, 44412), (265, 44298), (269, 44256), (271, 44235), (275, 44202), (285, 44130), (286, 44124), (295, 44076), (304, 44031), (310, 44007), (314, 43992), (323, 43968),

Gene: SassyCat97\_50 Start: 44961, Stop: 43558, Start Num: 65

Candidate Starts for SassyCat97\_50:

(10, 45339), (12, 45294), (18, 45252), (Start: 27 @45171 has 5 MA's), (Start: 34 @45126 has 34 MA's), (Start: 65 @44961 has 226 MA's), (Start: 67 @44958 has 65 MA's), (Start: 68 @44952 has 1 MA's), (73, 44910), (86, 44838), (93, 44817), (Start: 121 @44721 has 1 MA's), (135, 44670), (147, 44604), (148, 44601), (153, 44550), (167, 44484), (171, 44472), (181, 44436), (197, 44391), (205, 44361), (212, 44322), (217, 44283), (221, 44250), (222, 44247), (224, 44241), (227, 44223), (236, 44190), (239, 44169), (249, 44139), (265, 44025), (269, 43983), (271, 43962), (275, 43929), (285, 43857), (286, 43851), (295, 43803), (304, 43758), (310, 43734), (314, 43719), (323, 43695),

Gene: Schadenfreude\_50 Start: 44797, Stop: 43397, Start Num: 67

Candidate Starts for Schadenfreude\_50:

(Start: 64 @44800 has 26 MA's), (Start: 67 @44797 has 65 MA's), (Start: 68 @44791 has 1 MA's), (73, 44749), (86, 44677), (93, 44656), (Start: 121 @44560 has 1 MA's), (135, 44509), (147, 44443), (148, 44440), (153, 44389), (167, 44323), (171, 44311), (181, 44275), (197, 44230), (205, 44200), (212, 44161), (217, 44122), (221, 44089), (222, 44086), (224, 44080), (227, 44062), (236, 44029), (239, 44008), (249, 43978), (269, 43822), (271, 43801), (275, 43768), (285, 43696), (286, 43690), (295, 43642), (304, 43597), (310, 43573), (314, 43558), (323, 43534),

Gene: Schueller\_51 Start: 44959, Stop: 43556, Start Num: 64

Candidate Starts for Schueller\_51:

(Start: 34 @45121 has 34 MA's), (Start: 64 @44959 has 26 MA's), (Start: 67 @44956 has 65 MA's), (73, 44908), (86, 44836), (93, 44815), (Start: 121 @44719 has 1 MA's), (135, 44668), (147, 44602), (148, 44599), (153, 44548), (167, 44482), (171, 44470), (181, 44434), (197, 44389), (205, 44359), (212, 44320), (217, 44281), (221, 44248), (222, 44245), (224, 44239), (227, 44221), (236, 44188), (239, 44167), (249, 44137), (265, 44023), (269, 43981), (271, 43960), (275, 43927), (285, 43855), (286, 43849), (295, 43801), (304, 43756), (310, 43732), (314, 43717), (323, 43693),

Gene: Scoot17C\_52 Start: 45377, Stop: 43974, Start Num: 65

Candidate Starts for Scoot17C\_52:

(10, 45755), (12, 45710), (18, 45668), (Start: 27 @45587 has 5 MA's), (Start: 34 @45542 has 34 MA's), (Start: 65 @45377 has 226 MA's), (Start: 67 @45374 has 65 MA's), (Start: 68 @45368 has 1

MA's), (73, 45326), (86, 45254), (93, 45233), (Start: 121 @45137 has 1 MA's), (135, 45086), (147, 45020), (148, 45017), (153, 44966), (167, 44900), (171, 44888), (181, 44852), (197, 44807), (205, 44777), (212, 44738), (217, 44699), (221, 44666), (222, 44663), (227, 44639), (236, 44606), (239, 44585), (249, 44555), (265, 44441), (269, 44399), (271, 44378), (275, 44345), (285, 44273), (286, 44267), (295, 44219), (304, 44174), (310, 44150), (314, 44135), (323, 44111),

Gene: Scrick\_51 Start: 44970, Stop: 43567, Start Num: 65

Candidate Starts for Scrick\_51:

(10, 45348), (12, 45303), (18, 45261), (Start: 27 @45180 has 5 MA's), (Start: 34 @45135 has 34 MA's), (Start: 65 @44970 has 226 MA's), (Start: 67 @44967 has 65 MA's), (Start: 68 @44961 has 1 MA's), (73, 44919), (86, 44847), (93, 44826), (Start: 121 @44730 has 1 MA's), (135, 44679), (147, 44613), (148, 44610), (153, 44559), (167, 44493), (171, 44481), (181, 44445), (197, 44400), (205, 44370), (212, 44331), (217, 44292), (221, 44259), (222, 44256), (227, 44232), (236, 44199), (239, 44178), (249, 44148), (265, 44034), (269, 43992), (271, 43971), (275, 43938), (285, 43866), (286, 43860), (295, 43812), (304, 43767), (310, 43743), (314, 43728), (323, 43704),

Gene: Selr12\_53 Start: 44973, Stop: 43570, Start Num: 65

Candidate Starts for Selr12\_53:

(10, 45351), (12, 45306), (18, 45264), (Start: 27 @45183 has 5 MA's), (Start: 34 @45138 has 34 MA's), (Start: 65 @44973 has 226 MA's), (Start: 67 @44970 has 65 MA's), (Start: 68 @44964 has 1 MA's), (73, 44922), (86, 44850), (93, 44829), (Start: 121 @44733 has 1 MA's), (135, 44682), (147, 44616), (148, 44613), (153, 44562), (167, 44496), (171, 44484), (181, 44448), (197, 44403), (205, 44373), (212, 44334), (217, 44295), (221, 44262), (222, 44259), (227, 44235), (236, 44202), (239, 44181), (249, 44151), (265, 44037), (269, 43995), (271, 43974), (275, 43941), (285, 43869), (286, 43863), (295, 43815), (304, 43770), (310, 43746), (314, 43731), (323, 43707),

Gene: Serendipitous\_50 Start: 45974, Stop: 44589, Start Num: 65

Candidate Starts for Serendipitous\_50:

(Start: 65 @45974 has 226 MA's), (Start: 70 @45956 has 2 MA's), (Start: 121 @45737 has 1 MA's), (130, 45707), (158, 45542), (169, 45500), (174, 45482), (179, 45467), (200, 45416), (209, 45365), (222, 45278), (225, 45263), (227, 45254), (241, 45194), (249, 45170), (251, 45167), (267, 45035), (271, 45002), (275, 44969), (277, 44951), (285, 44897), (293, 44852), (298, 44825), (319, 44744), (338, 44663),

Gene: Serendipity\_51 Start: 45258, Stop: 43855, Start Num: 65

Candidate Starts for Serendipity\_51:

(10, 45636), (12, 45591), (18, 45549), (Start: 27 @45468 has 5 MA's), (Start: 34 @45423 has 34 MA's), (Start: 65 @45258 has 226 MA's), (Start: 67 @45255 has 65 MA's), (Start: 68 @45249 has 1 MA's), (73, 45207), (86, 45135), (93, 45114), (Start: 121 @45018 has 1 MA's), (135, 44967), (147, 44901), (148, 44898), (153, 44847), (167, 44781), (171, 44769), (181, 44733), (197, 44688), (205, 44658), (212, 44619), (217, 44580), (221, 44547), (222, 44544), (227, 44520), (236, 44487), (239, 44466), (249, 44436), (265, 44322), (269, 44280), (271, 44259), (275, 44226), (285, 44154), (286, 44148), (295, 44100), (304, 44055), (310, 44031), (314, 44016), (323, 43992),

Gene: Serpentine\_0051 Start: 45257, Stop: 43854, Start Num: 65

Candidate Starts for Serpentine\_0051:

(Start: 34 @45422 has 34 MA's), (Start: 65 @45257 has 226 MA's), (Start: 67 @45254 has 65 MA's), (Start: 68 @45248 has 1 MA's), (73, 45206), (86, 45134), (93, 45113), (Start: 121 @45017 has 1 MA's), (135, 44966), (147, 44900), (148, 44897), (151, 44873), (153, 44846), (167, 44780), (171, 44768), (181, 44732), (197, 44687), (205, 44657), (212, 44618), (217, 44579), (221, 44546), (222, 44543), (227, 44519), (236, 44486), (239, 44465), (249, 44435), (265, 44321), (269, 44279), (271, 44258), (275, 44225), (285, 44153), (286, 44147), (295, 44099), (304, 44054), (310, 44030), (314, 44015), (323, 43991),

Gene: Shatter\_44 Start: 37982, Stop: 36669, Start Num: 37

Candidate Starts for Shatter\_44:

(Start: 36 @37985 has 1 MA's), (Start: 37 @37982 has 3 MA's), (Start: 121 @37823 has 1 MA's), (124, 37817), (135, 37766), (195, 37511), (202, 37490), (210, 37445), (213, 37433), (236, 37304), (241, 37277), (249, 37253), (256, 37223), (257, 37205), (260, 37193), (264, 37163), (266, 37130), (271, 37085), (275, 37052), (279, 37019), (283, 36992), (292, 36947), (293, 36941), (298, 36914), (299, 36911), (310, 36863), (346, 36701),

Gene: Sheila\_51 Start: 45283, Stop: 43880, Start Num: 65

Candidate Starts for Sheila\_51:

(10, 45661), (12, 45616), (18, 45574), (Start: 27 @45493 has 5 MA's), (Start: 34 @45448 has 34 MA's), (Start: 65 @45283 has 226 MA's), (Start: 67 @45280 has 65 MA's), (Start: 68 @45274 has 1 MA's), (73, 45232), (86, 45160), (93, 45139), (Start: 121 @45043 has 1 MA's), (135, 44992), (147, 44926), (148, 44923), (153, 44872), (167, 44806), (171, 44794), (181, 44758), (197, 44713), (205, 44683), (212, 44644), (217, 44605), (221, 44572), (222, 44569), (227, 44545), (236, 44512), (239, 44491), (249, 44461), (265, 44347), (269, 44305), (271, 44284), (275, 44251), (285, 44179), (286, 44173), (295, 44125), (304, 44080), (310, 44056), (314, 44041), (323, 44017),

Gene: ShiVal\_51 Start: 45241, Stop: 43838, Start Num: 65

Candidate Starts for ShiVal\_51:

(10, 45619), (12, 45574), (18, 45532), (Start: 27 @45451 has 5 MA's), (Start: 34 @45406 has 34 MA's), (Start: 65 @45241 has 226 MA's), (Start: 67 @45238 has 65 MA's), (Start: 68 @45232 has 1 MA's), (73, 45190), (86, 45118), (93, 45097), (Start: 121 @45001 has 1 MA's), (135, 44950), (147, 44884), (148, 44881), (153, 44830), (167, 44764), (171, 44752), (181, 44716), (197, 44671), (205, 44641), (212, 44602), (217, 44563), (221, 44530), (222, 44527), (227, 44503), (236, 44470), (239, 44449), (249, 44419), (265, 44305), (269, 44263), (271, 44242), (275, 44209), (285, 44137), (286, 44131), (295, 44083), (304, 44038), (310, 44014), (314, 43999), (323, 43975),

Gene: Sigman\_52 Start: 45368, Stop: 43965, Start Num: 65

Candidate Starts for Sigman\_52:

(10, 45746), (12, 45701), (18, 45659), (Start: 27 @45578 has 5 MA's), (Start: 34 @45533 has 34 MA's), (Start: 65 @45368 has 226 MA's), (Start: 67 @45365 has 65 MA's), (Start: 68 @45359 has 1 MA's), (73, 45317), (86, 45245), (93, 45224), (Start: 121 @45128 has 1 MA's), (135, 45077), (147, 45011), (148, 45008), (153, 44957), (167, 44891), (171, 44879), (181, 44843), (197, 44798), (205, 44768), (212, 44729), (217, 44690), (221, 44657), (222, 44654), (227, 44630), (236, 44597), (239, 44576), (249, 44546), (265, 44432), (269, 44390), (271, 44369), (275, 44336), (285, 44264), (286, 44258), (295, 44210), (304, 44165), (310, 44141), (314, 44126), (323, 44102),

Gene: Simielle\_50 Start: 44927, Stop: 43524, Start Num: 65

Candidate Starts for Simielle\_50:

(10, 45305), (12, 45260), (18, 45218), (Start: 27 @45137 has 5 MA's), (Start: 34 @45092 has 34 MA's), (Start: 65 @44927 has 226 MA's), (Start: 67 @44924 has 65 MA's), (Start: 68 @44918 has 1 MA's), (73, 44876), (86, 44804), (93, 44783), (Start: 121 @44687 has 1 MA's), (135, 44636), (147, 44570), (148, 44567), (153, 44516), (167, 44450), (171, 44438), (181, 44402), (197, 44357), (205, 44327), (212, 44288), (217, 44249), (221, 44216), (222, 44213), (227, 44189), (236, 44156), (239, 44135), (249, 44105), (265, 43991), (269, 43949), (271, 43928), (275, 43895), (285, 43823), (286, 43817), (295, 43769), (304, 43724), (310, 43700), (314, 43685), (323, 43661),

Gene: SirJeffery\_50 Start: 46127, Stop: 44763, Start Num: 70

Candidate Starts for SirJeffery\_50:

(Start: 34 @46295 has 34 MA's), (Start: 65 @46145 has 226 MA's), (Start: 70 @46127 has 2 MA's), (93, 45998), (Start: 121 @45911 has 1 MA's), (130, 45881), (158, 45716), (169, 45674), (174, 45656),



(179, 45641), (200, 45590), (209, 45539), (222, 45452), (225, 45437), (227, 45428), (238, 45377), (241, 45368), (249, 45344), (251, 45341), (267, 45209), (271, 45176), (275, 45143), (277, 45125), (285, 45071), (293, 45026), (298, 44999), (319, 44918), (323, 44900), (338, 44837),

Gene: Sisko\_44 Start: 38755, Stop: 37490, Start Num: 40

Candidate Starts for Sisko\_44:

(Start: 40 @38755 has 6 MA's), (44, 38737), (50, 38716), (Start: 121 @38629 has 1 MA's), (124, 38623), (129, 38602), (135, 38572), (196, 38314), (202, 38296), (213, 38239), (222, 38167), (225, 38152), (227, 38143), (232, 38125), (236, 38110), (241, 38083), (249, 38059), (260, 37999), (267, 37924), (271, 37891), (275, 37858), (276, 37849), (279, 37825), (282, 37813), (293, 37747), (298, 37720), (301, 37708), (330, 37600), (331, 37597), (338, 37564),

Gene: Skippy\_51 Start: 45228, Stop: 43825, Start Num: 65

Candidate Starts for Skippy\_51:

(Start: 34 @45393 has 34 MA's), (Start: 65 @45228 has 226 MA's), (Start: 67 @45225 has 65 MA's), (Start: 68 @45219 has 1 MA's), (73, 45177), (86, 45105), (93, 45084), (Start: 121 @44988 has 1 MA's), (135, 44937), (147, 44871), (148, 44868), (153, 44817), (167, 44751), (171, 44739), (181, 44703), (197, 44658), (205, 44628), (212, 44589), (217, 44550), (221, 44517), (222, 44514), (227, 44490), (236, 44457), (239, 44436), (249, 44406), (265, 44292), (269, 44250), (271, 44229), (275, 44196), (285, 44124), (286, 44118), (295, 44070), (304, 44025), (310, 44001), (314, 43986), (323, 43962),

Gene: Slatt\_51 Start: 45254, Stop: 43851, Start Num: 65

Candidate Starts for Slatt\_51:

(10, 45632), (12, 45587), (18, 45545), (Start: 27 @45464 has 5 MA's), (Start: 34 @45419 has 34 MA's), (Start: 65 @45254 has 226 MA's), (Start: 67 @45251 has 65 MA's), (Start: 68 @45245 has 1 MA's), (73, 45203), (86, 45131), (93, 45110), (Start: 121 @45014 has 1 MA's), (135, 44963), (147, 44897), (148, 44894), (153, 44843), (167, 44777), (171, 44765), (181, 44729), (197, 44684), (205, 44654), (212, 44615), (217, 44576), (221, 44543), (222, 44540), (227, 44516), (236, 44483), (239, 44462), (249, 44432), (265, 44318), (269, 44276), (271, 44255), (275, 44222), (285, 44150), (286, 44144), (295, 44096), (304, 44051), (310, 44027), (314, 44012), (323, 43988),

Gene: SlippinJimmy\_49 Start: 45653, Stop: 44031, Start Num: 33

Candidate Starts for SlippinJimmy\_49:

(16, 45770), (20, 45764), (21, 45749), (Start: 33 @45653 has 9 MA's), (Start: 34 @45644 has 34 MA's), (51, 45548), (Start: 70 @45470 has 2 MA's), (87, 45335), (Start: 121 @45176 has 1 MA's), (127, 45161), (129, 45149), (135, 45119), (144, 45077), (153, 44999), (188, 44867), (195, 44834), (197, 44825), (216, 44732), (222, 44684), (225, 44669), (227, 44660), (236, 44627), (241, 44600), (249, 44576), (264, 44486), (275, 44375), (283, 44342), (287, 44324), (292, 44303), (298, 44270),

Gene: Soile\_51 Start: 44957, Stop: 43554, Start Num: 65

Candidate Starts for Soile\_51:

(Start: 34 @45122 has 34 MA's), (Start: 65 @44957 has 226 MA's), (Start: 67 @44954 has 65 MA's), (Start: 68 @44948 has 1 MA's), (73, 44906), (86, 44834), (93, 44813), (Start: 121 @44717 has 1 MA's), (135, 44666), (147, 44600), (148, 44597), (151, 44573), (153, 44546), (167, 44480), (171, 44468), (181, 44432), (197, 44387), (205, 44357), (212, 44318), (217, 44279), (221, 44246), (222, 44243), (227, 44219), (236, 44186), (239, 44165), (249, 44135), (265, 44021), (269, 43979), (271, 43958), (275, 43925), (285, 43853), (286, 43847), (295, 43799), (304, 43754), (310, 43730), (314, 43715), (323, 43691),

Gene: Solosis\_50 Start: 44955, Stop: 43552, Start Num: 65

Candidate Starts for Solosis\_50:

(10, 45333), (12, 45288), (18, 45246), (Start: 27 @45165 has 5 MA's), (Start: 34 @45120 has 34 MA's), (Start: 65 @44955 has 226 MA's), (Start: 67 @44952 has 65 MA's), (Start: 68 @44946 has 1 MA's), (73, 44904), (86, 44832), (93, 44811), (Start: 121 @44715 has 1 MA's), (135, 44664), (147, 44598), (148, 44595), (153, 44544), (167, 44478), (171, 44466), (181, 44430), (197, 44385), (205, 44355), (212, 44316), (217, 44277), (221, 44244), (222, 44241), (227, 44217), (236, 44184), (239, 44163), (249, 44133), (265, 44019), (269, 43977), (271, 43956), (275, 43923), (285, 43851), (286, 43845), (295, 43797), (304, 43752), (310, 43728), (314, 43713), (323, 43689),

Gene: Sophia\_50 Start: 44949, Stop: 43546, Start Num: 65

Candidate Starts for Sophia\_50:

(10, 45327), (12, 45282), (18, 45240), (Start: 27 @45159 has 5 MA's), (Start: 34 @45114 has 34 MA's), (Start: 65 @44949 has 226 MA's), (Start: 67 @44946 has 65 MA's), (Start: 68 @44940 has 1 MA's), (73, 44898), (86, 44826), (93, 44805), (Start: 121 @44709 has 1 MA's), (135, 44658), (147, 44592), (148, 44589), (151, 44565), (153, 44538), (167, 44472), (171, 44460), (181, 44424), (197, 44379), (205, 44349), (212, 44310), (217, 44271), (221, 44238), (222, 44235), (227, 44211), (236, 44178), (239, 44157), (249, 44127), (265, 44013), (269, 43971), (271, 43950), (275, 43917), (285, 43845), (286, 43839), (295, 43791), (304, 43746), (310, 43722), (314, 43707), (323, 43683),

Gene: Soto\_51 Start: 45255, Stop: 43852, Start Num: 65

Candidate Starts for Soto\_51:

(12, 45588), (18, 45546), (Start: 27 @45465 has 5 MA's), (Start: 34 @45420 has 34 MA's), (Start: 65 @45255 has 226 MA's), (Start: 67 @45252 has 65 MA's), (Start: 68 @45246 has 1 MA's), (73, 45204), (86, 45132), (93, 45111), (Start: 121 @45015 has 1 MA's), (135, 44964), (147, 44898), (148, 44895), (153, 44844), (167, 44778), (171, 44766), (181, 44730), (197, 44685), (205, 44655), (212, 44616), (217, 44577), (221, 44544), (222, 44541), (227, 44517), (236, 44484), (239, 44463), (249, 44433), (265, 44319), (269, 44277), (271, 44256), (275, 44223), (285, 44151), (286, 44145), (295, 44097), (304, 44052), (310, 44028), (314, 44013), (323, 43989),

Gene: Sour\_49 Start: 42596, Stop: 41325, Start Num: 40

Candidate Starts for Sour\_49:

(Start: 40 @42596 has 6 MA's), (50, 42554), (Start: 121 @42464 has 1 MA's), (124, 42458), (129, 42437), (132, 42428), (135, 42407), (172, 42209), (175, 42194), (195, 42152), (196, 42149), (202, 42131), (213, 42074), (225, 41987), (229, 41972), (231, 41963), (236, 41945), (241, 41918), (249, 41894), (256, 41864), (264, 41804), (266, 41771), (271, 41726), (275, 41693), (276, 41684), (279, 41660), (283, 41633), (292, 41588), (293, 41582), (298, 41555), (299, 41552), (310, 41504), (345, 41354),

Gene: Spartan300\_51 Start: 45240, Stop: 43837, Start Num: 65

Candidate Starts for Spartan300\_51:

(10, 45618), (12, 45573), (18, 45531), (Start: 27 @45450 has 5 MA's), (Start: 34 @45405 has 34 MA's), (Start: 65 @45240 has 226 MA's), (Start: 67 @45237 has 65 MA's), (Start: 68 @45231 has 1 MA's), (73, 45189), (86, 45117), (93, 45096), (Start: 121 @45000 has 1 MA's), (135, 44949), (147, 44883), (148, 44880), (153, 44829), (167, 44763), (171, 44751), (181, 44715), (197, 44670), (205, 44640), (212, 44601), (217, 44562), (221, 44529), (222, 44526), (227, 44502), (236, 44469), (239, 44448), (249, 44418), (265, 44304), (269, 44262), (271, 44241), (275, 44208), (285, 44136), (286, 44130), (295, 44082), (304, 44037), (310, 44013), (314, 43998), (323, 43974),

Gene: Squid\_51 Start: 44961, Stop: 43558, Start Num: 65

Candidate Starts for Squid\_51:

(10, 45339), (12, 45294), (18, 45252), (Start: 27 @45171 has 5 MA's), (Start: 34 @45126 has 34 MA's), (Start: 65 @44961 has 226 MA's), (Start: 67 @44958 has 65 MA's), (Start: 68 @44952 has 1 MA's), (73, 44910), (86, 44838), (93, 44817), (Start: 121 @44721 has 1 MA's), (135, 44670), (147, 44604), (148, 44601), (153, 44550), (167, 44484), (171, 44472), (181, 44436), (197, 44391), (205,

44361), (212, 44322), (217, 44283), (221, 44250), (222, 44247), (224, 44241), (227, 44223), (236, 44190), (239, 44169), (249, 44139), (265, 44025), (269, 43983), (271, 43962), (275, 43929), (285, 43857), (286, 43851), (295, 43803), (304, 43758), (310, 43734), (314, 43719), (323, 43695),

Gene: Squiggle\_51 Start: 44964, Stop: 43561, Start Num: 65

Candidate Starts for Squiggle\_51:

(Start: 34 @45129 has 34 MA's), (Start: 65 @44964 has 226 MA's), (Start: 67 @44961 has 65 MA's), (Start: 68 @44955 has 1 MA's), (73, 44913), (86, 44841), (93, 44820), (Start: 121 @44724 has 1 MA's), (135, 44673), (147, 44607), (148, 44604), (151, 44580), (153, 44553), (167, 44487), (171, 44475), (181, 44439), (197, 44394), (205, 44364), (212, 44325), (217, 44286), (221, 44253), (222, 44250), (227, 44226), (236, 44193), (239, 44172), (249, 44142), (265, 44028), (269, 43986), (271, 43965), (275, 43932), (285, 43860), (286, 43854), (295, 43806), (304, 43761), (310, 43737), (314, 43722), (323, 43698),

Gene: StAugustine\_68 Start: 53628, Stop: 52423, Start Num: 118

Candidate Starts for StAugustine\_68:

(Start: 118 @53628 has 5 MA's), (123, 53619), (160, 53418), (164, 53397), (177, 53364), (197, 53307), (209, 53250), (210, 53247), (222, 53163), (233, 53118), (241, 53079), (262, 52905), (264, 52893), (271, 52809), (275, 52776), (285, 52743), (300, 52665), (301, 52659), (319, 52599), (324, 52578),

Gene: Stinger\_45 Start: 44262, Stop: 42913, Start Num: 64

Candidate Starts for Stinger\_45:

(Start: 64 @44262 has 26 MA's), (Start: 65 @44259 has 226 MA's), (Start: 68 @44250 has 1 MA's), (69, 44244), (116, 44046), (129, 44004), (131, 43998), (134, 43986), (135, 43974), (168, 43785), (173, 43770), (176, 43755), (178, 43752), (203, 43686), (206, 43662), (207, 43653), (213, 43629), (222, 43557), (225, 43542), (227, 43533), (231, 43518), (236, 43500), (237, 43497), (239, 43479), (249, 43449), (255, 43422), (262, 43371), (264, 43359), (267, 43314), (268, 43308), (269, 43299), (275, 43245), (286, 43206), (298, 43140), (299, 43137), (319, 43068), (323, 43050),

Gene: StinkyVeggy\_51 Start: 46290, Stop: 44905, Start Num: 65

Candidate Starts for StinkyVeggy\_51:

(Start: 34 @46440 has 34 MA's), (Start: 65 @46290 has 226 MA's), (Start: 70 @46272 has 2 MA's), (101, 46116), (Start: 121 @46053 has 1 MA's), (130, 46023), (158, 45858), (169, 45816), (174, 45798), (179, 45783), (200, 45732), (209, 45681), (222, 45594), (225, 45579), (227, 45570), (241, 45510), (249, 45486), (251, 45483), (267, 45351), (271, 45318), (275, 45285), (277, 45267), (285, 45213), (293, 45168), (298, 45141), (319, 45060), (328, 45021), (338, 44979),

Gene: Struggle\_50 Start: 44796, Stop: 43393, Start Num: 64

Candidate Starts for Struggle\_50:

(Start: 34 @44958 has 34 MA's), (Start: 64 @44796 has 26 MA's), (Start: 67 @44793 has 65 MA's), (73, 44745), (86, 44673), (93, 44652), (Start: 121 @44556 has 1 MA's), (135, 44505), (147, 44439), (148, 44436), (151, 44412), (153, 44385), (167, 44319), (171, 44307), (181, 44271), (197, 44226), (205, 44196), (212, 44157), (217, 44118), (221, 44085), (222, 44082), (224, 44076), (227, 44058), (236, 44025), (239, 44004), (249, 43974), (265, 43860), (269, 43818), (271, 43797), (275, 43764), (285, 43692), (286, 43686), (295, 43638), (304, 43593), (310, 43569), (314, 43554), (323, 43530),

Gene: Suffolk\_51 Start: 45242, Stop: 43842, Start Num: 67

Candidate Starts for Suffolk\_51:

(Start: 34 @45410 has 34 MA's), (Start: 65 @45245 has 226 MA's), (Start: 67 @45242 has 65 MA's), (Start: 68 @45236 has 1 MA's), (73, 45194), (86, 45122), (93, 45101), (Start: 121 @45005 has 1 MA's), (135, 44954), (147, 44888), (148, 44885), (153, 44834), (167, 44768), (171, 44756), (181, 44720), (197, 44675), (205, 44645), (212, 44606), (217, 44567), (221, 44534), (222, 44531), (227,

44507), (236, 44474), (239, 44453), (249, 44423), (265, 44309), (269, 44267), (271, 44246), (275, 44213), (285, 44141), (286, 44135), (295, 44087), (304, 44042), (310, 44018), (314, 44003), (323, 43979),

Gene: Suigeneris\_51 Start: 46147, Stop: 44765, Start Num: 65

Candidate Starts for Suigeneris\_51:

(25, 46372), (Start: 65 @46147 has 226 MA's), (Start: 70 @46129 has 2 MA's), (Start: 121 @45913 has 1 MA's), (130, 45883), (158, 45718), (169, 45676), (174, 45658), (179, 45643), (200, 45592), (222, 45454), (225, 45439), (227, 45430), (238, 45379), (241, 45370), (249, 45346), (251, 45343), (267, 45211), (271, 45178), (275, 45145), (277, 45127), (285, 45073), (293, 45028), (298, 45001), (319, 44920), (323, 44902), (338, 44839),

Gene: Surely\_51 Start: 45251, Stop: 43848, Start Num: 65

Candidate Starts for Surely\_51:

(Start: 34 @45416 has 34 MA's), (Start: 65 @45251 has 226 MA's), (Start: 67 @45248 has 65 MA's), (Start: 68 @45242 has 1 MA's), (73, 45200), (86, 45128), (93, 45107), (Start: 121 @45011 has 1 MA's), (135, 44960), (147, 44894), (148, 44891), (151, 44867), (153, 44840), (167, 44774), (171, 44762), (181, 44726), (197, 44681), (205, 44651), (212, 44612), (217, 44573), (221, 44540), (222, 44537), (227, 44513), (236, 44480), (239, 44459), (249, 44429), (265, 44315), (269, 44273), (271, 44252), (275, 44219), (285, 44147), (286, 44141), (295, 44093), (304, 44048), (310, 44024), (314, 44009), (323, 43985),

Gene: Swiphy\_53 Start: 45243, Stop: 43843, Start Num: 67

Candidate Starts for Swiphy\_53:

(Start: 34 @45411 has 34 MA's), (Start: 65 @45246 has 226 MA's), (Start: 67 @45243 has 65 MA's), (Start: 68 @45237 has 1 MA's), (73, 45195), (86, 45123), (93, 45102), (Start: 121 @45006 has 1 MA's), (135, 44955), (147, 44889), (148, 44886), (151, 44862), (153, 44835), (167, 44769), (171, 44757), (181, 44721), (197, 44676), (205, 44646), (212, 44607), (217, 44568), (221, 44535), (222, 44532), (227, 44508), (236, 44475), (239, 44454), (249, 44424), (265, 44310), (269, 44268), (271, 44247), (275, 44214), (285, 44142), (286, 44136), (295, 44088), (304, 44043), (310, 44019), (314, 44004), (323, 43980),

Gene: Swish\_52 Start: 45390, Stop: 43987, Start Num: 65

Candidate Starts for Swish\_52:

(10, 45768), (12, 45723), (18, 45681), (Start: 27 @45600 has 5 MA's), (Start: 34 @45555 has 34 MA's), (Start: 65 @45390 has 226 MA's), (Start: 67 @45387 has 65 MA's), (Start: 68 @45381 has 1 MA's), (73, 45339), (86, 45267), (93, 45246), (Start: 121 @45150 has 1 MA's), (135, 45099), (147, 45033), (148, 45030), (153, 44979), (167, 44913), (171, 44901), (181, 44865), (197, 44820), (205, 44790), (212, 44751), (217, 44712), (221, 44679), (222, 44676), (227, 44652), (236, 44619), (239, 44598), (249, 44568), (265, 44454), (269, 44412), (271, 44391), (275, 44358), (285, 44286), (286, 44280), (295, 44232), (304, 44187), (310, 44163), (314, 44148), (323, 44124),

Gene: SynergyX\_49 Start: 44878, Stop: 43265, Start Num: 34

Candidate Starts for SynergyX\_49:

(16, 45004), (20, 44998), (21, 44983), (Start: 33 @44887 has 9 MA's), (Start: 34 @44878 has 34 MA's), (51, 44782), (Start: 70 @44704 has 2 MA's), (87, 44569), (Start: 121 @44410 has 1 MA's), (127, 44395), (129, 44383), (135, 44353), (144, 44311), (153, 44233), (188, 44101), (195, 44068), (197, 44059), (216, 43966), (222, 43918), (225, 43903), (227, 43894), (236, 43861), (241, 43834), (249, 43810), (264, 43720), (275, 43609), (283, 43576), (284, 43573), (287, 43558), (292, 43537), (298, 43504),

Gene: TA17A\_50 Start: 44847, Stop: 43480, Start Num: 67

Candidate Starts for TA17A\_50:

(Start: 67 @44847 has 65 MA's), (75, 44784), (77, 44769), (108, 44658), (120, 44607), (134, 44559), (142, 44511), (164, 44370), (167, 44361), (190, 44316), (192, 44310), (193, 44304), (197, 44292), (217, 44187), (221, 44154), (225, 44136), (227, 44127), (236, 44094), (241, 44067), (249, 44043), (258, 43989), (266, 43914), (271, 43869), (275, 43836), (282, 43815), (283, 43809), (289, 43776), (291, 43767), (293, 43758), (335, 43596), (338, 43578), (346, 43521),

Gene: TP1604\_44 Start: 36178, Stop: 34988, Start Num: 92

Candidate Starts for TP1604\_44:

(55, 36397), (66, 36346), (74, 36289), (Start: 92 @36178 has 5 MA's), (Start: 99 @36154 has 5 MA's), (114, 36115), (126, 36076), (136, 36031), (138, 36010), (154, 35905), (155, 35899), (163, 35854), (167, 35842), (199, 35785), (204, 35779), (212, 35734), (215, 35716), (225, 35644), (233, 35614), (240, 35578), (241, 35575), (244, 35566), (291, 35290), (293, 35281), (302, 35236), (306, 35212), (308, 35203), (316, 35170), (329, 35113), (334, 35095), (347, 35002), (348, 34999),

Gene: TPA2\_57 Start: 44817, Stop: 43513, Start Num: 84

Candidate Starts for TPA2\_57:

(1, 46389), (2, 45999), (3, 45516), (84, 44817), (93, 44790), (107, 44730), (123, 44652), (143, 44565), (145, 44556), (152, 44496), (155, 44478), (167, 44421), (173, 44409), (186, 44367), (191, 44355), (197, 44337), (221, 44199), (225, 44181), (231, 44157), (247, 44088), (253, 44034), (257, 44010), (263, 43977), (267, 43917), (268, 43911), (275, 43851), (280, 43839), (288, 43797), (294, 43767), (300, 43740), (313, 43686), (340, 43569), (346, 43533), (349, 43521),

Gene: TallGrassMM\_51 Start: 44861, Stop: 43461, Start Num: 67

Candidate Starts for TallGrassMM\_51:

(10, 45242), (12, 45197), (18, 45155), (Start: 27 @45074 has 5 MA's), (Start: 34 @45029 has 34 MA's), (Start: 65 @44864 has 226 MA's), (Start: 67 @44861 has 65 MA's), (Start: 68 @44855 has 1 MA's), (73, 44813), (86, 44741), (93, 44720), (Start: 121 @44624 has 1 MA's), (135, 44573), (147, 44507), (148, 44504), (153, 44453), (167, 44387), (171, 44375), (181, 44339), (197, 44294), (205, 44264), (212, 44225), (217, 44186), (221, 44153), (222, 44150), (227, 44126), (236, 44093), (239, 44072), (249, 44042), (265, 43928), (269, 43886), (271, 43865), (275, 43832), (285, 43760), (286, 43754), (295, 43706), (304, 43661), (310, 43637), (314, 43622), (323, 43598),

Gene: Telesworld\_50 Start: 44943, Stop: 43540, Start Num: 65

Candidate Starts for Telesworld\_50:

(Start: 34 @45108 has 34 MA's), (Start: 65 @44943 has 226 MA's), (Start: 67 @44940 has 65 MA's), (Start: 68 @44934 has 1 MA's), (73, 44892), (86, 44820), (93, 44799), (Start: 121 @44703 has 1 MA's), (135, 44652), (147, 44586), (148, 44583), (153, 44532), (167, 44466), (171, 44454), (181, 44418), (197, 44373), (205, 44343), (212, 44304), (217, 44265), (221, 44232), (222, 44229), (227, 44205), (236, 44172), (239, 44151), (249, 44121), (265, 44007), (269, 43965), (271, 43944), (275, 43911), (285, 43839), (286, 43833), (295, 43785), (304, 43740), (310, 43716), (314, 43701), (323, 43677),

Gene: Thonko\_49 Start: 43281, Stop: 41938, Start Num: 65

Candidate Starts for Thonko\_49:

(24, 43518), (Start: 65 @43281 has 226 MA's), (95, 43110), (96, 43104), (Start: 121 @43020 has 1 MA's), (162, 42804), (167, 42789), (205, 42696), (213, 42654), (223, 42579), (225, 42567), (228, 42555), (237, 42522), (241, 42498), (249, 42474), (260, 42414), (262, 42396), (264, 42384), (267, 42339), (271, 42303), (275, 42270), (285, 42237), (297, 42168),

Gene: Thora\_51 Start: 45250, Stop: 43847, Start Num: 65

Candidate Starts for Thora\_51:

(Start: 34 @45415 has 34 MA's), (Start: 65 @45250 has 226 MA's), (Start: 67 @45247 has 65 MA's), (Start: 68 @45241 has 1 MA's), (73, 45199), (86, 45127), (93, 45106), (Start: 121 @45010 has 1

MA's), (135, 44959), (147, 44893), (148, 44890), (153, 44839), (167, 44773), (171, 44761), (181, 44725), (197, 44680), (205, 44650), (212, 44611), (217, 44572), (221, 44539), (222, 44536), (227, 44512), (236, 44479), (239, 44458), (249, 44428), (265, 44314), (269, 44272), (271, 44251), (275, 44218), (285, 44146), (286, 44140), (295, 44092), (304, 44047), (310, 44023), (314, 44008), (323, 43984),

Gene: ThreeOh3D2\_52 Start: 45383, Stop: 43980, Start Num: 65

Candidate Starts for ThreeOh3D2\_52:

(10, 45761), (12, 45716), (18, 45674), (Start: 27 @45593 has 5 MA's), (Start: 34 @45548 has 34 MA's), (Start: 65 @45383 has 226 MA's), (Start: 67 @45380 has 65 MA's), (Start: 68 @45374 has 1 MA's), (73, 45332), (86, 45260), (93, 45239), (Start: 121 @45143 has 1 MA's), (135, 45092), (147, 45026), (148, 45023), (153, 44972), (167, 44906), (171, 44894), (181, 44858), (197, 44813), (205, 44783), (212, 44744), (217, 44705), (221, 44672), (222, 44669), (227, 44645), (236, 44612), (239, 44591), (249, 44561), (265, 44447), (269, 44405), (271, 44384), (275, 44351), (285, 44279), (286, 44273), (295, 44225), (304, 44180), (310, 44156), (314, 44141), (323, 44117),

Gene: Thunderbird\_51 Start: 44951, Stop: 43548, Start Num: 64

Candidate Starts for Thunderbird\_51:

(Start: 34 @45113 has 34 MA's), (Start: 64 @44951 has 26 MA's), (Start: 67 @44948 has 65 MA's), (73, 44900), (86, 44828), (93, 44807), (Start: 121 @44711 has 1 MA's), (135, 44660), (147, 44594), (148, 44591), (151, 44567), (153, 44540), (167, 44474), (171, 44462), (181, 44426), (197, 44381), (205, 44351), (212, 44312), (217, 44273), (221, 44240), (222, 44237), (227, 44213), (236, 44180), (239, 44159), (249, 44129), (265, 44015), (269, 43973), (271, 43952), (275, 43919), (285, 43847), (286, 43841), (295, 43793), (304, 43748), (310, 43724), (314, 43709), (323, 43685),

Gene: Timmi\_50 Start: 44950, Stop: 43547, Start Num: 65

Candidate Starts for Timmi\_50:

(10, 45328), (12, 45283), (18, 45241), (Start: 27 @45160 has 5 MA's), (Start: 34 @45115 has 34 MA's), (Start: 65 @44950 has 226 MA's), (Start: 67 @44947 has 65 MA's), (Start: 68 @44941 has 1 MA's), (73, 44899), (86, 44827), (93, 44806), (Start: 121 @44710 has 1 MA's), (135, 44659), (147, 44593), (148, 44590), (153, 44539), (167, 44473), (171, 44461), (181, 44425), (197, 44380), (205, 44350), (212, 44311), (217, 44272), (221, 44239), (222, 44236), (227, 44212), (236, 44179), (239, 44158), (249, 44128), (265, 44014), (269, 43972), (271, 43951), (275, 43918), (285, 43846), (286, 43840), (295, 43792), (304, 43747), (310, 43723), (314, 43708), (323, 43684),

Gene: Tinciduntolum\_51 Start: 45009, Stop: 43642, Start Num: 67

Candidate Starts for Tinciduntolum\_51:

(Start: 67 @45009 has 65 MA's), (75, 44946), (77, 44931), (108, 44820), (120, 44769), (134, 44721), (142, 44673), (164, 44532), (167, 44523), (190, 44478), (192, 44472), (193, 44466), (197, 44454), (217, 44349), (221, 44316), (225, 44298), (227, 44289), (236, 44256), (241, 44229), (249, 44205), (253, 44178), (258, 44151), (266, 44076), (271, 44031), (275, 43998), (282, 43977), (283, 43971), (289, 43938), (291, 43929), (293, 43920), (335, 43758), (338, 43740), (346, 43683),

Gene: TomBombadil\_51 Start: 45235, Stop: 43832, Start Num: 65

Candidate Starts for TomBombadil\_51:

(10, 45613), (12, 45568), (18, 45526), (Start: 27 @45445 has 5 MA's), (Start: 34 @45400 has 34 MA's), (Start: 65 @45235 has 226 MA's), (Start: 67 @45232 has 65 MA's), (Start: 68 @45226 has 1 MA's), (73, 45184), (86, 45112), (93, 45091), (Start: 121 @44995 has 1 MA's), (135, 44944), (147, 44878), (148, 44875), (153, 44824), (167, 44758), (171, 44746), (181, 44710), (197, 44665), (205, 44635), (212, 44596), (217, 44557), (221, 44524), (222, 44521), (224, 44515), (227, 44497), (236, 44464), (239, 44443), (249, 44413), (265, 44299), (269, 44257), (271, 44236), (275, 44203), (285, 44131), (286, 44125), (295, 44077), (304, 44032), (310, 44008), (314, 43993), (323, 43969),

Gene: Tomlarah\_51 Start: 45238, Stop: 43835, Start Num: 65

Candidate Starts for Tomlarah\_51:

(10, 45616), (12, 45571), (18, 45529), (Start: 27 @45448 has 5 MA's), (Start: 34 @45403 has 34 MA's), (Start: 65 @45238 has 226 MA's), (Start: 67 @45235 has 65 MA's), (Start: 68 @45229 has 1 MA's), (73, 45187), (86, 45115), (93, 45094), (Start: 121 @44998 has 1 MA's), (135, 44947), (147, 44881), (148, 44878), (153, 44827), (167, 44761), (171, 44749), (181, 44713), (197, 44668), (205, 44638), (212, 44599), (217, 44560), (221, 44527), (222, 44524), (227, 44500), (236, 44467), (239, 44446), (249, 44416), (265, 44302), (269, 44260), (271, 44239), (275, 44206), (285, 44134), (286, 44128), (295, 44080), (304, 44035), (310, 44011), (314, 43996), (323, 43972),

Gene: Toni\_50 Start: 44942, Stop: 43539, Start Num: 65

Candidate Starts for Toni\_50:

(10, 45320), (12, 45275), (18, 45233), (Start: 27 @45152 has 5 MA's), (Start: 34 @45107 has 34 MA's), (Start: 65 @44942 has 226 MA's), (Start: 67 @44939 has 65 MA's), (Start: 68 @44933 has 1 MA's), (73, 44891), (86, 44819), (93, 44798), (Start: 121 @44702 has 1 MA's), (135, 44651), (147, 44585), (148, 44582), (153, 44531), (167, 44465), (171, 44453), (181, 44417), (197, 44372), (205, 44342), (212, 44303), (217, 44264), (221, 44231), (222, 44228), (227, 44204), (236, 44171), (239, 44150), (249, 44120), (265, 44006), (269, 43964), (271, 43943), (275, 43910), (285, 43838), (286, 43832), (295, 43784), (304, 43739), (310, 43715), (314, 43700), (323, 43676),

Gene: Tooj\_51 Start: 45317, Stop: 43914, Start Num: 65

Candidate Starts for Tooj\_51:

(10, 45695), (12, 45650), (18, 45608), (Start: 27 @45527 has 5 MA's), (Start: 34 @45482 has 34 MA's), (Start: 65 @45317 has 226 MA's), (Start: 67 @45314 has 65 MA's), (Start: 68 @45308 has 1 MA's), (73, 45266), (86, 45194), (93, 45173), (Start: 121 @45077 has 1 MA's), (135, 45026), (147, 44960), (148, 44957), (153, 44906), (167, 44840), (171, 44828), (181, 44792), (197, 44747), (205, 44717), (212, 44678), (217, 44639), (221, 44606), (222, 44603), (227, 44579), (236, 44546), (239, 44525), (249, 44495), (265, 44381), (269, 44339), (271, 44318), (275, 44285), (285, 44213), (286, 44207), (295, 44159), (304, 44114), (310, 44090), (314, 44075), (323, 44051),

Gene: Tres\_50 Start: 44860, Stop: 43493, Start Num: 67

Candidate Starts for Tres\_50:

(Start: 67 @44860 has 65 MA's), (75, 44797), (77, 44782), (108, 44671), (120, 44620), (134, 44572), (142, 44524), (164, 44383), (167, 44374), (190, 44329), (192, 44323), (193, 44317), (197, 44305), (217, 44200), (221, 44167), (225, 44149), (227, 44140), (236, 44107), (241, 44080), (249, 44056), (253, 44029), (258, 44002), (266, 43927), (271, 43882), (275, 43849), (282, 43828), (283, 43822), (289, 43789), (291, 43780), (293, 43771), (335, 43609), (338, 43591), (346, 43534),

Gene: Trine\_30 Start: 24580, Stop: 23426, Start Num: 110

Candidate Starts for Trine\_30:

(Start: 110 @24580 has 1 MA's), (Start: 111 @24574 has 1 MA's), (152, 24382), (207, 24229), (219, 24148), (222, 24133), (237, 24073), (242, 24046), (248, 24022), (256, 23986), (259, 23959), (275, 23818), (283, 23791), (284, 23788), (291, 23746), (304, 23683), (312, 23650), (337, 23521),

Gene: True\_50 Start: 44948, Stop: 43545, Start Num: 65

Candidate Starts for True\_50:

(10, 45326), (12, 45281), (18, 45239), (Start: 27 @45158 has 5 MA's), (Start: 34 @45113 has 34 MA's), (Start: 65 @44948 has 226 MA's), (Start: 67 @44945 has 65 MA's), (Start: 68 @44939 has 1 MA's), (73, 44897), (86, 44825), (93, 44804), (Start: 121 @44708 has 1 MA's), (135, 44657), (147, 44591), (148, 44588), (153, 44537), (167, 44471), (171, 44459), (181, 44423), (197, 44378), (205, 44348), (212, 44309), (217, 44270), (221, 44237), (222, 44234), (227, 44210), (236, 44177), (239, 44156), (249, 44126), (265, 44012), (269, 43970), (271, 43949), (275, 43916), (285, 43844), (286, 43838), (295, 43790), (304, 43745), (310, 43721), (314, 43706), (323, 43682),

Gene: Trypo\_52 Start: 45379, Stop: 43976, Start Num: 65

Candidate Starts for Trypo\_52:

(Start: 34 @45544 has 34 MA's), (Start: 65 @45379 has 226 MA's), (Start: 67 @45376 has 65 MA's), (Start: 68 @45370 has 1 MA's), (73, 45328), (86, 45256), (93, 45235), (Start: 121 @45139 has 1 MA's), (135, 45088), (147, 45022), (148, 45019), (153, 44968), (167, 44902), (171, 44890), (181, 44854), (197, 44809), (205, 44779), (212, 44740), (217, 44701), (221, 44668), (222, 44665), (224, 44659), (227, 44641), (236, 44608), (239, 44587), (249, 44557), (265, 44443), (269, 44401), (271, 44380), (275, 44347), (285, 44275), (286, 44269), (295, 44221), (304, 44176), (310, 44152), (314, 44137), (323, 44113),

Gene: Tydolla\_49 Start: 45612, Stop: 43999, Start Num: 34

Candidate Starts for Tydolla\_49:

(16, 45738), (20, 45732), (21, 45717), (Start: 33 @45621 has 9 MA's), (Start: 34 @45612 has 34 MA's), (51, 45516), (Start: 70 @45438 has 2 MA's), (87, 45303), (Start: 121 @45144 has 1 MA's), (127, 45129), (129, 45117), (135, 45087), (144, 45045), (153, 44967), (188, 44835), (195, 44802), (197, 44793), (216, 44700), (222, 44652), (225, 44637), (227, 44628), (236, 44595), (241, 44568), (249, 44544), (264, 44454), (275, 44343), (283, 44310), (284, 44307), (287, 44292), (292, 44271), (298, 44238),

Gene: TyrionL\_50 Start: 44804, Stop: 43401, Start Num: 65

Candidate Starts for TyrionL\_50:

(10, 45182), (12, 45137), (18, 45095), (Start: 27 @45014 has 5 MA's), (Start: 34 @44969 has 34 MA's), (Start: 65 @44804 has 226 MA's), (Start: 67 @44801 has 65 MA's), (Start: 68 @44795 has 1 MA's), (73, 44753), (86, 44681), (93, 44660), (Start: 121 @44564 has 1 MA's), (135, 44513), (147, 44447), (148, 44444), (153, 44393), (167, 44327), (171, 44315), (181, 44279), (197, 44234), (205, 44204), (212, 44165), (217, 44126), (221, 44093), (222, 44090), (224, 44084), (227, 44066), (236, 44033), (239, 44012), (249, 43982), (265, 43868), (269, 43826), (271, 43805), (275, 43772), (285, 43700), (286, 43694), (295, 43646), (304, 43601), (310, 43577), (314, 43562), (323, 43538),

Gene: UAch1\_51 Start: 45272, Stop: 43869, Start Num: 65

Candidate Starts for UAch1\_51:

(10, 45650), (12, 45605), (18, 45563), (Start: 27 @45482 has 5 MA's), (Start: 34 @45437 has 34 MA's), (Start: 65 @45272 has 226 MA's), (Start: 67 @45269 has 65 MA's), (Start: 68 @45263 has 1 MA's), (73, 45221), (86, 45149), (93, 45128), (Start: 121 @45032 has 1 MA's), (135, 44981), (147, 44915), (148, 44912), (151, 44888), (153, 44861), (167, 44795), (171, 44783), (181, 44747), (197, 44702), (205, 44672), (212, 44633), (217, 44594), (221, 44561), (222, 44558), (227, 44534), (236, 44501), (239, 44480), (249, 44450), (265, 44336), (269, 44294), (271, 44273), (275, 44240), (285, 44168), (286, 44162), (295, 44114), (304, 44069), (310, 44045), (314, 44030), (323, 44006),

Gene: UncleHowie\_51 Start: 44947, Stop: 43544, Start Num: 65

Candidate Starts for UncleHowie\_51:

(Start: 34 @45112 has 34 MA's), (Start: 65 @44947 has 226 MA's), (Start: 67 @44944 has 65 MA's), (Start: 68 @44938 has 1 MA's), (73, 44896), (86, 44824), (93, 44803), (Start: 121 @44707 has 1 MA's), (135, 44656), (147, 44590), (148, 44587), (151, 44563), (153, 44536), (167, 44470), (171, 44458), (181, 44422), (197, 44377), (205, 44347), (212, 44308), (217, 44269), (221, 44236), (222, 44233), (227, 44209), (236, 44176), (239, 44155), (249, 44125), (265, 44011), (269, 43969), (271, 43948), (275, 43915), (285, 43843), (286, 43837), (295, 43789), (304, 43744), (310, 43720), (314, 43705), (323, 43681),

Gene: Upyo\_30 Start: 25191, Stop: 24034, Start Num: 111

Candidate Starts for Upyo\_30:



(49, 25530), (52, 25512), (89, 25284), (Start: 111 @25191 has 1 MA's), (Start: 118 @25155 has 5 MA's), (134, 25110), (163, 24924), (207, 24834), (219, 24753), (222, 24738), (231, 24699), (237, 24678), (248, 24627), (256, 24591), (275, 24423), (283, 24396), (284, 24393), (286, 24384), (291, 24351), (304, 24288), (308, 24267), (337, 24123), (338, 24114), (340, 24093), (343, 24078),

Gene: Usavi\_51 Start: 45246, Stop: 43843, Start Num: 65

Candidate Starts for Usavi\_51:

(Start: 34 @45411 has 34 MA's), (Start: 65 @45246 has 226 MA's), (Start: 67 @45243 has 65 MA's), (Start: 68 @45237 has 1 MA's), (73, 45195), (86, 45123), (93, 45102), (Start: 121 @45006 has 1 MA's), (135, 44955), (147, 44889), (148, 44886), (151, 44862), (153, 44835), (167, 44769), (171, 44757), (181, 44721), (197, 44676), (205, 44646), (212, 44607), (217, 44568), (221, 44535), (222, 44532), (227, 44508), (236, 44475), (239, 44454), (249, 44424), (265, 44310), (269, 44268), (271, 44247), (275, 44214), (285, 44142), (286, 44136), (295, 44088), (304, 44043), (310, 44019), (314, 44004), (323, 43980),

Gene: Vaishali24\_50 Start: 44918, Stop: 43515, Start Num: 65

Candidate Starts for Vaishali24\_50:

(10, 45296), (12, 45251), (18, 45209), (Start: 27 @45128 has 5 MA's), (Start: 34 @45083 has 34 MA's), (Start: 65 @44918 has 226 MA's), (Start: 67 @44915 has 65 MA's), (Start: 68 @44909 has 1 MA's), (73, 44867), (86, 44795), (93, 44774), (Start: 121 @44678 has 1 MA's), (135, 44627), (147, 44561), (148, 44558), (153, 44507), (167, 44441), (171, 44429), (181, 44393), (197, 44348), (205, 44318), (212, 44279), (217, 44240), (221, 44207), (222, 44204), (227, 44180), (236, 44147), (239, 44126), (249, 44096), (265, 43982), (269, 43940), (271, 43919), (275, 43886), (285, 43814), (286, 43808), (295, 43760), (304, 43715), (310, 43691), (314, 43676), (323, 43652),

Gene: Valjean\_51 Start: 45240, Stop: 43840, Start Num: 67

Candidate Starts for Valjean\_51:

(Start: 34 @45408 has 34 MA's), (Start: 65 @45243 has 226 MA's), (Start: 67 @45240 has 65 MA's), (Start: 68 @45234 has 1 MA's), (73, 45192), (86, 45120), (93, 45099), (Start: 121 @45003 has 1 MA's), (135, 44952), (147, 44886), (148, 44883), (151, 44859), (153, 44832), (167, 44766), (171, 44754), (181, 44718), (197, 44673), (205, 44643), (212, 44604), (217, 44565), (221, 44532), (222, 44529), (227, 44505), (236, 44472), (239, 44451), (249, 44421), (265, 44307), (269, 44265), (271, 44244), (275, 44211), (285, 44139), (286, 44133), (295, 44085), (304, 44040), (310, 44016), (314, 44001), (323, 43977),

Gene: Vaticameos\_47 Start: 42929, Stop: 41526, Start Num: 65

Candidate Starts for Vaticameos\_47:

(10, 43307), (12, 43262), (18, 43220), (Start: 27 @43139 has 5 MA's), (Start: 34 @43094 has 34 MA's), (Start: 65 @42929 has 226 MA's), (Start: 67 @42926 has 65 MA's), (Start: 68 @42920 has 1 MA's), (73, 42878), (86, 42806), (93, 42785), (Start: 121 @42689 has 1 MA's), (135, 42638), (147, 42572), (148, 42569), (153, 42518), (167, 42452), (171, 42440), (181, 42404), (197, 42359), (205, 42329), (212, 42290), (217, 42251), (221, 42218), (222, 42215), (227, 42191), (236, 42158), (239, 42137), (249, 42107), (265, 41993), (269, 41951), (271, 41930), (275, 41897), (285, 41825), (286, 41819), (295, 41771), (304, 41726), (310, 41702), (314, 41687), (323, 41663),

Gene: Veritas\_50 Start: 44825, Stop: 43422, Start Num: 64

Candidate Starts for Veritas\_50:

(Start: 34 @44987 has 34 MA's), (Start: 64 @44825 has 26 MA's), (Start: 67 @44822 has 65 MA's), (73, 44774), (86, 44702), (93, 44681), (Start: 121 @44585 has 1 MA's), (135, 44534), (147, 44468), (148, 44465), (153, 44414), (167, 44348), (171, 44336), (181, 44300), (197, 44255), (205, 44225), (212, 44186), (217, 44147), (221, 44114), (222, 44111), (224, 44105), (227, 44087), (236, 44054), (239, 44033), (249, 44003), (265, 43889), (269, 43847), (271, 43826), (275, 43793), (285, 43721), (286, 43715), (295, 43667), (304, 43622), (310, 43598), (314, 43583), (323, 43559),

Gene: Vincenzo\_47 Start: 46277, Stop: 44940, Start Num: 67

Candidate Starts for Vincenzo\_47:

(Start: 67 @46277 has 65 MA's), (Start: 70 @46262 has 2 MA's), (116, 46067), (130, 46022), (135, 46001), (161, 45836), (167, 45815), (168, 45812), (173, 45797), (205, 45698), (207, 45680), (213, 45656), (222, 45584), (225, 45569), (231, 45545), (237, 45524), (239, 45506), (249, 45476), (255, 45449), (260, 45416), (262, 45398), (267, 45341), (271, 45305), (275, 45272), (286, 45233), (298, 45167), (299, 45164), (314, 45101), (319, 45095), (323, 45077),

Gene: VioletZ\_48 Start: 45803, Stop: 44463, Start Num: 65

Candidate Starts for VioletZ\_48:

(Start: 64 @45806 has 26 MA's), (Start: 65 @45803 has 226 MA's), (Start: 68 @45794 has 1 MA's), (69, 45788), (76, 45737), (116, 45590), (130, 45545), (135, 45524), (157, 45383), (161, 45359), (167, 45338), (168, 45335), (173, 45320), (176, 45305), (203, 45236), (205, 45221), (207, 45203), (213, 45179), (222, 45107), (227, 45083), (236, 45050), (237, 45047), (239, 45029), (249, 44999), (260, 44939), (262, 44921), (264, 44909), (267, 44864), (268, 44858), (269, 44849), (274, 44819), (275, 44795), (286, 44756), (294, 44711), (298, 44690), (299, 44687), (319, 44618), (323, 44600),

Gene: Virapocalypse\_51 Start: 45238, Stop: 43835, Start Num: 65

Candidate Starts for Virapocalypse\_51:

(10, 45616), (12, 45571), (18, 45529), (Start: 27 @45448 has 5 MA's), (Start: 34 @45403 has 34 MA's), (Start: 65 @45238 has 226 MA's), (Start: 67 @45235 has 65 MA's), (Start: 68 @45229 has 1 MA's), (73, 45187), (86, 45115), (93, 45094), (Start: 121 @44998 has 1 MA's), (135, 44947), (147, 44881), (148, 44878), (153, 44827), (167, 44761), (171, 44749), (181, 44713), (197, 44668), (205, 44638), (212, 44599), (217, 44560), (221, 44527), (222, 44524), (227, 44500), (236, 44467), (239, 44446), (249, 44416), (265, 44302), (269, 44260), (271, 44239), (275, 44206), (285, 44134), (286, 44128), (295, 44080), (304, 44035), (310, 44011), (314, 43996), (323, 43972),

Gene: Virgeve\_50 Start: 45015, Stop: 43612, Start Num: 64

Candidate Starts for Virgeve\_50:

(Start: 34 @45177 has 34 MA's), (Start: 64 @45015 has 26 MA's), (Start: 67 @45012 has 65 MA's), (73, 44964), (86, 44892), (93, 44871), (Start: 121 @44775 has 1 MA's), (135, 44724), (147, 44658), (148, 44655), (153, 44604), (167, 44538), (171, 44526), (181, 44490), (197, 44445), (205, 44415), (212, 44376), (217, 44337), (221, 44304), (222, 44301), (224, 44295), (227, 44277), (236, 44244), (239, 44223), (249, 44193), (265, 44079), (269, 44037), (271, 44016), (275, 43983), (285, 43911), (286, 43905), (295, 43857), (304, 43812), (310, 43788), (314, 43773), (323, 43749),

Gene: Vista\_51 Start: 45248, Stop: 43845, Start Num: 65

Candidate Starts for Vista\_51:

(Start: 34 @45413 has 34 MA's), (Start: 65 @45248 has 226 MA's), (Start: 67 @45245 has 65 MA's), (Start: 68 @45239 has 1 MA's), (73, 45197), (86, 45125), (93, 45104), (Start: 121 @45008 has 1 MA's), (135, 44957), (147, 44891), (148, 44888), (151, 44864), (153, 44837), (167, 44771), (171, 44759), (181, 44723), (197, 44678), (205, 44648), (212, 44609), (217, 44570), (221, 44537), (222, 44534), (227, 44510), (236, 44477), (239, 44456), (249, 44426), (265, 44312), (269, 44270), (271, 44249), (275, 44216), (285, 44144), (286, 44138), (295, 44090), (304, 44045), (310, 44021), (314, 44006), (323, 43982),

Gene: Vivaldi\_52 Start: 45680, Stop: 44280, Start Num: 67

Candidate Starts for Vivaldi\_52:

(Start: 64 @45683 has 26 MA's), (Start: 67 @45680 has 65 MA's), (Start: 68 @45674 has 1 MA's), (73, 45632), (86, 45560), (93, 45539), (Start: 121 @45443 has 1 MA's), (135, 45392), (147, 45326), (148, 45323), (153, 45272), (167, 45206), (171, 45194), (181, 45158), (197, 45113), (205, 45083), (212, 45044), (217, 45005), (221, 44972), (222, 44969), (227, 44945), (236, 44912), (239, 44891),

(249, 44861), (265, 44747), (269, 44705), (271, 44684), (275, 44651), (285, 44579), (286, 44573), (304, 44480), (310, 44456), (314, 44441), (323, 44417),

Gene: Vortex\_51 Start: 44945, Stop: 43542, Start Num: 65

Candidate Starts for Vortex\_51:

(10, 45323), (12, 45278), (18, 45236), (Start: 27 @45155 has 5 MA's), (Start: 34 @45110 has 34 MA's), (Start: 65 @44945 has 226 MA's), (Start: 67 @44942 has 65 MA's), (Start: 68 @44936 has 1 MA's), (73, 44894), (86, 44822), (93, 44801), (Start: 121 @44705 has 1 MA's), (135, 44654), (147, 44588), (148, 44585), (153, 44534), (167, 44468), (171, 44456), (181, 44420), (197, 44375), (205, 44345), (212, 44306), (217, 44267), (221, 44234), (222, 44231), (227, 44207), (236, 44174), (239, 44153), (249, 44123), (265, 44009), (269, 43967), (271, 43946), (275, 43913), (285, 43841), (286, 43835), (295, 43787), (304, 43742), (310, 43718), (314, 43703), (323, 43679),

Gene: Waleliano\_46 Start: 45719, Stop: 44379, Start Num: 65

Candidate Starts for Waleliano\_46:

(Start: 64 @45722 has 26 MA's), (Start: 65 @45719 has 226 MA's), (Start: 68 @45710 has 1 MA's), (69, 45704), (76, 45653), (116, 45506), (135, 45440), (157, 45299), (161, 45275), (167, 45254), (168, 45251), (173, 45236), (176, 45221), (203, 45152), (207, 45119), (213, 45095), (222, 45023), (225, 45008), (227, 44999), (236, 44966), (237, 44963), (239, 44945), (249, 44915), (260, 44855), (262, 44837), (264, 44825), (266, 44792), (267, 44780), (268, 44774), (269, 44765), (271, 44744), (274, 44735), (275, 44711), (286, 44672), (298, 44606), (299, 44603), (314, 44540), (319, 44534), (323, 44516),

Gene: Wallhey\_50 Start: 44808, Stop: 43405, Start Num: 65

Candidate Starts for Wallhey\_50:

(10, 45186), (12, 45141), (18, 45099), (Start: 27 @45018 has 5 MA's), (Start: 34 @44973 has 34 MA's), (Start: 65 @44808 has 226 MA's), (Start: 67 @44805 has 65 MA's), (Start: 68 @44799 has 1 MA's), (73, 44757), (86, 44685), (93, 44664), (Start: 121 @44568 has 1 MA's), (135, 44517), (147, 44451), (148, 44448), (153, 44397), (167, 44331), (171, 44319), (181, 44283), (197, 44238), (205, 44208), (212, 44169), (217, 44130), (221, 44097), (222, 44094), (224, 44088), (227, 44070), (236, 44037), (239, 44016), (249, 43986), (265, 43872), (269, 43830), (271, 43809), (275, 43776), (285, 43704), (286, 43698), (295, 43650), (304, 43605), (310, 43581), (314, 43566), (323, 43542),

Gene: Waterdiva\_51 Start: 45240, Stop: 43837, Start Num: 65

Candidate Starts for Waterdiva\_51:

(Start: 34 @45405 has 34 MA's), (Start: 65 @45240 has 226 MA's), (Start: 67 @45237 has 65 MA's), (Start: 68 @45231 has 1 MA's), (73, 45189), (86, 45117), (93, 45096), (Start: 121 @45000 has 1 MA's), (135, 44949), (147, 44883), (148, 44880), (151, 44856), (153, 44829), (167, 44763), (171, 44751), (181, 44715), (197, 44670), (205, 44640), (212, 44601), (217, 44562), (221, 44529), (222, 44526), (227, 44502), (236, 44469), (239, 44448), (249, 44418), (265, 44304), (269, 44262), (271, 44241), (275, 44208), (285, 44136), (286, 44130), (295, 44082), (304, 44037), (310, 44013), (314, 43998), (323, 43974),

Gene: Weher20\_51 Start: 45239, Stop: 43836, Start Num: 65

Candidate Starts for Weher20\_51:

(Start: 34 @45404 has 34 MA's), (Start: 65 @45239 has 226 MA's), (Start: 67 @45236 has 65 MA's), (Start: 68 @45230 has 1 MA's), (73, 45188), (86, 45116), (93, 45095), (Start: 121 @44999 has 1 MA's), (135, 44948), (147, 44882), (148, 44879), (153, 44828), (167, 44762), (171, 44750), (181, 44714), (197, 44669), (205, 44639), (212, 44600), (217, 44561), (221, 44528), (222, 44525), (224, 44519), (227, 44501), (236, 44468), (239, 44447), (249, 44417), (265, 44303), (269, 44261), (271, 44240), (275, 44207), (285, 44135), (286, 44129), (295, 44081), (304, 44036), (310, 44012), (314, 43997), (323, 43973),

Gene: West99\_50 Start: 44995, Stop: 43628, Start Num: 67

Candidate Starts for West99\_50:

(Start: 67 @44995 has 65 MA's), (75, 44932), (77, 44917), (108, 44806), (120, 44755), (134, 44707), (142, 44659), (164, 44518), (167, 44509), (190, 44464), (192, 44458), (193, 44452), (197, 44440), (217, 44335), (221, 44302), (225, 44284), (227, 44275), (236, 44242), (241, 44215), (249, 44191), (253, 44164), (258, 44137), (266, 44062), (271, 44017), (275, 43984), (282, 43963), (283, 43957), (289, 43924), (291, 43915), (293, 43906), (335, 43744), (338, 43726), (346, 43669),

Gene: Widow\_31 Start: 24786, Stop: 23686, Start Num: 118

Candidate Starts for Widow\_31:

(Start: 118 @24786 has 5 MA's), (123, 24771), (134, 24738), (159, 24570), (163, 24546), (201, 24474), (223, 24354), (225, 24342), (248, 24246), (264, 24153), (266, 24120), (271, 24075), (272, 24072), (275, 24042), (282, 24021), (283, 24015), (284, 24012), (291, 23970), (304, 23907), (327, 23811), (332, 23796), (337, 23775),

Gene: Windsor\_50 Start: 44944, Stop: 43541, Start Num: 65

Candidate Starts for Windsor\_50:

(10, 45322), (12, 45277), (18, 45235), (Start: 27 @45154 has 5 MA's), (Start: 34 @45109 has 34 MA's), (Start: 65 @44944 has 226 MA's), (Start: 67 @44941 has 65 MA's), (Start: 68 @44935 has 1 MA's), (73, 44893), (86, 44821), (93, 44800), (Start: 121 @44704 has 1 MA's), (135, 44653), (147, 44587), (148, 44584), (153, 44533), (167, 44467), (171, 44455), (181, 44419), (197, 44374), (205, 44344), (212, 44305), (217, 44266), (221, 44233), (222, 44230), (227, 44206), (236, 44173), (239, 44152), (249, 44122), (265, 44008), (269, 43966), (271, 43945), (275, 43912), (285, 43840), (286, 43834), (295, 43786), (304, 43741), (310, 43717), (314, 43702), (323, 43678),

Gene: Wooper\_47 Start: 40124, Stop: 38955, Start Num: 121

Candidate Starts for Wooper\_47:

(5, 40952), (7, 40841), (11, 40796), (Start: 27 @40637 has 5 MA's), (Start: 41 @40559 has 1 MA's), (81, 40304), (91, 40277), (Start: 121 @40124 has 1 MA's), (124, 40118), (130, 40094), (133, 40085), (135, 40067), (141, 40034), (143, 40028), (155, 39938), (168, 39878), (194, 39809), (209, 39746), (219, 39674), (221, 39662), (225, 39644), (227, 39635), (236, 39602), (249, 39551), (256, 39521), (259, 39494), (260, 39491), (271, 39383), (276, 39341), (278, 39308), (283, 39263), (286, 39251), (292, 39218), (293, 39212), (298, 39185),

Gene: Xavier\_50 Start: 44952, Stop: 43549, Start Num: 65

Candidate Starts for Xavier\_50:

(10, 45330), (12, 45285), (18, 45243), (Start: 27 @45162 has 5 MA's), (Start: 34 @45117 has 34 MA's), (Start: 65 @44952 has 226 MA's), (Start: 67 @44949 has 65 MA's), (Start: 68 @44943 has 1 MA's), (73, 44901), (86, 44829), (93, 44808), (Start: 121 @44712 has 1 MA's), (135, 44661), (147, 44595), (148, 44592), (153, 44541), (167, 44475), (171, 44463), (181, 44427), (197, 44382), (205, 44352), (212, 44313), (217, 44274), (221, 44241), (222, 44238), (224, 44232), (227, 44214), (236, 44181), (239, 44160), (249, 44130), (265, 44016), (269, 43974), (271, 43953), (275, 43920), (285, 43848), (286, 43842), (295, 43794), (304, 43749), (310, 43725), (314, 43710), (323, 43686),

Gene: Xkcd426\_48 Start: 42277, Stop: 41054, Start Num: 99

Candidate Starts for Xkcd426\_48:

(82, 42331), (Start: 92 @42301 has 5 MA's), (Start: 99 @42277 has 5 MA's), (102, 42268), (104, 42259), (138, 42076), (152, 41983), (155, 41965), (163, 41920), (167, 41908), (199, 41851), (212, 41800), (215, 41782), (226, 41704), (233, 41680), (241, 41641), (244, 41632), (283, 41395), (291, 41356), (296, 41326), (302, 41302), (306, 41278), (308, 41269), (332, 41170), (334, 41161), (344, 41101), (348, 41065),

Gene: YDN12\_46 Start: 35847, Stop: 34681, Start Num: 99

Candidate Starts for YDN12\_46:

(Start: 99 @35847 has 5 MA's), (102, 35838), (114, 35808), (126, 35769), (138, 35703), (154, 35598), (155, 35592), (163, 35547), (199, 35478), (204, 35472), (212, 35427), (215, 35409), (225, 35337), (233, 35307), (240, 35271), (241, 35268), (244, 35259), (284, 35019), (291, 34983), (293, 34974), (302, 34929), (306, 34905), (308, 34896), (316, 34863), (329, 34806), (334, 34788), (344, 34728), (347, 34695), (348, 34692),

Gene: Yago84\_44 Start: 38830, Stop: 37565, Start Num: 40

Candidate Starts for Yago84\_44:

(Start: 40 @38830 has 6 MA's), (44, 38812), (50, 38791), (Start: 121 @38704 has 1 MA's), (124, 38698), (129, 38677), (135, 38647), (196, 38389), (202, 38371), (213, 38314), (222, 38242), (225, 38227), (227, 38218), (232, 38200), (236, 38185), (241, 38158), (249, 38134), (260, 38074), (267, 37999), (271, 37966), (275, 37933), (276, 37924), (279, 37900), (282, 37888), (293, 37822), (298, 37795), (301, 37783), (330, 37675), (331, 37672), (338, 37639),

Gene: Yahalom\_49 Start: 44898, Stop: 43276, Start Num: 33

Candidate Starts for Yahalom\_49:

(16, 45015), (20, 45009), (21, 44994), (Start: 33 @44898 has 9 MA's), (Start: 34 @44889 has 34 MA's), (51, 44793), (Start: 70 @44715 has 2 MA's), (87, 44580), (Start: 121 @44421 has 1 MA's), (127, 44406), (129, 44394), (135, 44364), (144, 44322), (153, 44244), (188, 44112), (195, 44079), (197, 44070), (216, 43977), (222, 43929), (225, 43914), (227, 43905), (241, 43845), (249, 43821), (264, 43731), (275, 43620), (283, 43587), (284, 43584), (287, 43569), (292, 43548), (298, 43515),

Gene: Yinz\_49 Start: 44914, Stop: 43301, Start Num: 34

Candidate Starts for Yinz\_49:

(16, 45040), (20, 45034), (21, 45019), (Start: 33 @44923 has 9 MA's), (Start: 34 @44914 has 34 MA's), (51, 44818), (Start: 70 @44740 has 2 MA's), (87, 44605), (Start: 121 @44446 has 1 MA's), (127, 44431), (129, 44419), (135, 44389), (144, 44347), (153, 44269), (166, 44203), (167, 44200), (188, 44137), (195, 44104), (197, 44095), (216, 44002), (222, 43954), (225, 43939), (227, 43930), (241, 43870), (249, 43846), (264, 43756), (275, 43645), (283, 43612), (284, 43609), (287, 43594), (292, 43573), (298, 43540),

Gene: Yoshand\_52 Start: 45400, Stop: 44000, Start Num: 67

Candidate Starts for Yoshand\_52:

(10, 45781), (12, 45736), (18, 45694), (Start: 27 @45613 has 5 MA's), (Start: 34 @45568 has 34 MA's), (Start: 65 @45403 has 226 MA's), (Start: 67 @45400 has 65 MA's), (Start: 68 @45394 has 1 MA's), (73, 45352), (86, 45280), (93, 45259), (Start: 121 @45163 has 1 MA's), (135, 45112), (147, 45046), (148, 45043), (153, 44992), (167, 44926), (171, 44914), (181, 44878), (197, 44833), (205, 44803), (212, 44764), (217, 44725), (221, 44692), (222, 44689), (227, 44665), (236, 44632), (239, 44611), (249, 44581), (265, 44467), (269, 44425), (271, 44404), (275, 44371), (285, 44299), (286, 44293), (295, 44245), (304, 44200), (310, 44176), (314, 44161), (323, 44137),

Gene: YouGoGlencoco\_51 Start: 45242, Stop: 43839, Start Num: 65

Candidate Starts for YouGoGlencoco\_51:

(10, 45620), (12, 45575), (18, 45533), (Start: 27 @45452 has 5 MA's), (Start: 34 @45407 has 34 MA's), (Start: 65 @45242 has 226 MA's), (Start: 67 @45239 has 65 MA's), (Start: 68 @45233 has 1 MA's), (73, 45191), (86, 45119), (93, 45098), (Start: 121 @45002 has 1 MA's), (135, 44951), (147, 44885), (148, 44882), (153, 44831), (167, 44765), (171, 44753), (181, 44717), (197, 44672), (205, 44642), (212, 44603), (217, 44564), (221, 44531), (222, 44528), (227, 44504), (236, 44471), (239, 44450), (249, 44420), (265, 44306), (269, 44264), (271, 44243), (275, 44210), (285, 44138), (286, 44132), (295, 44084), (304, 44039), (310, 44015), (314, 44000), (323, 43976),

Gene: Zaider\_52 Start: 45472, Stop: 44069, Start Num: 65

Candidate Starts for Zaider\_52:

(Start: 34 @45637 has 34 MA's), (Start: 65 @45472 has 226 MA's), (Start: 67 @45469 has 65 MA's), (Start: 68 @45463 has 1 MA's), (73, 45421), (86, 45349), (93, 45328), (Start: 121 @45232 has 1 MA's), (135, 45181), (147, 45115), (148, 45112), (151, 45088), (153, 45061), (167, 44995), (171, 44983), (181, 44947), (197, 44902), (205, 44872), (212, 44833), (217, 44794), (221, 44761), (222, 44758), (227, 44734), (236, 44701), (239, 44680), (249, 44650), (265, 44536), (269, 44494), (271, 44473), (275, 44440), (285, 44368), (286, 44362), (295, 44314), (304, 44269), (310, 44245), (314, 44230), (323, 44206),

Gene: Zelda\_51 Start: 45289, Stop: 43886, Start Num: 65

Candidate Starts for Zelda\_51:

(Start: 34 @45454 has 34 MA's), (Start: 65 @45289 has 226 MA's), (Start: 67 @45286 has 65 MA's), (Start: 68 @45280 has 1 MA's), (73, 45238), (86, 45166), (93, 45145), (Start: 121 @45049 has 1 MA's), (135, 44998), (147, 44932), (148, 44929), (151, 44905), (153, 44878), (167, 44812), (171, 44800), (181, 44764), (197, 44719), (205, 44689), (212, 44650), (217, 44611), (221, 44578), (222, 44575), (227, 44551), (236, 44518), (239, 44497), (249, 44467), (265, 44353), (269, 44311), (271, 44290), (275, 44257), (285, 44185), (286, 44179), (295, 44131), (304, 44086), (310, 44062), (314, 44047), (323, 44023),

Gene: Zemanar\_47 Start: 45703, Stop: 44360, Start Num: 64

Candidate Starts for Zemanar\_47:

(Start: 64 @45703 has 26 MA's), (Start: 65 @45700 has 226 MA's), (Start: 68 @45691 has 1 MA's), (69, 45685), (76, 45634), (116, 45487), (130, 45442), (135, 45421), (157, 45280), (161, 45256), (167, 45235), (168, 45232), (173, 45217), (176, 45202), (203, 45133), (207, 45100), (213, 45076), (225, 44989), (227, 44980), (236, 44947), (237, 44944), (239, 44926), (249, 44896), (260, 44836), (262, 44818), (264, 44806), (267, 44761), (268, 44755), (269, 44746), (271, 44725), (274, 44716), (275, 44692), (286, 44653), (298, 44587), (299, 44584), (319, 44515), (323, 44497),

Gene: Zenteno07\_55 Start: 45181, Stop: 43661, Start Num: 38

Candidate Starts for Zenteno07\_55:

(Start: 38 @45181 has 1 MA's), (49, 45130), (63, 45052), (79, 44950), (122, 44788), (135, 44740), (153, 44620), (155, 44611), (167, 44554), (183, 44500), (184, 44497), (212, 44392), (213, 44389), (222, 44317), (227, 44293), (240, 44236), (260, 44143), (271, 44026), (275, 43993), (276, 43984), (283, 43966), (286, 43954), (301, 43876), (310, 43837), (348, 43669),

Gene: Zonia\_51 Start: 45259, Stop: 43856, Start Num: 65

Candidate Starts for Zonia\_51:

(10, 45637), (12, 45592), (18, 45550), (Start: 27 @45469 has 5 MA's), (Start: 34 @45424 has 34 MA's), (Start: 65 @45259 has 226 MA's), (Start: 67 @45256 has 65 MA's), (Start: 68 @45250 has 1 MA's), (73, 45208), (86, 45136), (93, 45115), (Start: 121 @45019 has 1 MA's), (135, 44968), (147, 44902), (148, 44899), (153, 44848), (167, 44782), (171, 44770), (181, 44734), (197, 44689), (205, 44659), (212, 44620), (217, 44581), (221, 44548), (222, 44545), (224, 44539), (227, 44521), (236, 44488), (239, 44467), (249, 44437), (265, 44323), (269, 44281), (271, 44260), (275, 44227), (285, 44155), (286, 44149), (295, 44101), (304, 44056), (310, 44032), (314, 44017), (323, 43993),