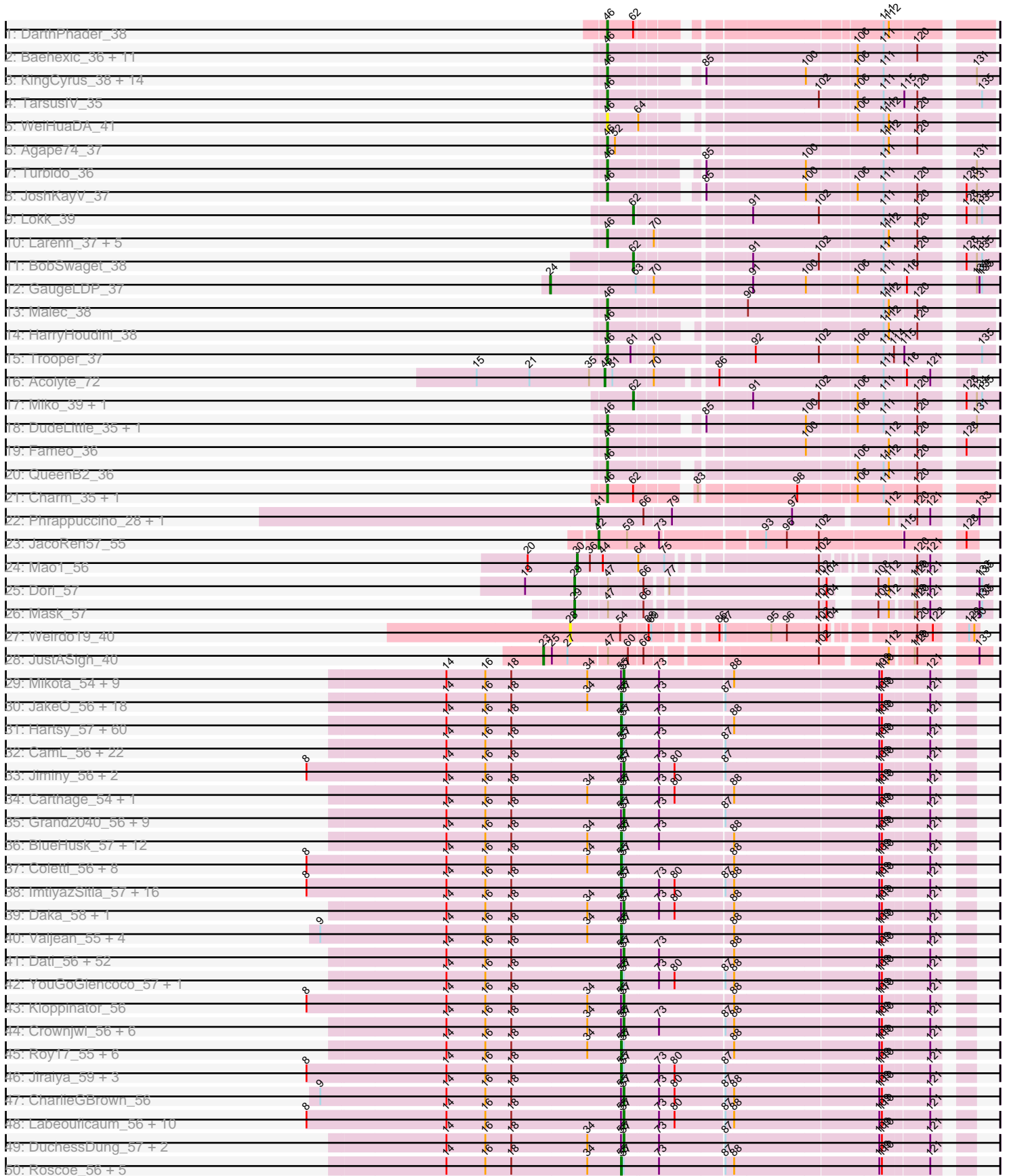
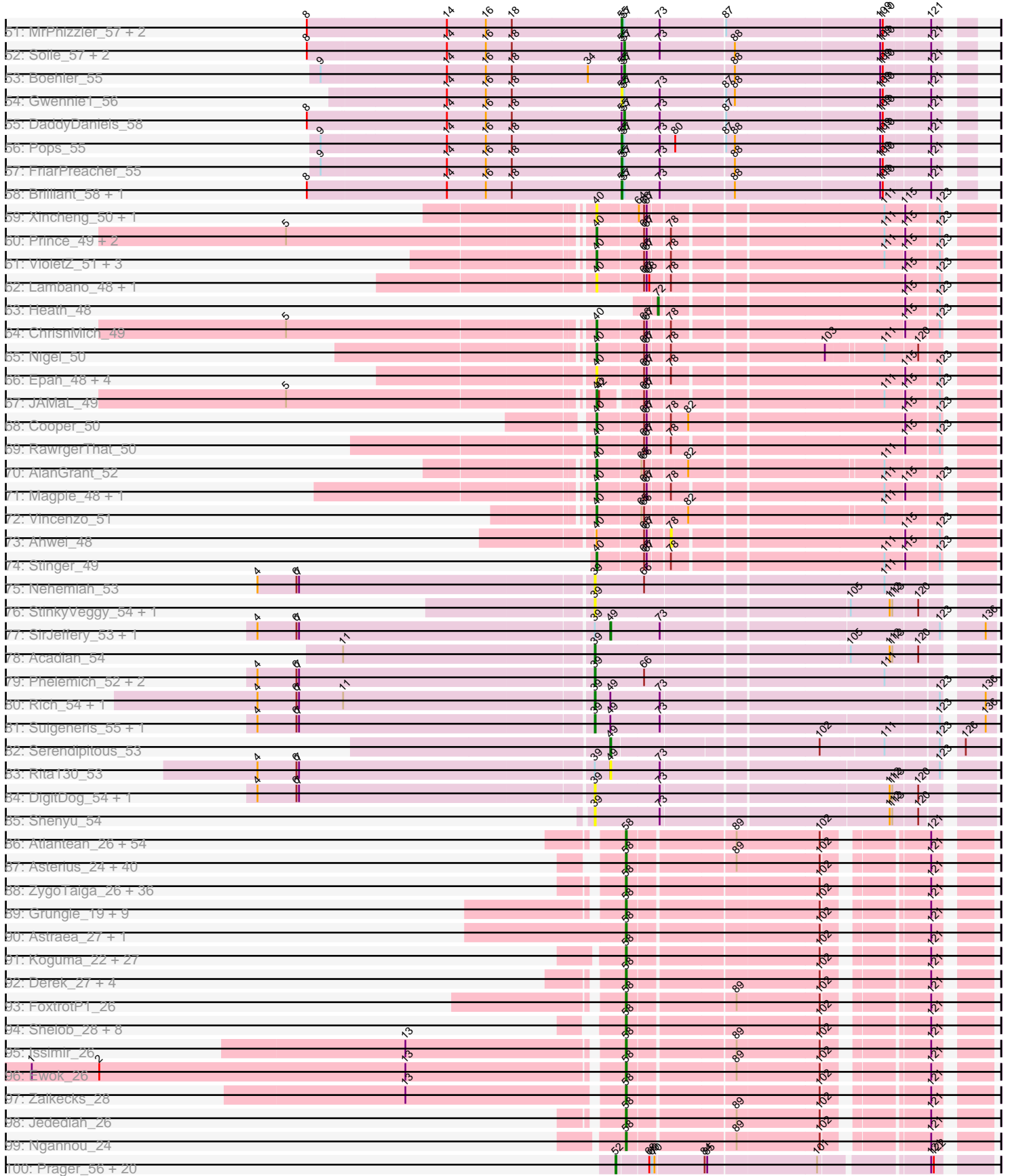


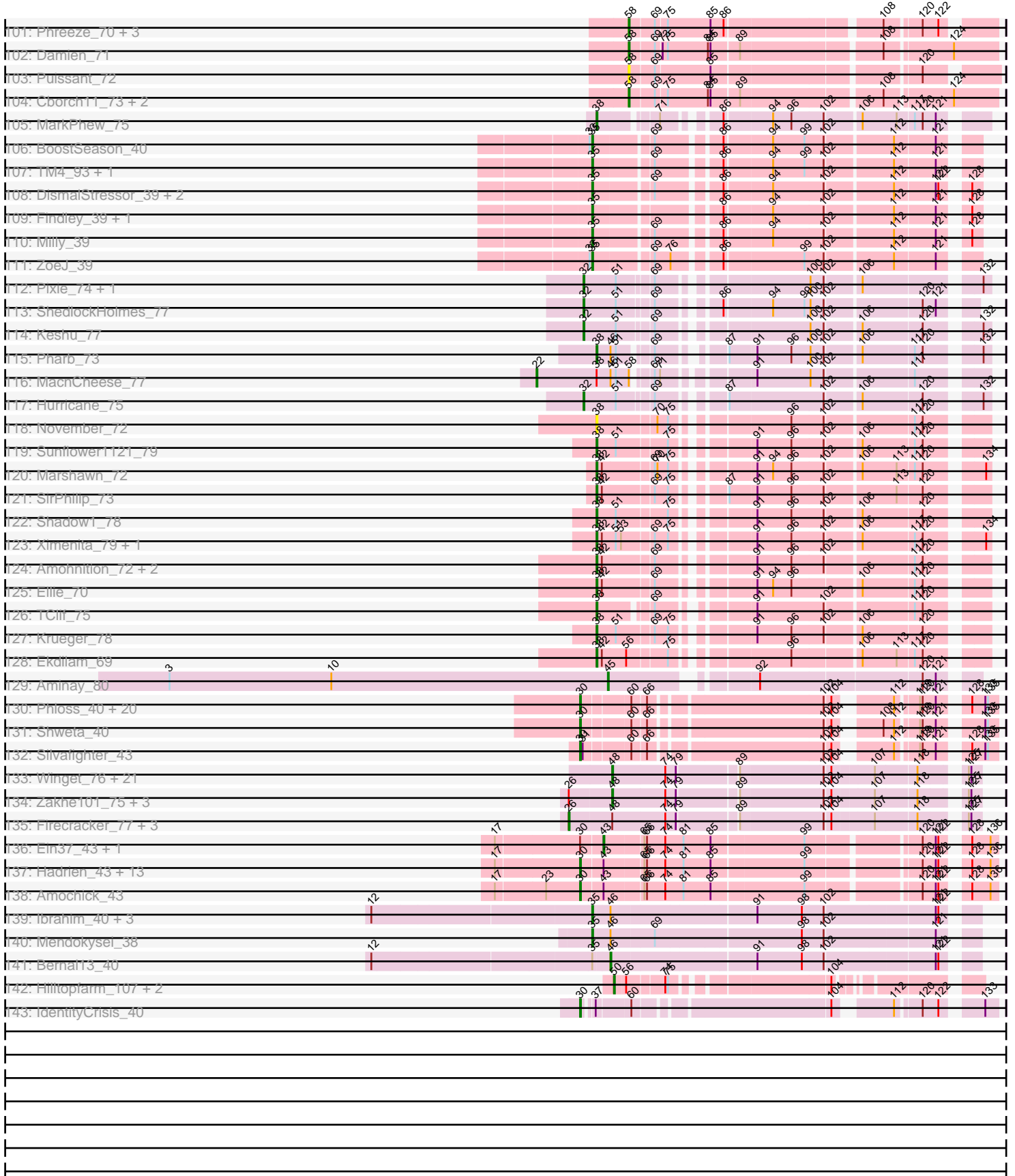
Pham 202541



Pham 202541



Pham 202541



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 202541 Report

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

Pham number 202541 has 726 members, 73 are drafts.

Phages represented in each track:

- Track 1 : DarthPhader\_38
- Track 2 : Baehexic\_36, Sknot\_38, MiculUcigas\_36, Centaur\_37, WideWale\_37, Drake55\_38, Piro94\_36, Updawg\_37, Equemioh13\_37, Buggy\_38, Flare16\_36, NaSiaTalie\_36
- Track 3 : KingCyrus\_38, ChipMunk\_38, SnapTap\_36, Crucio\_36, FiringLine\_36, QueenBeesly\_36, EvilGenius\_38, Georgie2\_37, Anselm\_37, Power\_35, SemperFi\_37, AbbyPaige\_37, Whabigail7\_36, SweetiePie\_36, Dalmatian\_37
- Track 4 : TarsusIV\_35
- Track 5 : WeiHuaDA\_41
- Track 6 : Agape74\_37
- Track 7 : Turbido\_36
- Track 8 : JoshKayV\_37
- Track 9 : Lokk\_39
- Track 10 : Larenn\_37, Jerm\_37, Leviathan\_37, Dignity\_37, LilTurb\_36, Smeagan\_38
- Track 11 : BobSwaget\_38
- Track 12 : GaugeLDP\_37
- Track 13 : Malec\_38
- Track 14 : HarryHoudini\_38
- Track 15 : Trooper\_37
- Track 16 : Acolyte\_72
- Track 17 : Miko\_39, Rachaly\_39
- Track 18 : DudeLittle\_35, Retro23\_37
- Track 19 : Fameo\_36
- Track 20 : QueenB2\_36
- Track 21 : Charm\_35, DreamTeam1\_35
- Track 22 : Phrappuccino\_28, Settecandela\_28
- Track 23 : JacoRen57\_55
- Track 24 : Mao1\_56
- Track 25 : Dori\_57
- Track 26 : Mask\_57
- Track 27 : Weirdo19\_40
- Track 28 : JustASigh\_40
- Track 29 : Mikota\_54, Frankicide\_55, KlimbOn\_55, MiniBoss\_54, AbsoluteMadLad\_55, Dingo\_54, HSavage\_55, Sheila\_54, Colbert\_54, Phamished\_57
- Track 30 : JakeO\_56, Apizium\_55, RedMaple\_57, LeiMonet\_58, Fozzie\_55, Cornobble\_55, TallGrassMM\_56, Surely\_56, Newman\_55, ElvisPhasley\_60,

Cannibal\_56, Squid\_56, TomBombadil\_56, Inverness\_55, Telesworld\_54, SassyCat97\_55, Veritas\_57, Solosis\_55, OSmaximus\_57

- Track 31 : Hartsy\_57, Piglet\_0056, Altwerkus\_54, Lumine\_57, Fringe\_60, ThreeOh3D2\_57, Windsor\_56, Kahve\_56, HighStump\_58, Legolas\_58, Haimas\_55, Pherdinand\_57, Orwigg\_57, Mesmerelda\_57, Etaye\_56, Toni\_55, Pipsqueak\_55, Hertubise\_56, Kikipoo\_57, Morty\_57, Serpentine\_0056, Nacho\_0057, Bluephacebaby\_56, KingTut\_48, Jesabah\_56, Vista\_55, Inchworm\_58, Bishoperium\_56, BlackStallion\_57, Phipps\_56, Jillium\_56, Gareth\_56, UncleHowie\_55, Gophee\_57, Iridessa\_58, Vaticameos\_53, JacAttac\_57, LeeLot\_56, Longacauda\_57, Mecca\_56, CampRoach\_58, Lego3393\_55, Kimbrough\_57, Craff\_59, Anderson\_57, Matalotodo\_55, Zelda\_56, Buckeye\_55, Thora\_56, LasagnaCat\_58, Scrick\_57, Katniss\_57, Chaelin\_57, Megatron\_57, Megamind20\_57, PhatCats2014\_57, Harvey\_55, Yoshand\_57, Gwilliam\_58, SilverBell\_55, DonSanchon\_54
- Track 32 : CamL\_56, Mosaic\_55, MRabcd\_55, Sophia\_55, Cosmolli16\_57, Lulwa\_54, Chorkpop\_56, Daffy\_56, Childish\_56, Riggan\_57, Lasso\_56, Potter\_55, Mana\_55, QueenBeane\_56, Puhltonio\_56, Kwadwo\_55, Samaymay\_56, Haleema\_55, LostAndPhound\_56, Vortex\_56, Banjo\_55, Xavier\_55, Giraffe\_57
- Track 33 : Jiminy\_56, Duggie\_56, Thunderbird\_55
- Track 34 : Carthage\_54, Prickles\_57
- Track 35 : Grand2040\_56, Serendipity\_56, Timmi\_55, MitKao\_56, Maru\_56, Mesh1\_57, Iridoclysis\_57, Morgushi\_56, Podrick\_54, Held\_56
- Track 36 : BlueHusk\_57, Suffolk\_54, Soto\_54, Gyarad\_0054, CheetO\_55, Horchata\_55, SDcharge11\_55, KLucky39\_54, Basato\_56, OliverWalter\_55, Roliet\_54, Chunky\_54, KingVeVeVe\_54
- Track 37 : Coletti\_56, Virgeve\_55, Keitherie\_57, Chute\_56, PhatLouie\_57, Hamish\_55, Swiphy\_58, Charles1\_57, Numberten\_55
- Track 38 : ImtiyazSitla\_57, Trypo\_58, Maskar\_57, BatteryCK\_56, Emiris\_58, JangoPhett\_56, PhrankReynolds\_55, Oline\_56, Mag7\_56, Ashraf\_57, Kailash\_56, Wallhey\_56, Pinkman\_55, MelsMeow\_56, Durga\_58, GeneCoco\_56, Caspiboi\_58
- Track 39 : Daka\_58, DirtJuice\_57
- Track 40 : Valjean\_55, Zaider\_56, Olive\_55, EmpTee\_55, Spartan300\_55
- Track 41 : Dati\_56, Eugenia\_56, Mutante\_56, Placalicious\_56, Badfish\_57, Melc17\_56, Andre\_58, Burr\_56, ABU\_57, Magic8\_57, Mulan\_56, Weher20\_56, True\_55, DoesntMatter\_54, Mcshane\_55, Swish\_57, Nicole21\_57, Beaglebox\_56, Slatt\_57, Waterdiva\_56, Freya\_54, Skippy\_57, Selr12\_56, Fang\_57, Quisquilliae\_57, Ricotta\_55, ProfessorX\_55, Olak\_55, AngelCake\_55, PinheadLarry\_57, Oosterbaan\_56, FluffyNinja\_57, JDog\_55, PhrodoBaggins\_57, Adriana\_57, Pacifista\_55, Orion\_57, Scoot17C\_57, Cher\_56, Cobra\_57, Usavi\_56, Squiggle\_57, Murdoc\_55, IsaacEli\_57, HenryJackson\_56, FugateOSU\_56, Orfeu\_54, Nyala\_55, Dice\_55, Chah\_58, PG1\_57, Sigman\_57, Tomlarah\_57
- Track 42 : YouGoGlencoco\_57, LemonSlice\_57
- Track 43 : Kloppinator\_56
- Track 44 : Crownjwl\_56, Antonia\_55, Vivaldi\_57, Schadenfreude\_55, Lopsy\_53, AltPhacts\_55, Eremos\_55
- Track 45 : Roy17\_55, Dione\_54, Phareon\_55, LuckyMarjie\_54, Lulumae\_54, Phunky\_55, Nathan\_57
- Track 46 : Jiraiya\_59, Struggle\_56, Doddsville\_56, Schueller\_57
- Track 47 : CharlieGBrown\_56
- Track 48 : Labeouficaum\_56, Derpp\_55, Virapocalypse\_57, Hocus\_56, MichaelPhcott\_56, PhenghisKhan\_56, Zonia\_57, TyrionL\_56, Kwksand96\_56, Phergie\_57, Phleuron\_56
- Track 49 : DuchessDung\_57, Hetaeria\_55, UAch1\_55

- Track 50 : Roscoe\_56, Aelin\_55, Manad\_55, Robyn\_55, Tooj\_54, Vaishali24\_54
- Track 51 : MrPhizzler\_57, Khan1\_57, Plmatters\_55
- Track 52 : Soile\_57, DelRivs\_55, Simielle\_55
- Track 53 : Boehler\_55
- Track 54 : Gwennie1\_56
- Track 55 : DaddyDaniels\_58
- Track 56 : Pops\_55
- Track 57 : FriarPreacher\_55
- Track 58 : Brilliant\_58, Omniscient\_57
- Track 59 : Xincheng\_50, JaguarMi\_51
- Track 60 : Prince\_49, Apex\_50, Lolalove\_50
- Track 61 : VioletZ\_51, Austelle\_50, Hydro\_49, Mudslide\_49
- Track 62 : Lambano\_48, Hally898\_48
- Track 63 : Heath\_48
- Track 64 : ChrisnMich\_49
- Track 65 : Nigel\_50
- Track 66 : Epah\_48, Nanao\_48, GinPorsche\_48, Antihero\_48, Poster\_48
- Track 67 : JAMaL\_49
- Track 68 : Cooper\_50
- Track 69 : RawrgerThat\_50
- Track 70 : AlanGrant\_52
- Track 71 : Magpie\_48, Fanaw\_48
- Track 72 : Vincenzo\_51
- Track 73 : Ahwei\_48
- Track 74 : Stinger\_49
- Track 75 : Nehemiah\_53
- Track 76 : StinkyVeggy\_54, KarasumaRum\_54
- Track 77 : SirJeffery\_53, EastView9101\_53
- Track 78 : Acadian\_54
- Track 79 : Phelemich\_52, Mysterious\_54, Reprobate\_53
- Track 80 : Rich\_54, Bae\_55
- Track 81 : Suigeneris\_55, Donny\_55
- Track 82 : Serendipitous\_53
- Track 83 : Rita130\_53
- Track 84 : DigitDog\_54, Nangang\_54
- Track 85 : Shenyu\_54
- Track 86 : Atlantean\_26, Phlegm\_28, SmallFry\_26, Phusco\_26, InigoMontoya\_27, ValleyTerrace\_26, IkeLoa\_22, Jemmno\_26, ShiaLabeouf\_26, Mikro\_24, Ablatia\_24, SilverDipper\_27, Specks\_31, Rahel\_26, Essence\_25, Momo\_25, DTDevon\_27, Guwapp\_26, ArcherS7\_25, Janiyra\_26, Gamgam\_26, Capablanca\_28, Pivoine\_26, CindyLou\_26, Littleton\_26, Chomp\_26, BeanWater\_22, Ghost\_26, Adlitam\_26, Amataga\_26, Patter\_26, Pier\_28, InterFolia\_33, Latch\_26, Kamryn\_26, Jezreel\_25, YoungMoneyMata\_26, Matsumoto\_25, Jaygup\_26, Tortoise16\_25, GlutenPhree\_24, Shnickers\_26, LifeSavor\_27, Bangla1971\_25, Ading\_26, Tyke\_28, LolaVinca\_29, DirtMonster\_25, Dandelion\_30, Quasimodo\_26, StephanieG\_26, Spec\_24, Domi\_21, Audrick\_28, Naija\_26
- Track 87 : Asterius\_24, PurduePete\_25, Burrough\_26, Tainan\_31, Gabriel\_26, BigCity\_30, Blubba\_20, Nappy\_27, Naval22\_28, BackyardAgain\_23, Wally\_25, Colt\_19, I3\_28, Bigswole\_32, EggyFarm\_30, Morizzled23\_25, Concombre\_25, Caravan\_24, Pio\_29, LordLeafolot\_31, Zeenon\_28, JustHall\_25, Bxz1\_27, DrPhinkDaddy\_26, Bipolarisk\_25, JigglyPuff\_26, Megamind\_26, Grasshills\_30, JayJay\_27, Napoleon13\_25, Spud\_28, Bonray\_26, NuevoMundo\_29, Demodog\_24, Breeniome\_26, SrishMeg2525\_25, Melpomini\_25, Cane17\_19, Mangeria\_29,

Catera\_24, FrayBell\_32

- Track 88 : ZygoTaiga\_26, Izajani\_27, MoMoMixon\_27, YemiJoy2021\_27, SVoro\_25, Darko\_25, Salacia\_28, Willis\_26, BananaFence\_27, Pleione\_28, Ava3\_27, Loanshark\_26, NedWong\_27, Shrimp\_26, Iota\_23, Daffodil\_28, Nidhogg\_27, Bread\_27, Erdmann\_27, EasyJones\_25, Rizal\_24, Drazdys\_26, ParkTD\_25, Teardrop\_25, EmToTheThree\_29, TinyTim\_26, Norm\_26, Yucca\_26, Ronan\_21, Delilah\_26, StubbySaigey\_25, FudgeTart\_27, Cali\_26, Roots515\_26, Gizmo\_28, Maby2021\_27, MikeLiesIn\_26
- Track 89 : Grungle\_19, Halldule\_22, Belieber\_22, Lethe\_25, Shaqnato\_22, LRRHood\_23, ScottMcG\_26, Lukilu\_19, McGee\_25, Blackdragon\_21
- Track 90 : Astraea\_27, Pinkcreek\_18
- Track 91 : Koguma\_22, ChickenPhender\_25, Cactojaque\_23, BadAgartude\_27, QBert\_24, LinStu\_26, ErnieJ\_27, Kboogie\_26, Blackbrain\_24, ET08\_21, Rabinovish\_25, JulietS\_21, Sauce\_27, JPickles\_24, Turret\_24, Phox\_25, Sprinklers\_26, Basquiat\_25, Fludd\_25, Yassified\_23, Charge21\_25, CharlieB\_26, Dietrick\_21, ChaylaJr\_25, Trinitium\_25, Babyland\_25, Sebata\_26, EmmaElysia\_24
- Track 92 : Derek\_27, Shifa\_23, RoMag\_21, HyRo\_25, NoodleTree\_25
- Track 93 : FoxtrotP1\_26
- Track 94 : Shelob\_28, Jessibeth14\_25, Alice\_21, McWolfish\_25, Delylah\_27, Khaleesi\_25, Stubby\_24, Flabslab\_27, Lee7\_25
- Track 95 : Issimir\_26
- Track 96 : Ewok\_26
- Track 97 : Zalkecks\_28
- Track 98 : Jedediah\_26
- Track 99 : Ngannou\_24
- Track 100 : Prager\_56, Giuseppe\_57, Adjutor\_55, PLOT\_56, SirHarley\_57, Chill\_58, Erk16\_55, PBI1\_53, WaldoWhy\_58, KandZ\_55, Butterscotch\_55, Delton\_57, Penelope2018\_56, Visconti\_57, Troll4\_56, BigMama\_54, Gumball\_55, Helpful\_59, Thoth\_56, Mopey\_57, Nova\_55
- Track 101 : Phreeze\_70, Beckerton\_70, Oaker\_71, Thumb\_72
- Track 102 : Damien\_71
- Track 103 : Puissant\_72
- Track 104 : Cborch11\_73, Konstantine\_75, Megatron06\_72
- Track 105 : MarkPhew\_75
- Track 106 : BoostSeason\_40
- Track 107 : TM4\_93, Mufasa\_40
- Track 108 : DismalStressor\_39, Marcoliusprime\_39, DismalFunk\_39
- Track 109 : Findley\_39, Strobilo\_39
- Track 110 : Milly\_39
- Track 111 : ZoeJ\_39
- Track 112 : Pixie\_74, TBond007\_71
- Track 113 : ShedlockHolmes\_77
- Track 114 : Keshu\_77
- Track 115 : Pharb\_73
- Track 116 : MacnCheese\_77
- Track 117 : Hurricane\_75
- Track 118 : November\_72
- Track 119 : Sunflower1121\_79
- Track 120 : Marshawn\_72
- Track 121 : SirPhilip\_73
- Track 122 : Shadow1\_78
- Track 123 : Ximenita\_79, Syra333\_77
- Track 124 : Amohnition\_72, Hammy\_72, DarthP\_72

- Track 125 : Ellie\_70
- Track 126 : TClif\_75
- Track 127 : Krueger\_78
- Track 128 : Ekdilam\_69
- Track 129 : Aminay\_80
- Track 130 : Phloss\_40, Pipsqueaks\_42, Smurph\_42, Carcharodon\_42, Melville\_45, Jamie19\_40, Parmesanjohn\_42, SpongeBob\_40, Gex\_42, Schnauzer\_43, Fulbright\_41, Magsby\_42, Scitech\_39, Xerxes\_42, Tapioca\_44, Panchino\_39, Andies\_40, Duplicity\_42, Snekmaggon\_40, Phrann\_44, Chewbacca\_44
- Track 131 : Shweta\_40
- Track 132 : Silvafighter\_43
- Track 133 : Winget\_76, Schuy\_77, Blessica\_76, Ryadel\_79, MadKillah\_77, Bora\_73, SchoolBus\_75, JangDynasty\_75, Vorrps\_76, TelAviv\_72, Idergollasper\_75, Zebo\_74, FoulBall\_76, Krili\_75, Vagabond\_76, Mori\_76, NiebruSaylor\_75, Murai\_76, Catdawg\_75, Alkhayr\_73, Shida\_75, Familton\_76
- Track 134 : Zakhe101\_75, YungJamal\_80, Smooch\_78, Wildflower\_76
- Track 135 : Firecracker\_77, Corndog\_78, Dylan\_76, Ashwin\_77
- Track 136 : Ein37\_43, Webster2\_43
- Track 137 : Hadrien\_43, Kinbote\_43, Ubuntu\_43, Dewey\_41, Hail\_41, Luke\_43, Luna22\_41, Amymech\_43, LilHazelNut\_43, OBUpride\_43, HH92\_42, Giles\_41, Forge\_41, Evanesce\_42
- Track 138 : Amochick\_43
- Track 139 : Ibrahim\_40, ZenTime222\_39, Nairb\_39, RonRayGun\_40
- Track 140 : Mendokysei\_38
- Track 141 : Bernal13\_40
- Track 142 : Hilltopfarm\_107, AuntGwenStacy\_104, Typha\_103
- Track 143 : IdentityCrisis\_40

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

The start number called the most often in the published annotations is 58, it was called in 177 of the 653 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Ablatia\_24, Ading\_26, Adlitam\_26, Alice\_21, Amataga\_26, ArcherS7\_25, Asterius\_24, Astraea\_27, Atlantean\_26, Audrick\_28, Ava3\_27, Babyland\_25, BackyardAgain\_23, BadAgartude\_27, BananaFence\_27, Bangla1971\_25, Basquiat\_25, BeanWater\_22, Beckerton\_70, Belieber\_22, BigCity\_30, Bigswole\_32, Bipolarisk\_25, Blackbrain\_24, Blackdragon\_21, Blubba\_20, Bonray\_26, Bread\_27, Breeniome\_26, Burrough\_26, Bxz1\_27, Cactojaque\_23, Cali\_26, Cane17\_19, Capablanca\_28, Caravan\_24, Catera\_24, Cborch11\_73, Chargie21\_25, CharlieB\_26, ChaylaJr\_25, ChickenPhender\_25, Chomp\_26, CindyLou\_26, Colt\_19, Concombre\_25, DTDevon\_27, Daffodil\_28, Damien\_71, Dandelion\_30, Darko\_25, Delilah\_26, Delylah\_27, Demodog\_24, Derek\_27, Dietrick\_21, DirtMonster\_25, Domi\_21, DrPhinkDaddy\_26, Drazdys\_26, ET08\_21, EasyJones\_25, EggyFarm\_30, EmToTheThree\_29, EmmaElysia\_24, Erdmann\_27, ErnieJ\_27, Essence\_25, Ewok\_26, Flabslab\_27, Fludd\_25, FoxtrotP1\_26, FrayBell\_32, FudgeTart\_27, Gabriel\_26, Gamgam\_26, Ghost\_26, Gizmo\_28, GlutenPhree\_24, Grasshills\_30, Grungle\_19, Guwapp\_26, Halldule\_22, HyRo\_25, I3\_28, IkeLoa\_22, InigoMontoya\_27, InterFolia\_33, Iota\_23, Issimir\_26, Izajani\_27, JPickles\_24,



Janiyra\_26, JayJay\_27, Jaygup\_26, Jedediah\_26, Jemmno\_26, Jessibeth14\_25, Jezreel\_25, JigglyPuff\_26, JulietS\_21, JustHall\_25, Kamryn\_26, Kboogie\_26, Khaleesi\_25, Koguma\_22, Konstantine\_75, LRRHood\_23, Latch\_26, Lee7\_25, Lethe\_25, LifeSavor\_27, LinStu\_26, Littleton\_26, Loanshark\_26, LolaVinca\_29, LordLeafolot\_31, Lukilu\_19, Maby2021\_27, Mangeria\_29, Matsumoto\_25, McGee\_25, McWolfish\_25, Megamind\_26, Megatron06\_72, Melpomini\_25, MikeLiesIn\_26, Mikro\_24, MoMoMixon\_27, Momo\_25, Morizzled23\_25, Naija\_26, Napoleon13\_25, Nappy\_27, Naval22\_28, NedWong\_27, Ngannou\_24, Nidhogg\_27, NoodleTree\_25, Norm\_26, NuevoMundo\_29, Oaker\_71, ParkTD\_25, Patter\_26, Phlegm\_28, Phox\_25, Phreeze\_70, Phusco\_26, Pier\_28, Pinkcreek\_18, Pio\_29, Pivoine\_26, Pleione\_28, Puissant\_72, PurduePete\_25, QBert\_24, Quasimodo\_26, Rabinovish\_25, Rahel\_26, Rizal\_24, RoMag\_21, Ronan\_21, Roots515\_26, SVoro\_25, Salacia\_28, Sauce\_27, ScottMcG\_26, Sebata\_26, Shaqnato\_22, Shelob\_28, ShiaLabeouf\_26, Shifa\_23, Shnickers\_26, Shrimp\_26, SilverDipper\_27, SmallFry\_26, Spec\_24, Specks\_31, Sprinklers\_26, Spud\_28, SrishMeg2525\_25, StephanieG\_26, StubbySaigey\_25, Stubby\_24, Tainan\_31, Teardrop\_25, Thumb\_72, TinyTim\_26, Tortoise16\_25, Trinitium\_25, Turret\_24, Tyke\_28, ValleyTerrace\_26, Wally\_25, Willis\_26, Yassified\_23, YemiJoy2021\_27, YoungMoneyMata\_26, Yucca\_26, Zalkecks\_28, Zeenon\_28, ZygoTaiga\_26,

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

- MacnCheese\_77,

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

- ABU\_57, AbbyPaige\_37, AbsoluteMadLad\_55, Acadian\_54, Acolyte\_72, Adjutor\_55, Adriana\_57, Aelin\_55, Agape74\_37, Ahwei\_48, AlanGrant\_52, Alkhayr\_73, AltPhacts\_55, Altwerkus\_54, Aminay\_80, Amochick\_43, Amohinition\_72, Amymech\_43, Anderson\_57, Andies\_40, Andre\_58, AngelCake\_55, Anselm\_37, Antihero\_48, Antonia\_55, Apex\_50, Apizium\_55, Ashraf\_57, Ashwin\_77, AuntGwenStacy\_104, Austelle\_50, Badfish\_57, Bae\_55, Baehexic\_36, Banjo\_55, Basato\_56, BatteryCK\_56, Beaglebox\_56, Bernal13\_40, BigMama\_54, Bishoperium\_56, BlackStallion\_57, Blessica\_76, BlueHusk\_57, Bluephacebaby\_56, BobSwaget\_38, Bohler\_55, BoostSeason\_40, Bora\_73, Brilliant\_58, Buckeye\_55, Buggy\_38, Burr\_56, Butterscotch\_55, CamL\_56, CampRoach\_58, Cannibal\_56, Carcharodon\_42, Carthage\_54, Caspiboi\_58, Catdawg\_75, Centaur\_37, Chaelin\_57, Chah\_58, Charles1\_57, CharlieGBrown\_56, Charm\_35, CheetO\_55, Cher\_56, Chewbacca\_44, Childish\_56, Chill\_58, ChipMunk\_38, Chorkpop\_56, ChrisnMich\_49, Chunky\_54, Chute\_56, Cobra\_57, Colbert\_54, Coletti\_56, Cooper\_50, Corndog\_78, Cornobble\_55, Cosmolli16\_57, Craff\_59, Crownjwl\_56, Crucio\_36, DaddyDaniels\_58, Daffy\_56, Daka\_58, Dalmatian\_37, DarthP\_72, DarthPhader\_38, Dati\_56, DelRiv\_55, Delton\_57, Derpp\_55, Dewey\_41, Dice\_55, DigitDog\_54, Dignity\_37, Dingo\_54, Dione\_54, DirtJuice\_57, DismalFunk\_39, DismalStressor\_39, Doddsville\_56, DoesntMatter\_54, DonSanchon\_54, Donny\_55, Dori\_57, Drake55\_38, DreamTeam1\_35, DuchessDung\_57, DudeLittle\_35, Duggie\_56, Duplicity\_42, Durga\_58, Dylan\_76, EastView9101\_53, Ein37\_43, Ekdilam\_69, Ellie\_70, ElvisPhasley\_60, Emiris\_58, EmpTee\_55, Epah\_48, Equemioh13\_37, Eremos\_55, Erk16\_55, Etaye\_56, Eugenia\_56, Evanesce\_42, EvilGenius\_38, Fameo\_36, Familton\_76, Fanaw\_48, Fang\_57, Findley\_39, Firecracker\_77, FiringLine\_36, Flare16\_36, FluffyNinja\_57, Forge\_41, FoulBall\_76, Fozzie\_55, Frankicide\_55, Freya\_54, FriarPreacher\_55, Fringe\_60, FugateOSU\_56, Fulbright\_41, Gareth\_56, GaugeLDP\_37, GeneCoco\_56, Georgie2\_37, Gex\_42, Giles\_41, GinPorsche\_48, Giraffe\_57, Giuseppe\_57, Gophee\_57, Grand2040\_56, Gumball\_55, Gwennie1\_56, Gwilliam\_58, Gyarad\_0054, HH92\_42, HSavage\_55, Hadrien\_43, Hail\_41,

Haimas\_55, Haleema\_55, Hally898\_48, Hamish\_55, Hammy\_72, HarryHoudini\_38, Hartsy\_57, Harvey\_55, Heath\_48, Held\_56, Helpful\_59, HenryJackson\_56, Hertubise\_56, Hetaeria\_55, HighStump\_58, Hilltopfarm\_107, Hocus\_56, Horchata\_55, Hurricane\_75, Hydro\_49, Ibrahim\_40, IdentityCrisis\_40, Idergollasper\_75, ImtiyazSitla\_57, Inchworm\_58, Inverness\_55, Iridessa\_58, Iridoclysis\_57, IsaacEli\_57, JAMaL\_49, JDog\_55, JacAttac\_57, JacoRen57\_55, JaguarMi\_51, JakeO\_56, Jamie19\_40, JangDynasty\_75, JangoPhett\_56, Jerm\_37, Jesabah\_56, Jillium\_56, Jiminy\_56, Jiraiya\_59, JoshKayV\_37, JustASigh\_40, KLucky39\_54, Kahve\_56, Kailash\_56, KandZ\_55, KarasumaRum\_54, Katniss\_57, Keitherie\_57, Keshu\_77, Khan1\_57, Kikipoo\_57, Kimbrough\_57, Kinbote\_43, KingCyrus\_38, KingTut\_48, KingVeVeVe\_54, KlimbOn\_55, Kloppinator\_56, Krili\_75, Krueger\_78, Kwadwo\_55, Kwksand96\_56, Labeouficaum\_56, Lambano\_48, Larenn\_37, LasagnaCat\_58, Lasso\_56, LeeLot\_56, Lego3393\_55, Legolas\_58, LeiMonet\_58, LemonSlice\_57, Leviathan\_37, LilHazelNut\_43, LilTurb\_36, Lökk\_39, Lolalove\_50, Longacauda\_57, Lopsy\_53, LostAndPhound\_56, LuckyMarjie\_54, Luke\_43, Lulumae\_54, Lulwa\_54, Lumine\_57, Luna22\_41, MRabcd\_55, MadKillah\_77, Mag7\_56, Magic8\_57, Magpie\_48, Magsby\_42, Malec\_38, Mana\_55, Manad\_55, Mao1\_56, Marcoliusprime\_39, MarkPhew\_75, Marshawn\_72, Maru\_56, Mask\_57, Maskar\_57, Matalotodo\_55, Mcshane\_55, Mecca\_56, Megamind20\_57, Megatron\_57, Melc17\_56, MelsMeow\_56, Melville\_45, Mendokysei\_38, Mesh1\_57, Mesmerelda\_57, MichaelPhcott\_56, MiculUcigas\_36, Miko\_39, Mikota\_54, Milly\_39, MiniBoss\_54, MitKao\_56, Mopey\_57, Morgushi\_56, Mori\_76, Morty\_57, Mosaic\_55, MrPhizzler\_57, Mudslide\_49, Mufasa\_40, Mulan\_56, Murai\_76, Murdoc\_55, Mutante\_56, Mysterious\_54, NaSiaTalie\_36, Nacho\_0057, Nairb\_39, Nanao\_48, Nangang\_54, Nathan\_57, Nehemiah\_53, Newman\_55, Nicole21\_57, NiebruSaylor\_75, Nigel\_50, Nova\_55, November\_72, Numberten\_55, Nyala\_55, OBUpride\_43, OSmaximus\_57, Olak\_55, Oline\_56, Olive\_55, OliverWalter\_55, Omniscient\_57, Oosterbaan\_56, Orfeu\_54, Orion\_57, Orwigg\_57, PB11\_53, PG1\_57, PLOt\_56, Pacifista\_55, Panchino\_39, ParmesanJohn\_42, Penelope2018\_56, Phamished\_57, Pharb\_73, Phareon\_55, PhatCats2014\_57, PhatLouie\_57, Phelemich\_52, PhenghisKhan\_56, Pherdinand\_57, Phergie\_57, Phipps\_56, Phleuron\_56, Phloss\_40, PhrankReynolds\_55, Phrann\_44, Phrappuccino\_28, PhrodoBaggins\_57, Phunky\_55, Piglet\_0056, PinheadLarry\_57, Pinkman\_55, Pipsqueak\_55, Pipsqueaks\_42, Piro94\_36, Pixie\_74, Placalicious\_56, Plmatters\_55, Podrick\_54, Pops\_55, Poster\_48, Potter\_55, Power\_35, Prager\_56, Prickles\_57, Prince\_49, ProfessorX\_55, Puhltonio\_56, QueenB2\_36, QueenBeane\_56, QueenBeesly\_36, Quisquiliae\_57, Rachaly\_39, RawrgerThat\_50, RedMaple\_57, Reprobate\_53, Retro23\_37, Rich\_54, Ricotta\_55, Riggan\_57, Rita130\_53, Robyn\_55, Roliet\_54, RonRayGun\_40, Roscoe\_56, Roy17\_55, Ryadel\_79, SDcharge11\_55, Samaymay\_56, SassyCat97\_55, Schadenfreude\_55, Schnauzer\_43, SchoolBus\_75, Schueller\_57, Schuy\_77, Scitech\_39, Scoot17C\_57, Scrick\_57, Selr12\_56, SemperFi\_37, Serendipitous\_53, Serendipity\_56, Serpentine\_0056, Settecandela\_28, Shadow1\_78, ShedlockHolmes\_77, Sheila\_54, Shenyu\_54, Shida\_75, Shweta\_40, Sigman\_57, Silvafighter\_43, SilverBell\_55, Simielle\_55, SirHarley\_57, SirJeffery\_53, SirPhilip\_73, Skippy\_57, Sknot\_38, Slatt\_57, Smeagan\_38, Smooch\_78, Smurph\_42, SnapTap\_36, Snekmaggedon\_40, Soile\_57, Solosis\_55, Sophia\_55, Soto\_54, Spartan300\_55, SpongeBob\_40, Squid\_56, Squiggle\_57, Stinger\_49, StinkyVeggy\_54, Strobilo\_39, Struggle\_56, Suffolk\_54, Suigeneris\_55, Sunflower1121\_79, Surely\_56, SweetiePie\_36, Swiphy\_58, Swish\_57, Syra333\_77, TBond007\_71, TClif\_75, TM4\_93, TallGrassMM\_56, Tapioca\_44, TarsusIV\_35, TelAviv\_72, Telesworld\_54, Thora\_56, Thoth\_56, ThreeOh3D2\_57, Thunderbird\_55, Timmi\_55, TomBombadil\_56, Tomlarah\_57, Toni\_55, Tooj\_54, Troll4\_56, Trooper\_37, True\_55, Trypo\_58,

Turbido\_36, Typha\_103, TyrionL\_56, UAch1\_55, Ubuntu\_43, UncleHowie\_55, Updawn\_37, Usavi\_56, Vagabond\_76, Vaishali24\_54, Valjean\_55, Vaticameos\_53, Veritas\_57, Vincenzo\_51, VioletZ\_51, Virapocalypse\_57, Virgeve\_55, Visconti\_57, Vista\_55, Vivaldi\_57, Vorrps\_76, Vortex\_56, WaldoWhy\_58, Wallhey\_56, Waterdiva\_56, Webster2\_43, Weher20\_56, WeiHuaDA\_41, Weirido19\_40, Whabigail7\_36, WideWale\_37, Wildflower\_76, Windsor\_56, Winget\_76, Xavier\_55, Xerxes\_42, Ximenita\_79, Xincheng\_50, Yoshand\_57, YouGoGlencoco\_57, YungJamal\_80, Zaider\_56, Zakhe101\_75, Zebo\_74, Zelda\_56, ZenTime222\_39, ZoeJ\_39, Zonia\_57,

### Summary by start number:

#### Start 22:

- Found in 1 of 726 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 653
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MacnCheese\_77 (K3),

#### Start 23:

- Found in 2 of 726 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 653
- Called 50.0% of time when present
- Phage (with cluster) where this start called: JustASigh\_40 (AH),

#### Start 24:

- Found in 1 of 726 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 653
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GaugeLDP\_37 (A2),

#### Start 26:

- Found in 8 of 726 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 4 of 653
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Ashwin\_77 (O), Corndog\_78 (O), Dylan\_76 (O), Firecracker\_77 (O),

#### Start 28:

- Found in 1 of 726 ( 0.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Weirido19\_40 (AH),

#### Start 29:

- Found in 2 of 726 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 2 of 653
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dori\_57 (AD), Mask\_57 (AD),

#### Start 30:

- Found in 42 of 726 ( 5.8% ) of genes in pham
- Manual Annotations of this start: 39 of 653
- Called 95.2% of time when present

- Phage (with cluster) where this start called: Amochick\_43 (Q), Amymech\_43 (Q), Andies\_40 (N), Carcharodon\_42 (N), Chewbacca\_44 (N), Dewey\_41 (Q), Duplicity\_42 (N), Evanesce\_42 (Q), Forge\_41 (Q), Fulbright\_41 (N), Gex\_42 (N), Giles\_41 (Q), HH92\_42 (Q), Hadrien\_43 (Q), Hail\_41 (Q), IdentityCrisis\_40 (singleton), Jamie19\_40 (N), Kinbote\_43 (Q), LilHazelNut\_43 (Q), Luke\_43 (Q), Luna22\_41 (Q), Magsby\_42 (N), Mao1\_56 (AD), Melville\_45 (N), OBUpride\_43 (Q), Panchino\_39 (N), Parmesanjohn\_42 (N), Phloss\_40 (N), Phrann\_44 (N), Pipsqueaks\_42 (N), Schnauzer\_43 (N), Scitech\_39 (N), Shweta\_40 (N), Silvafighter\_43 (N), Smurph\_42 (N), Snekmaggon\_40 (N), SpongeBob\_40 (N), Tapioca\_44 (N), Ubuntu\_43 (Q), Xerxes\_42 (N),

#### Start 32:

- Found in 5 of 726 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 5 of 653
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hurricane\_75 (K3), Keshu\_77 (K3), Pixie\_74 (K3), ShedlockHolmes\_77 (K3), TBond007\_71 (K3),

#### Start 35:

- Found in 17 of 726 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 15 of 653
- Called 88.2% of time when present
- Phage (with cluster) where this start called: BoostSeason\_40 (K2), DismalFunk\_39 (K2), DismalStressor\_39 (K2), Findley\_39 (K2), Ibrahim\_40 (T), Marcoliusprime\_39 (K2), Mendokysei\_38 (T), Milly\_39 (K2), Mufasa\_40 (K2), Nairb\_39 (T), RonRayGun\_40 (T), Strobilo\_39 (K2), TM4\_93 (K2), ZenTime222\_39 (T), ZoeJ\_39 (K2),

#### Start 38:

- Found in 17 of 726 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 15 of 653
- Called 94.1% of time when present
- Phage (with cluster) where this start called: Amohnition\_72 (K6), DarthP\_72 (K6), Ekdilam\_69 (K6), Ellie\_70 (K6), Hammy\_72 (K6), Krueger\_78 (K6), MarkPhew\_75 (K1), Marshawn\_72 (K6), November\_72 (K6), Pharb\_73 (K3), Shadow1\_78 (K6), SirPhilip\_73 (K6), Sunflower1121\_79 (K6), Syra333\_77 (K6), TClif\_75 (K6), Ximenita\_79 (K6),

#### Start 39:

- Found in 17 of 726 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 7 of 653
- Called 82.4% of time when present
- Phage (with cluster) where this start called: Acadian\_54 (B5), Bae\_55 (B5), DigitDog\_54 (B5), Donny\_55 (B5), KarasumaRum\_54 (B5), Mysterious\_54 (B5), Nangang\_54 (B5), Nehemiah\_53 (B5), Phelemich\_52 (B5), Reprobate\_53 (B5), Rich\_54 (B5), Shenyu\_54 (B5), StinkyVeggy\_54 (B5), Suigeneris\_55 (B5),

#### Start 40:

- Found in 27 of 726 ( 3.7% ) of genes in pham
- Manual Annotations of this start: 16 of 653
- Called 96.3% of time when present
- Phage (with cluster) where this start called: AlanGrant\_52 (B4), Antihero\_48 (B4), Apex\_50 (B4), Austelle\_50 (B4), ChrisnMich\_49 (B4), Cooper\_50 (B4), Epah\_48

(B4), Fanaw\_48 (B4), GinPorsche\_48 (B4), Hally898\_48 (B4), Hydro\_49 (B4), JAMaL\_49 (B4), JaguarMi\_51 (B4), Lambano\_48 (B4), Lolalove\_50 (B4), Magpie\_48 (B4), Mudslide\_49 (B4), Nanao\_48 (B4), Nigel\_50 (B4), Poster\_48 (B4), Prince\_49 (B4), RawrgerThat\_50 (B4), Stinger\_49 (B4), Vincenzo\_51 (B4), VioletZ\_51 (B4), Xincheng\_50 (B4),

Start 41:

- Found in 2 of 726 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 2 of 653
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phrappuccino\_28 (AA), Settecandela\_28 (AA),

Start 42:

- Found in 11 of 726 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 653
- Called 9.1% of time when present
- Phage (with cluster) where this start called: JacoRen57\_55 (AB),

Start 43:

- Found in 17 of 726 ( 2.3% ) of genes in pham
- Manual Annotations of this start: 2 of 653
- Called 11.8% of time when present
- Phage (with cluster) where this start called: Ein37\_43 (Q), Webster2\_43 (Q),

Start 45:

- Found in 2 of 726 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 2 of 653
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acolyte\_72 (A2), Aminay\_80 (K7),

Start 46:

- Found in 56 of 726 ( 7.7% ) of genes in pham
- Manual Annotations of this start: 47 of 653
- Called 87.5% of time when present
- Phage (with cluster) where this start called: AbbyPaige\_37 (A2), Agape74\_37 (A2), Anselm\_37 (A2), Baehexic\_36 (A2), Bernal13\_40 (T), Buggy\_38 (A2), Centaur\_37 (A2), Charm\_35 (A9), ChipMunk\_38 (A2), Crucio\_36 (A2), Dalmatian\_37 (A2), DarthPhader\_38 (A12), Dignity\_37 (A2), Drake55\_38 (A2), DreamTeam1\_35 (A9), DudeLittle\_35 (A2), Equemioh13\_37 (A2), EvilGenius\_38 (A2), Fameo\_36 (A2), FiringLine\_36 (A2), Flare16\_36 (A2), Georgie2\_37 (A2), HarryHoudini\_38 (A2), Jerm\_37 (A2), JoshKayV\_37 (A2), KingCyrus\_38 (A2), Larenn\_37 (A2), Leviathan\_37 (A2), LiITurb\_36 (A2), Malec\_38 (A2), MiculUcigas\_36 (A2), NaSiaTalie\_36 (A2), Piro94\_36 (A2), Power\_35 (A2), QueenB2\_36 (A2), QueenBeesly\_36 (A2), Retro23\_37 (A2), SemperFi\_37 (A2), Sknot\_38 (A2), Smeagan\_38 (A2), SnapTap\_36 (A2), SweetiePie\_36 (A2), TarsusIV\_35 (A2), Trooper\_37 (A2), Turbido\_36 (A2), Updawg\_37 (A2), WeiHuaDA\_41 (A2), Whabigail7\_36 (A2), WideWale\_37 (A2),

Start 48:

- Found in 30 of 726 ( 4.1% ) of genes in pham
- Manual Annotations of this start: 24 of 653
- Called 86.7% of time when present

- Phage (with cluster) where this start called: Alkhayr\_73 (O), Blessica\_76 (O), Bora\_73 (O), Catdawg\_75 (O), Familton\_76 (O), FoulBall\_76 (O), Idergollasper\_75 (O), JangDynasty\_75 (O), Krili\_75 (O), MadKillah\_77 (O), Mori\_76 (O), Murai\_76 (O), NiebruSaylor\_75 (O), Ryadel\_79 (O), SchoolBus\_75 (O), Schuy\_77 (O), Shida\_75 (O), Smooch\_78 (O), TelAviv\_72 (O), Vagabond\_76 (O), Vorrps\_76 (O), Wildflower\_76 (O), Winget\_76 (O), YungJamal\_80 (O), Zakhe101\_75 (O), Zebo\_74 (O),

Start 49:

- Found in 8 of 726 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 653
- Called 50.0% of time when present
- Phage (with cluster) where this start called: EastView9101\_53 (B5), Rita130\_53 (B5), Serendipitous\_53 (B5), SirJeffery\_53 (B5),

Start 50:

- Found in 3 of 726 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 2 of 653
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AuntGwenStacy\_104 (Y), Hilltopfarm\_107 (Y), Typha\_103 (Y),

Start 52:

- Found in 22 of 726 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 21 of 653
- Called 95.5% of time when present
- Phage (with cluster) where this start called: Adjutor\_55 (D1), BigMama\_54 (D1), Butterscotch\_55 (D1), Chill\_58 (D1), Delton\_57 (D1), Erk16\_55 (D1), Giuseppe\_57 (D1), Gumball\_55 (D1), Helpful\_59 (D1), KandZ\_55 (D1), Mopey\_57 (D1), Nova\_55 (D1), PB11\_53 (D1), PLOT\_56 (D1), Penelope2018\_56 (D1), Prager\_56 (D1), SirHarley\_57 (D1), Thoth\_56 (D1), Troll4\_56 (D1), Visconti\_57 (D1), WaldoWhy\_58 (D1),

Start 55:

- Found in 282 of 726 ( 38.8% ) of genes in pham
- Manual Annotations of this start: 157 of 653
- Called 62.4% of time when present
- Phage (with cluster) where this start called: Aelin\_55 (B1), Altwerkus\_54 (B1), Anderson\_57 (B1), Apizium\_55 (B1), Ashraf\_57 (B1), Banjo\_55 (B1), Basato\_56 (B1), BatteryCK\_56 (B1), Bishoperium\_56 (B1), BlackStallion\_57 (B1), BlueHusk\_57 (B1), Bluephacebaby\_56 (B1), Brilliant\_58 (B1), Buckeye\_55 (B1), CamL\_56 (B1), CampRoach\_58 (B1), Cannibal\_56 (B1), Carthage\_54 (B1), Caspiboi\_58 (B1), Chaelin\_57 (B1), Charles1\_57 (B1), CheetO\_55 (B1), Childish\_56 (B1), Chorkpop\_56 (B1), Chunky\_54 (B1), Chute\_56 (B1), Coletti\_56 (B1), Cornobble\_55 (B1), Cosmolli16\_57 (B1), Craff\_59 (B1), Daffy\_56 (B1), Dione\_54 (B1), Doddsville\_56 (B1), DonSanchon\_54 (B1), Durga\_58 (B1), ElvisPhasley\_60 (B1), Emiris\_58 (B1), EmpTee\_55 (B1), Etaye\_56 (B1), Fozzie\_55 (B1), FriarPreacher\_55 (B1), Fringe\_60 (B1), Gareth\_56 (B1), GeneCoco\_56 (B1), Giraffe\_57 (B1), Gophee\_57 (B1), Gwennie1\_56 (B1), Gwilliam\_58 (B1), Gyrad\_0054 (B1), Haimas\_55 (B1), Haleema\_55 (B1), Hamish\_55 (B1), Hartsy\_57 (B1), Harvey\_55 (B1), Hertubise\_56 (B1), HighStump\_58 (B1), Horchata\_55 (B1), ImtiyazSittla\_57 (B1), Inchworm\_58 (B1), Inverness\_55 (B1), Iridessa\_58 (B1), JacAttac\_57 (B1), JakeO\_56 (B1), JangoPhett\_56 (B1), Jesabah\_56 (B1), Jillium\_56 (B1), Jiraiya\_59 (B1),

KLUcky39\_54 (B1), Kahve\_56 (B1), Kailash\_56 (B1), Katniss\_57 (B1), Keitherie\_57 (B1), Khan1\_57 (B1), Kikipoo\_57 (B1), Kimbrough\_57 (B1), KingTut\_48 (B1), KingVeVeVe\_54 (B1), Kwadwo\_55 (B1), LasagnaCat\_58 (B1), Lasso\_56 (B1), LeeLot\_56 (B1), Lego3393\_55 (B1), Legolas\_58 (B1), LeiMonet\_58 (B1), LemonSlice\_57 (B1), Longacauda\_57 (B1), LostAndPhound\_56 (B1), LuckyMarjie\_54 (B1), Lulumae\_54 (B1), Lulwa\_54 (B1), Lumine\_57 (B1), MRabcd\_55 (B1), Mag7\_56 (B1), Mana\_55 (B1), Manad\_55 (B1), Maskar\_57 (B1), Matalotodo\_55 (B1), Mecca\_56 (B1), Megamind20\_57 (B1), Megatron\_57 (B1), MelsMeow\_56 (B1), Mesmerelda\_57 (B1), Morty\_57 (B1), Mosaic\_55 (B1), MrPhizzler\_57 (B1), Nacho\_0057 (B1), Nathan\_57 (B1), Newman\_55 (B1), Numberben\_55 (B1), OSmaximus\_57 (B1), Oline\_56 (B1), Olive\_55 (B1), OliverWalter\_55 (B1), Omniscient\_57 (B1), Orwigg\_57 (B1), Phareon\_55 (B1), PhatCats2014\_57 (B1), PhatLouie\_57 (B1), Pherdinand\_57 (B1), Phipps\_56 (B1), PhrankReynolds\_55 (B1), Phunky\_55 (B1), Piglet\_0056 (B1), Pinkman\_55 (B1), Pipsqueak\_55 (B1), Plmatters\_55 (B1), Pops\_55 (B1), Potter\_55 (B1), Prickles\_57 (B1), Puhltonio\_56 (B1), QueenBeane\_56 (B1), RedMaple\_57 (B1), Riggan\_57 (B1), Robyn\_55 (B1), Roliet\_54 (B1), Roscoe\_56 (B1), Roy17\_55 (B1), SDcharge11\_55 (B1), Samaymay\_56 (B1), SassyCat97\_55 (B1), Schueller\_57 (B1), Scrick\_57 (B1), Serpentine\_0056 (B1), SilverBell\_55 (B1), Solosis\_55 (B1), Sophia\_55 (B1), Soto\_54 (B1), Spartan300\_55 (B1), Squid\_56 (B1), Struggle\_56 (B1), Suffolk\_54 (B1), Surely\_56 (B1), Swiphy\_58 (B1), TallGrassMM\_56 (B1), Telesworld\_54 (B1), Thora\_56 (B1), ThreeOh3D2\_57 (B1), TomBombadil\_56 (B1), Toni\_55 (B1), Tooj\_54 (B1), Trypo\_58 (B1), UncleHowie\_55 (B1), Vaishali24\_54 (B1), Valjean\_55 (B1), Vaticameos\_53 (B1), Veritas\_57 (B1), Virgeve\_55 (B1), Vista\_55 (B1), Vortex\_56 (B1), Wallhey\_56 (B1), Windsor\_56 (B1), Xavier\_55 (B1), Yoshand\_57 (B1), YouGoGlencoco\_57 (B1), Zaider\_56 (B1), Zelda\_56 (B1),

Start 57:

- Found in 282 of 726 ( 38.8% ) of genes in pham
- Manual Annotations of this start: 105 of 653
- Called 37.6% of time when present
- Phage (with cluster) where this start called: ABU\_57 (B1), AbsoluteMadLad\_55 (B1), Adriana\_57 (B1), AltPhacts\_55 (B1), Andre\_58 (B1), AngelCake\_55 (B1), Antonia\_55 (B1), Badfish\_57 (B1), Beaglebox\_56 (B1), Boehler\_55 (B1), Burr\_56 (B1), Chah\_58 (B1), CharlieGBrown\_56 (B1), Cher\_56 (B1), Cobra\_57 (B1), Colbert\_54 (B1), Crownjwl\_56 (B1), DaddyDaniels\_58 (B1), Daka\_58 (B1), Dati\_56 (B1), DelRivs\_55 (B1), Derpp\_55 (B1), Dice\_55 (B1), Dingo\_54 (B1), DirtJuice\_57 (B1), DoesntMatter\_54 (B1), DuchessDung\_57 (B1), Duggie\_56 (B1), Eremos\_55 (B1), Eugenia\_56 (B1), Fang\_57 (B1), FluffyNinja\_57 (B1), Frankicide\_55 (B1), Freya\_54 (B1), FugateOSU\_56 (B1), Grand2040\_56 (B1), HSavage\_55 (B1), Held\_56 (B1), HenryJackson\_56 (B1), Hetaeria\_55 (B1), Hocus\_56 (B1), Iridoclysis\_57 (B1), IsaacEli\_57 (B1), JDog\_55 (B1), Jiminy\_56 (B1), KlimbOn\_55 (B1), Kloppinator\_56 (B1), Kwksand96\_56 (B1), Labeouficaum\_56 (B1), Lopsy\_53 (B1), Magic8\_57 (B1), Maru\_56 (B1), Mcshane\_55 (B1), Melc17\_56 (B1), Mesh1\_57 (B1), MichaelPhcott\_56 (B1), Mikota\_54 (B1), MiniBoss\_54 (B1), MitKao\_56 (B1), Morgushi\_56 (B1), Mulan\_56 (B1), Murdoc\_55 (B1), Mutante\_56 (B1), Nicole21\_57 (B1), Nyala\_55 (B1), Olak\_55 (B1), Oosterbaan\_56 (B1), Orfeu\_54 (B1), Orion\_57 (B1), PG1\_57 (B1), Pacifista\_55 (B1), Phamished\_57 (B1), PhenghisKhan\_56 (B1), Phergie\_57 (B1), Phleuron\_56 (B1), PhrodoBaggins\_57 (B1), PinheadLarry\_57 (B1), Placalicious\_56 (B1), Podrick\_54 (B1), ProfessorX\_55 (B1), Quisquilliae\_57 (B1), Ricotta\_55 (B1), Schadenfreude\_55 (B1), Scoot17C\_57 (B1), Selr12\_56 (B1), Serendipity\_56 (B1), Sheila\_54 (B1), Sigman\_57 (B1), Simielle\_55 (B1), Skippy\_57 (B1), Slatt\_57 (B1), Soile\_57 (B1), Squiggle\_57 (B1), Swish\_57 (B1), Thunderbird\_55 (B1), Timmi\_55

(B1), Tomlarah\_57 (B1), True\_55 (B1), TyrionL\_56 (B1), UAch1\_55 (B1), Usavi\_56 (B1), Virapocalypse\_57 (B1), Vivaldi\_57 (B1), Waterdiva\_56 (B1), Weher20\_56 (B1), Zonia\_57 (B1),

Start 58:

- Found in 203 of 726 ( 28.0% ) of genes in pham
- Manual Annotations of this start: 177 of 653
- Called 99.5% of time when present
- Phage (with cluster) where this start called: Ablatia\_24 (C1), Ading\_26 (C1), Adlitam\_26 (C1), Alice\_21 (C1), Amataga\_26 (C1), ArcherS7\_25 (C1), Asterius\_24 (C1), Astraea\_27 (C1), Atlantean\_26 (C1), Audrick\_28 (C1), Ava3\_27 (C1), Babyland\_25 (C1), BackyardAgain\_23 (C1), BadAgartude\_27 (C1), BananaFence\_27 (C1), Bangla1971\_25 (C1), Basquiat\_25 (C1), BeanWater\_22 (C1), Beckerton\_70 (H1), Belieber\_22 (C1), BigCity\_30 (C1), Bigswole\_32 (C1), Bipolarisk\_25 (C1), Blackbrain\_24 (C1), Blackdragon\_21 (C1), Blubba\_20 (C1), Bonray\_26 (C1), Bread\_27 (C1), Breeniome\_26 (C1), Burrough\_26 (C1), Bxz1\_27 (C1), Cactojaque\_23 (C1), Cali\_26 (C1), Cane17\_19 (C1), Capablanca\_28 (C1), Caravan\_24 (C1), Catera\_24 (C1), Cborch11\_73 (H1), Chargie21\_25 (C1), CharlieB\_26 (C1), ChaylaJr\_25 (C1), ChickenPhender\_25 (C1), Chomp\_26 (C1), CindyLou\_26 (C1), Colt\_19 (C1), Concombre\_25 (C1), DTDevon\_27 (C1), Daffodil\_28 (C1), Damien\_71 (H1), Dandelion\_30 (C1), Darko\_25 (C1), Delilah\_26 (C1), Delylah\_27 (C1), Demodog\_24 (C1), Derek\_27 (C1), Dietrick\_21 (C1), DirtMonster\_25 (C1), Domi\_21 (C1), DrPhinkDaddy\_26 (C1), Drazdys\_26 (C1), ET08\_21 (C1), EasyJones\_25 (C1), EggyFarm\_30 (C1), EmToTheThree\_29 (C1), EmmaElysia\_24 (C1), Erdmann\_27 (C1), ErnieJ\_27 (C1), Essence\_25 (C1), Ewok\_26 (C1), Flabslab\_27 (C1), Fludd\_25 (C1), FoxtrotP1\_26 (C1), FrayBell\_32 (C1), FudgeTart\_27 (C1), Gabriel\_26 (C1), Gangam\_26 (C1), Ghost\_26 (C1), Gizmo\_28 (C1), GlutenPhree\_24 (C1), Grasshills\_30 (C1), Grungle\_19 (C1), Guwapp\_26 (C1), Halldule\_22 (C1), HyRo\_25 (C1), I3\_28 (C1), IkeLoa\_22 (C1), InigoMontoya\_27 (C1), InterFolia\_33 (C1), Iota\_23 (C1), Issimir\_26 (C1), Izajani\_27 (C1), JPickles\_24 (C1), Janiyr\_26 (C1), JayJay\_27 (C1), Jaygup\_26 (C1), Jedediah\_26 (C1), Jemmno\_26 (C1), Jessibeth14\_25 (C1), Jezreel\_25 (C1), JigglyPuff\_26 (C1), JulietS\_21 (C1), JustHall\_25 (C1), Kamryn\_26 (C1), Kboogie\_26 (C1), Khaleesi\_25 (C1), Koguma\_22 (C1), Konstantine\_75 (H1), LRRHood\_23 (C1), Latch\_26 (C1), Lee7\_25 (C1), Lethe\_25 (C1), LifeSavor\_27 (C1), LinStu\_26 (C1), Littleton\_26 (C1), Loanshark\_26 (C1), LolaVince\_29 (C1), LordLeafolot\_31 (C1), Lukilu\_19 (C1), Maby2021\_27 (C1), Mangeria\_29 (C1), Matsumoto\_25 (C1), McGee\_25 (C1), McWolfish\_25 (C1), Megamind\_26 (C1), Megatron06\_72 (H1), Melpomini\_25 (C1), MikeLiesIn\_26 (C1), Mikro\_24 (C1), MoMoMixon\_27 (C1), Momo\_25 (C1), Morizzled23\_25 (C1), Naija\_26 (C1), Napoleon13\_25 (C1), Nappy\_27 (C1), Naval22\_28 (C1), NedWong\_27 (C1), Ngannou\_24 (C1), Nidhogg\_27 (C1), NoodleTree\_25 (C1), Norm\_26 (C1), NuevoMundo\_29 (C1), Oaker\_71 (H1), ParkTD\_25 (C1), Patter\_26 (C1), Phlegm\_28 (C1), Phox\_25 (C1), Phreeze\_70 (H1), Phusco\_26 (C1), Pier\_28 (C1), Pinkcreek\_18 (C1), Pio\_29 (C1), Pivoine\_26 (C1), Pleione\_28 (C1), Puissant\_72 (H1), PurduePete\_25 (C1), QBert\_24 (C1), Quasimodo\_26 (C1), Rabinovish\_25 (C1), Rahel\_26 (C1), Rizal\_24 (C1), RoMag\_21 (C1), Ronan\_21 (C1), Roots515\_26 (C1), SVoro\_25 (C1), Salacia\_28 (C1), Sauce\_27 (C1), ScottMcG\_26 (C1), Sebata\_26 (C1), Shaqnato\_22 (C1), Shelob\_28 (C1), ShiaLabeouf\_26 (C1), Shifa\_23 (C1), Shnickers\_26 (C1), Shrimp\_26 (C1), SilverDipper\_27 (C1), SmallFry\_26 (C1), Spec\_24 (C1), Specks\_31 (C1), Sprinklers\_26 (C1), Spud\_28 (C1), SrishMeg2525\_25 (C1), StephanieG\_26 (C1), StubbySaigey\_25 (C1), Stubby\_24 (C1), Tainan\_31 (C1), Teardrop\_25 (C1), Thumb\_72 (H1), TinyTim\_26 (C1), Tortoise16\_25 (C1), Trinitium\_25 (C1), Turret\_24



(C1), Tyke\_28 (C1), ValleyTerrace\_26 (C1), Wally\_25 (C1), Willis\_26 (C1), Yassified\_23 (C1), YemiJoy2021\_27 (C1), YoungMoneyMata\_26 (C1), Yucca\_26 (C1), Zalkecks\_28 (C1), Zeenon\_28 (C1), ZygoTaiga\_26 (C1),

Start 62:

- Found in 7 of 726 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 4 of 653
- Called 57.1% of time when present
- Phage (with cluster) where this start called: BobSwaget\_38 (A2), Lokk\_39 (A2), Miko\_39 (A2), Rachaly\_39 (A2),

Start 72:

- Found in 1 of 726 ( 0.1% ) of genes in pham
- Manual Annotations of this start: 1 of 653
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Heath\_48 (B4),

Start 78:

- Found in 22 of 726 ( 3.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 4.5% of time when present
- Phage (with cluster) where this start called: Ahwei\_48 (B4),

### **Summary by clusters:**

There are 24 clusters represented in this pham: singleton, K3, K2, K1, K7, K6, A12, A2, A9, C1, AA, AB, AD, AH, O, N, Q, T, Y, H1, B4, B5, B1, D1,

Info for manual annotations of cluster A12:

- Start number 46 was manually annotated 1 time for cluster A12.

Info for manual annotations of cluster A2:

- Start number 24 was manually annotated 1 time for cluster A2.
- Start number 45 was manually annotated 1 time for cluster A2.
- Start number 46 was manually annotated 43 times for cluster A2.
- Start number 62 was manually annotated 4 times for cluster A2.

Info for manual annotations of cluster A9:

- Start number 46 was manually annotated 2 times for cluster A9.

Info for manual annotations of cluster AA:

- Start number 41 was manually annotated 2 times for cluster AA.

Info for manual annotations of cluster AB:

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

Info for manual annotations of cluster AD:

- Start number 29 was manually annotated 2 times for cluster AD.
- Start number 30 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster AH:

- Start number 23 was manually annotated 1 time for cluster AH.

Info for manual annotations of cluster B1:

- Start number 55 was manually annotated 157 times for cluster B1.
- Start number 57 was manually annotated 105 times for cluster B1.

Info for manual annotations of cluster B4:

- Start number 40 was manually annotated 16 times for cluster B4.
- Start number 72 was manually annotated 1 time for cluster B4.

Info for manual annotations of cluster B5:

- Start number 39 was manually annotated 7 times for cluster B5.
- Start number 49 was manually annotated 2 times for cluster B5.

Info for manual annotations of cluster C1:

- Start number 58 was manually annotated 169 times for cluster C1.

Info for manual annotations of cluster D1:

- Start number 52 was manually annotated 21 times for cluster D1.

Info for manual annotations of cluster H1:

- Start number 58 was manually annotated 8 times for cluster H1.

Info for manual annotations of cluster K1:

- Start number 38 was manually annotated 1 time for cluster K1.

Info for manual annotations of cluster K2:

- Start number 35 was manually annotated 10 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 22 was manually annotated 1 time for cluster K3.
- Start number 32 was manually annotated 5 times for cluster K3.
- Start number 38 was manually annotated 1 time for cluster K3.

Info for manual annotations of cluster K6:

- Start number 38 was manually annotated 13 times for cluster K6.

Info for manual annotations of cluster K7:

- Start number 45 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster N:

- Start number 30 was manually annotated 22 times for cluster N.

Info for manual annotations of cluster O:

- Start number 26 was manually annotated 4 times for cluster O.
- Start number 48 was manually annotated 24 times for cluster O.

Info for manual annotations of cluster Q:

- Start number 30 was manually annotated 15 times for cluster Q.
- Start number 43 was manually annotated 2 times for cluster Q.

Info for manual annotations of cluster T:

- Start number 35 was manually annotated 5 times for cluster T.
- Start number 46 was manually annotated 1 time for cluster T.

Info for manual annotations of cluster Y:

•Start number 50 was manually annotated 2 times for cluster Y.

**Gene Information:**

Gene: ABU\_57 Start: 48858, Stop: 48490, Start Num: 57

Candidate Starts for ABU\_57:

(14, 49062), (16, 49017), (18, 48987), (Start: 55 @48861 has 157 MA's), (Start: 57 @48858 has 105 MA's), (73, 48819), (88, 48738), (109, 48576), (110, 48573), (121, 48522),

Gene: AbbyPaige\_37 Start: 27571, Stop: 27951, Start Num: 46

Candidate Starts for AbbyPaige\_37:

(Start: 46 @27571 has 47 MA's), (85, 27652), (100, 27760), (106, 27811), (111, 27841), (131, 27928),

Gene: Ablatia\_24 Start: 7873, Stop: 8229, Start Num: 58

Candidate Starts for Ablatia\_24:

(Start: 58 @7873 has 177 MA's), (89, 7987), (102, 8080), (121, 8176),

Gene: AbsoluteMadLad\_55 Start: 48570, Stop: 48202, Start Num: 57

Candidate Starts for AbsoluteMadLad\_55:

(14, 48774), (16, 48729), (18, 48699), (34, 48612), (Start: 55 @48573 has 157 MA's), (Start: 57 @48570 has 105 MA's), (73, 48531), (88, 48450), (109, 48288), (110, 48285), (121, 48234),

Gene: Acadian\_54 Start: 48515, Stop: 48102, Start Num: 39

Candidate Starts for Acadian\_54:

(11, 48794), (Start: 39 @48515 has 7 MA's), (105, 48242), (112, 48197), (113, 48194), (120, 48167),

Gene: Acolyte\_72 Start: 45510, Stop: 45139, Start Num: 45

Candidate Starts for Acolyte\_72:

(15, 45657), (21, 45597), (Start: 35 @45528 has 15 MA's), (Start: 45 @45510 has 2 MA's), (51, 45501), (70, 45459), (86, 45399), (111, 45222), (116, 45198), (121, 45171),

Gene: Ading\_26 Start: 8133, Stop: 8489, Start Num: 58

Candidate Starts for Ading\_26:

(Start: 58 @8133 has 177 MA's), (89, 8247), (102, 8340), (121, 8436),

Gene: Adjutor\_55 Start: 42662, Stop: 43042, Start Num: 52

Candidate Starts for Adjutor\_55:

(Start: 52 @42662 has 21 MA's), (68, 42695), (69, 42698), (70, 42701), (84, 42755), (85, 42758), (101, 42878), (121, 42989), (122, 42992),

Gene: Adlitam\_26 Start: 8150, Stop: 8506, Start Num: 58

Candidate Starts for Adlitam\_26:

(Start: 58 @8150 has 177 MA's), (89, 8264), (102, 8357), (121, 8453),

Gene: Adriana\_57 Start: 48855, Stop: 48487, Start Num: 57

Candidate Starts for Adriana\_57:

(14, 49059), (16, 49014), (18, 48984), (Start: 55 @48858 has 157 MA's), (Start: 57 @48855 has 105 MA's), (73, 48816), (88, 48735), (109, 48573), (110, 48570), (121, 48519),

Gene: Aelin\_55 Start: 48137, Stop: 47766, Start Num: 55

Candidate Starts for Aelin\_55:

(14, 48338), (16, 48293), (18, 48263), (34, 48176), (Start: 55 @48137 has 157 MA's), (Start: 57 @48134 has 105 MA's), (73, 48095), (87, 48023), (88, 48014), (109, 47852), (110, 47849), (121, 47798),

Gene: Agape74\_37 Start: 27547, Stop: 27945, Start Num: 46

Candidate Starts for Agape74\_37:

(Start: 46 @27547 has 47 MA's), (Start: 52 @27556 has 21 MA's), (111, 27838), (112, 27844), (120, 27874),

Gene: Ahwei\_48 Start: 47074, Stop: 46748, Start Num: 78

Candidate Starts for Ahwei\_48:

(Start: 40 @47146 has 16 MA's), (66, 47098), (67, 47095), (78, 47074), (115, 46828), (123, 46792),

Gene: AlanGrant\_52 Start: 48916, Stop: 48518, Start Num: 40

Candidate Starts for AlanGrant\_52:

(Start: 40 @48916 has 16 MA's), (65, 48871), (66, 48868), (82, 48826), (111, 48619),

Gene: Alice\_21 Start: 7231, Stop: 7587, Start Num: 58

Candidate Starts for Alice\_21:

(Start: 58 @7231 has 177 MA's), (102, 7438), (121, 7534),

Gene: Alkhayr\_73 Start: 47301, Stop: 46924, Start Num: 48

Candidate Starts for Alkhayr\_73:

(Start: 48 @47301 has 24 MA's), (74, 47241), (79, 47229), (89, 47166), (102, 47073), (104, 47067), (107, 47022), (118, 46977), (125, 46938), (127, 46935),

Gene: AltPhacts\_55 Start: 47883, Stop: 47515, Start Num: 57

Candidate Starts for AltPhacts\_55:

(14, 48087), (16, 48042), (18, 48012), (34, 47925), (Start: 55 @47886 has 157 MA's), (Start: 57 @47883 has 105 MA's), (73, 47844), (87, 47772), (88, 47763), (109, 47601), (110, 47598), (121, 47547),

Gene: Altwerkus\_54 Start: 48025, Stop: 47654, Start Num: 55

Candidate Starts for Altwerkus\_54:

(14, 48226), (16, 48181), (18, 48151), (Start: 55 @48025 has 157 MA's), (Start: 57 @48022 has 105 MA's), (73, 47983), (88, 47902), (109, 47740), (110, 47737), (121, 47686),

Gene: Amataga\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for Amataga\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Aminay\_80 Start: 51264, Stop: 51629, Start Num: 45

Candidate Starts for Aminay\_80:

(3, 50760), (10, 50946), (Start: 45 @51264 has 2 MA's), (92, 51402), (120, 51579), (121, 51594),

Gene: Amochick\_43 Start: 33322, Stop: 32897, Start Num: 30

Candidate Starts for Amochick\_43:

(17, 33415), (Start: 23 @33361 has 1 MA's), (Start: 30 @33322 has 39 MA's), (Start: 43 @33298 has 2 MA's), (65, 33256), (66, 33253), (74, 33232), (81, 33211), (85, 33181), (99, 33079), (120, 32965), (121, 32950), (122, 32947), (128, 32926), (136, 32905),

Gene: Amohnition\_72 Start: 50158, Stop: 50541, Start Num: 38

Candidate Starts for Amohnition\_72:

(Start: 38 @50158 has 15 MA's), (Start: 42 @50164 has 1 MA's), (69, 50218), (91, 50305), (96, 50344), (102, 50380), (117, 50473), (120, 50482),

Gene: Amymech\_43 Start: 33316, Stop: 32891, Start Num: 30

Candidate Starts for Amymech\_43:

(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: Anderson\_57 Start: 48597, Stop: 48226, Start Num: 55

Candidate Starts for Anderson\_57:

(14, 48798), (16, 48753), (18, 48723), (Start: 55 @48597 has 157 MA's), (Start: 57 @48594 has 105 MA's), (73, 48555), (88, 48474), (109, 48312), (110, 48309), (121, 48258),

Gene: Andies\_40 Start: 29966, Stop: 30364, Start Num: 30

Candidate Starts for Andies\_40:

(Start: 30 @29966 has 39 MA's), (60, 30017), (66, 30032), (102, 30215), (104, 30221), (112, 30272), (119, 30293), (120, 30296), (121, 30311), (128, 30335), (133, 30350), (135, 30353),

Gene: Andre\_58 Start: 48770, Stop: 48402, Start Num: 57

Candidate Starts for Andre\_58:

(14, 48974), (16, 48929), (18, 48899), (Start: 55 @48773 has 157 MA's), (Start: 57 @48770 has 105 MA's), (73, 48731), (88, 48650), (109, 48488), (110, 48485), (121, 48434),

Gene: AngelCake\_55 Start: 48655, Stop: 48287, Start Num: 57

Candidate Starts for AngelCake\_55:

(14, 48859), (16, 48814), (18, 48784), (Start: 55 @48658 has 157 MA's), (Start: 57 @48655 has 105 MA's), (73, 48616), (88, 48535), (109, 48373), (110, 48370), (121, 48319),

Gene: Anselm\_37 Start: 27656, Stop: 28039, Start Num: 46

Candidate Starts for Anselm\_37:

(Start: 46 @27656 has 47 MA's), (85, 27740), (100, 27848), (106, 27899), (111, 27929), (131, 28016),

Gene: Antihero\_48 Start: 47146, Stop: 46748, Start Num: 40

Candidate Starts for Antihero\_48:

(Start: 40 @47146 has 16 MA's), (66, 47098), (67, 47095), (78, 47074), (115, 46828), (123, 46792),

Gene: Antonia\_55 Start: 48134, Stop: 47766, Start Num: 57

Candidate Starts for Antonia\_55:

(14, 48338), (16, 48293), (18, 48263), (34, 48176), (Start: 55 @48137 has 157 MA's), (Start: 57 @48134 has 105 MA's), (73, 48095), (87, 48023), (88, 48014), (109, 47852), (110, 47849), (121, 47798),

Gene: Apex\_50 Start: 48386, Stop: 47988, Start Num: 40

Candidate Starts for Apex\_50:

(5, 48719), (Start: 40 @48386 has 16 MA's), (66, 48338), (67, 48335), (78, 48314), (111, 48089), (115, 48068), (123, 48032),

Gene: Apizium\_55 Start: 47731, Stop: 47360, Start Num: 55

Candidate Starts for Apizium\_55:

(14, 47932), (16, 47887), (18, 47857), (34, 47770), (Start: 55 @47731 has 157 MA's), (Start: 57 @47728 has 105 MA's), (73, 47689), (87, 47617), (109, 47446), (110, 47443), (121, 47392),

Gene: ArcherS7\_25 Start: 8150, Stop: 8506, Start Num: 58

Candidate Starts for ArcherS7\_25:

(Start: 58 @8150 has 177 MA's), (89, 8264), (102, 8357), (121, 8453),

Gene: Ashraf\_57 Start: 48338, Stop: 47967, Start Num: 55

Candidate Starts for Ashraf\_57:

(8, 48698), (14, 48539), (16, 48494), (18, 48464), (Start: 55 @48338 has 157 MA's), (Start: 57 @48335 has 105 MA's), (73, 48296), (80, 48278), (87, 48224), (88, 48215), (109, 48053), (110, 48050), (121, 47999),

Gene: Ashwin\_77 Start: 48095, Stop: 47670, Start Num: 26

Candidate Starts for Ashwin\_77:

(Start: 26 @48095 has 4 MA's), (Start: 48 @48047 has 24 MA's), (74, 47987), (79, 47975), (89, 47912), (102, 47819), (104, 47813), (107, 47768), (118, 47723), (125, 47684), (127, 47681),

Gene: Asterius\_24 Start: 8422, Stop: 8778, Start Num: 58

Candidate Starts for Asterius\_24:

(Start: 58 @8422 has 177 MA's), (89, 8536), (102, 8629), (121, 8725),

Gene: Astraea\_27 Start: 8327, Stop: 8683, Start Num: 58

Candidate Starts for Astraea\_27:

(Start: 58 @8327 has 177 MA's), (102, 8534), (121, 8630),

Gene: Atlantean\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for Atlantean\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Audrick\_28 Start: 8133, Stop: 8489, Start Num: 58

Candidate Starts for Audrick\_28:

(Start: 58 @8133 has 177 MA's), (89, 8247), (102, 8340), (121, 8436),

Gene: AuntGwenStacy\_104 Start: 64757, Stop: 65095, Start Num: 50

Candidate Starts for AuntGwenStacy\_104:

(Start: 50 @64757 has 2 MA's), (56, 64769), (74, 64808), (75, 64811), (104, 64967),

Gene: Austelle\_50 Start: 48836, Stop: 48438, Start Num: 40

Candidate Starts for Austelle\_50:

(Start: 40 @48836 has 16 MA's), (66, 48788), (67, 48785), (78, 48764), (111, 48539), (115, 48518), (123, 48482),

Gene: Ava3\_27 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for Ava3\_27:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Babyland\_25 Start: 7595, Stop: 7951, Start Num: 58

Candidate Starts for Babyland\_25:

(Start: 58 @7595 has 177 MA's), (102, 7802), (121, 7898),

Gene: BackyardAgain\_23 Start: 7579, Stop: 7935, Start Num: 58

Candidate Starts for BackyardAgain\_23:

(Start: 58 @7579 has 177 MA's), (89, 7693), (102, 7786), (121, 7882),

Gene: BadAgartude\_27 Start: 8789, Stop: 9145, Start Num: 58

Candidate Starts for BadAgartude\_27:

(Start: 58 @8789 has 177 MA's), (102, 8996), (121, 9092),

Gene: Badfish\_57 Start: 48880, Stop: 48512, Start Num: 57

Candidate Starts for Badfish\_57:

(14, 49084), (16, 49039), (18, 49009), (Start: 55 @48883 has 157 MA's), (Start: 57 @48880 has 105 MA's), (73, 48841), (88, 48760), (109, 48598), (110, 48595), (121, 48544),

Gene: Bae\_55 Start: 49794, Stop: 49378, Start Num: 39

Candidate Starts for Bae\_55:

(4, 50172), (6, 50127), (7, 50124), (11, 50073), (Start: 39 @49794 has 7 MA's), (Start: 49 @49776 has 2 MA's), (73, 49722), (123, 49422), (136, 49389),

Gene: Baehexic\_36 Start: 27724, Stop: 28119, Start Num: 46

Candidate Starts for Baehexic\_36:

(Start: 46 @27724 has 47 MA's), (106, 27982), (111, 28012), (120, 28048),

Gene: BananaFence\_27 Start: 8586, Stop: 8942, Start Num: 58

Candidate Starts for BananaFence\_27:

(Start: 58 @8586 has 177 MA's), (102, 8793), (121, 8889),

Gene: Bangla1971\_25 Start: 8150, Stop: 8506, Start Num: 58

Candidate Starts for Bangla1971\_25:

(Start: 58 @8150 has 177 MA's), (89, 8264), (102, 8357), (121, 8453),

Gene: Banjo\_55 Start: 48330, Stop: 47959, Start Num: 55

Candidate Starts for Banjo\_55:

(14, 48531), (16, 48486), (18, 48456), (Start: 55 @48330 has 157 MA's), (Start: 57 @48327 has 105 MA's), (73, 48288), (87, 48216), (109, 48045), (110, 48042), (121, 47991),

Gene: Basato\_56 Start: 48605, Stop: 48234, Start Num: 55

Candidate Starts for Basato\_56:

(14, 48806), (16, 48761), (18, 48731), (34, 48644), (Start: 55 @48605 has 157 MA's), (Start: 57 @48602 has 105 MA's), (73, 48563), (88, 48482), (109, 48320), (110, 48317), (121, 48266),

Gene: Basquiat\_25 Start: 7576, Stop: 7932, Start Num: 58

Candidate Starts for Basquiat\_25:

(Start: 58 @7576 has 177 MA's), (102, 7783), (121, 7879),

Gene: BatteryCK\_56 Start: 48278, Stop: 47907, Start Num: 55

Candidate Starts for BatteryCK\_56:

(8, 48638), (14, 48479), (16, 48434), (18, 48404), (Start: 55 @48278 has 157 MA's), (Start: 57 @48275 has 105 MA's), (73, 48236), (80, 48218), (87, 48164), (88, 48155), (109, 47993), (110, 47990), (121, 47939),

Gene: Beaglebox\_56 Start: 48433, Stop: 48065, Start Num: 57

Candidate Starts for Beaglebox\_56:

(14, 48637), (16, 48592), (18, 48562), (Start: 55 @48436 has 157 MA's), (Start: 57 @48433 has 105 MA's), (73, 48394), (88, 48313), (109, 48151), (110, 48148), (121, 48097),

Gene: BeanWater\_22 Start: 8264, Stop: 8620, Start Num: 58

Candidate Starts for BeanWater\_22:

(Start: 58 @8264 has 177 MA's), (89, 8378), (102, 8471), (121, 8567),

Gene: Beckerton\_70 Start: 52660, Stop: 53028, Start Num: 58

Candidate Starts for Beckerton\_70:

(Start: 58 @52660 has 177 MA's), (69, 52687), (75, 52699), (85, 52747), (86, 52762), (108, 52924), (120, 52960), (122, 52978),

Gene: Belieber\_22 Start: 7343, Stop: 7699, Start Num: 58

Candidate Starts for Belieber\_22:

(Start: 58 @7343 has 177 MA's), (102, 7550), (121, 7646),

Gene: Bernal13\_40 Start: 31063, Stop: 31446, Start Num: 46

Candidate Starts for Bernal13\_40:

(12, 30802), (Start: 35 @31045 has 15 MA's), (Start: 46 @31063 has 47 MA's), (91, 31219), (98, 31270), (102, 31294), (121, 31414), (122, 31417),

Gene: BigCity\_30 Start: 9676, Stop: 10035, Start Num: 58

Candidate Starts for BigCity\_30:

(Start: 58 @9676 has 177 MA's), (89, 9790), (102, 9883), (121, 9982),

Gene: BigMama\_54 Start: 42738, Stop: 43118, Start Num: 52

Candidate Starts for BigMama\_54:

(Start: 52 @42738 has 21 MA's), (68, 42771), (69, 42774), (70, 42777), (84, 42831), (85, 42834), (101, 42954), (121, 43065), (122, 43068),

Gene: Bigswole\_32 Start: 10214, Stop: 10570, Start Num: 58

Candidate Starts for Bigswole\_32:

(Start: 58 @10214 has 177 MA's), (89, 10328), (102, 10421), (121, 10517),

Gene: Bipolarisk\_25 Start: 8416, Stop: 8772, Start Num: 58

Candidate Starts for Bipolarisk\_25:

(Start: 58 @8416 has 177 MA's), (89, 8530), (102, 8623), (121, 8719),

Gene: Bishoperium\_56 Start: 48869, Stop: 48498, Start Num: 55

Candidate Starts for Bishoperium\_56:

(14, 49070), (16, 49025), (18, 48995), (Start: 55 @48869 has 157 MA's), (Start: 57 @48866 has 105 MA's), (73, 48827), (88, 48746), (109, 48584), (110, 48581), (121, 48530),

Gene: BlackStallion\_57 Start: 48331, Stop: 47960, Start Num: 55

Candidate Starts for BlackStallion\_57:

(14, 48532), (16, 48487), (18, 48457), (Start: 55 @48331 has 157 MA's), (Start: 57 @48328 has 105 MA's), (73, 48289), (88, 48208), (109, 48046), (110, 48043), (121, 47992),

Gene: Blackbrain\_24 Start: 7392, Stop: 7748, Start Num: 58

Candidate Starts for Blackbrain\_24:

(Start: 58 @7392 has 177 MA's), (102, 7599), (121, 7695),

Gene: Blackdragon\_21 Start: 7190, Stop: 7546, Start Num: 58

Candidate Starts for Blackdragon\_21:

(Start: 58 @7190 has 177 MA's), (102, 7397), (121, 7493),

Gene: Blessica\_76 Start: 47851, Stop: 47474, Start Num: 48

Candidate Starts for Blessica\_76:



(Start: 48 @47851 has 24 MA's), (74, 47791), (79, 47779), (89, 47716), (102, 47623), (104, 47617), (107, 47572), (118, 47527), (125, 47488), (127, 47485),

Gene: Blubba\_20 Start: 6880, Stop: 7236, Start Num: 58

Candidate Starts for Blubba\_20:

(Start: 58 @6880 has 177 MA's), (89, 6994), (102, 7087), (121, 7183),

Gene: BlueHusk\_57 Start: 48153, Stop: 47782, Start Num: 55

Candidate Starts for BlueHusk\_57:

(14, 48354), (16, 48309), (18, 48279), (34, 48192), (Start: 55 @48153 has 157 MA's), (Start: 57 @48150 has 105 MA's), (73, 48111), (88, 48030), (109, 47868), (110, 47865), (121, 47814),

Gene: Bluephacebaby\_56 Start: 48872, Stop: 48501, Start Num: 55

Candidate Starts for Bluephacebaby\_56:

(14, 49073), (16, 49028), (18, 48998), (Start: 55 @48872 has 157 MA's), (Start: 57 @48869 has 105 MA's), (73, 48830), (88, 48749), (109, 48587), (110, 48584), (121, 48533),

Gene: BobSwaget\_38 Start: 27978, Stop: 28349, Start Num: 62

Candidate Starts for BobSwaget\_38:

(Start: 62 @27978 has 4 MA's), (91, 28095), (102, 28170), (111, 28236), (120, 28272), (128, 28311), (131, 28323), (135, 28329),

Gene: Boehler\_55 Start: 48311, Stop: 47943, Start Num: 57

Candidate Starts for Boehler\_55:

(9, 48659), (14, 48515), (16, 48470), (18, 48440), (34, 48353), (Start: 55 @48314 has 157 MA's), (Start: 57 @48311 has 105 MA's), (88, 48191), (109, 48029), (110, 48026), (121, 47975),

Gene: Bonray\_26 Start: 8690, Stop: 9046, Start Num: 58

Candidate Starts for Bonray\_26:

(Start: 58 @8690 has 177 MA's), (89, 8804), (102, 8897), (121, 8993),

Gene: BoostSeason\_40 Start: 31401, Stop: 31018, Start Num: 35

Candidate Starts for BoostSeason\_40:

(33, 31404), (Start: 35 @31401 has 15 MA's), (69, 31341), (86, 31278), (94, 31227), (99, 31191), (102, 31170), (112, 31098), (121, 31053),

Gene: Bora\_73 Start: 47232, Stop: 46855, Start Num: 48

Candidate Starts for Bora\_73:

(Start: 48 @47232 has 24 MA's), (74, 47172), (79, 47160), (89, 47097), (102, 47004), (104, 46998), (107, 46953), (118, 46908), (125, 46869), (127, 46866),

Gene: Bread\_27 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for Bread\_27:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Breeniome\_26 Start: 7573, Stop: 7929, Start Num: 58

Candidate Starts for Breeniome\_26:

(Start: 58 @7573 has 177 MA's), (89, 7687), (102, 7780), (121, 7876),

Gene: Brilliant\_58 Start: 48872, Stop: 48501, Start Num: 55

Candidate Starts for Brilliant\_58:

(8, 49232), (14, 49073), (16, 49028), (18, 48998), (Start: 55 @48872 has 157 MA's), (Start: 57 @48869 has 105 MA's), (73, 48830), (88, 48749), (109, 48587), (110, 48584), (121, 48533),

Gene: Buckeye\_55 Start: 48383, Stop: 48012, Start Num: 55

Candidate Starts for Buckeye\_55:

(14, 48584), (16, 48539), (18, 48509), (Start: 55 @48383 has 157 MA's), (Start: 57 @48380 has 105 MA's), (73, 48341), (88, 48260), (109, 48098), (110, 48095), (121, 48044),

Gene: Buggy\_38 Start: 27869, Stop: 28264, Start Num: 46

Candidate Starts for Buggy\_38:

(Start: 46 @27869 has 47 MA's), (106, 28127), (111, 28157), (120, 28193),

Gene: Burr\_56 Start: 48344, Stop: 47976, Start Num: 57

Candidate Starts for Burr\_56:

(14, 48548), (16, 48503), (18, 48473), (Start: 55 @48347 has 157 MA's), (Start: 57 @48344 has 105 MA's), (73, 48305), (88, 48224), (109, 48062), (110, 48059), (121, 48008),

Gene: Burrough\_26 Start: 8416, Stop: 8772, Start Num: 58

Candidate Starts for Burrough\_26:

(Start: 58 @8416 has 177 MA's), (89, 8530), (102, 8623), (121, 8719),

Gene: Butterscotch\_55 Start: 42722, Stop: 43102, Start Num: 52

Candidate Starts for Butterscotch\_55:

(Start: 52 @42722 has 21 MA's), (68, 42755), (69, 42758), (70, 42761), (84, 42815), (85, 42818), (101, 42938), (121, 43049), (122, 43052),

Gene: Bxz1\_27 Start: 9159, Stop: 9515, Start Num: 58

Candidate Starts for Bxz1\_27:

(Start: 58 @9159 has 177 MA's), (89, 9273), (102, 9366), (121, 9462),

Gene: Cactojaque\_23 Start: 7281, Stop: 7637, Start Num: 58

Candidate Starts for Cactojaque\_23:

(Start: 58 @7281 has 177 MA's), (102, 7488), (121, 7584),

Gene: Cali\_26 Start: 9723, Stop: 10079, Start Num: 58

Candidate Starts for Cali\_26:

(Start: 58 @9723 has 177 MA's), (102, 9930), (121, 10026),

Gene: CamL\_56 Start: 48637, Stop: 48266, Start Num: 55

Candidate Starts for CamL\_56:

(14, 48838), (16, 48793), (18, 48763), (Start: 55 @48637 has 157 MA's), (Start: 57 @48634 has 105 MA's), (73, 48595), (87, 48523), (109, 48352), (110, 48349), (121, 48298),

Gene: CampRoach\_58 Start: 48777, Stop: 48406, Start Num: 55

Candidate Starts for CampRoach\_58:

(14, 48978), (16, 48933), (18, 48903), (Start: 55 @48777 has 157 MA's), (Start: 57 @48774 has 105 MA's), (73, 48735), (88, 48654), (109, 48492), (110, 48489), (121, 48438),

Gene: Cane17\_19 Start: 6752, Stop: 7108, Start Num: 58

Candidate Starts for Cane17\_19:

(Start: 58 @6752 has 177 MA's), (89, 6866), (102, 6959), (121, 7055),

Gene: Cannibal\_56 Start: 48620, Stop: 48249, Start Num: 55

Candidate Starts for Cannibal\_56:

(14, 48821), (16, 48776), (18, 48746), (34, 48659), (Start: 55 @48620 has 157 MA's), (Start: 57 @48617 has 105 MA's), (73, 48578), (87, 48506), (109, 48335), (110, 48332), (121, 48281),

Gene: Capablanca\_28 Start: 9279, Stop: 9635, Start Num: 58

Candidate Starts for Capablanca\_28:

(Start: 58 @9279 has 177 MA's), (89, 9393), (102, 9486), (121, 9582),

Gene: Caravan\_24 Start: 7690, Stop: 8046, Start Num: 58

Candidate Starts for Caravan\_24:

(Start: 58 @7690 has 177 MA's), (89, 7804), (102, 7897), (121, 7993),

Gene: Carcharodon\_42 Start: 30650, Stop: 31048, Start Num: 30

Candidate Starts for Carcharodon\_42:

(Start: 30 @30650 has 39 MA's), (60, 30701), (66, 30716), (102, 30899), (104, 30905), (112, 30956), (119, 30977), (120, 30980), (121, 30995), (128, 31019), (133, 31034), (135, 31037),

Gene: Carthage\_54 Start: 47615, Stop: 47244, Start Num: 55

Candidate Starts for Carthage\_54:

(14, 47816), (16, 47771), (18, 47741), (34, 47654), (Start: 55 @47615 has 157 MA's), (Start: 57 @47612 has 105 MA's), (73, 47573), (80, 47555), (88, 47492), (109, 47330), (110, 47327), (121, 47276),

Gene: Caspiboi\_58 Start: 48351, Stop: 47980, Start Num: 55

Candidate Starts for Caspiboi\_58:

(8, 48711), (14, 48552), (16, 48507), (18, 48477), (Start: 55 @48351 has 157 MA's), (Start: 57 @48348 has 105 MA's), (73, 48309), (80, 48291), (87, 48237), (88, 48228), (109, 48066), (110, 48063), (121, 48012),

Gene: Catdawg\_75 Start: 47587, Stop: 47210, Start Num: 48

Candidate Starts for Catdawg\_75:

(Start: 48 @47587 has 24 MA's), (74, 47527), (79, 47515), (89, 47452), (102, 47359), (104, 47353), (107, 47308), (118, 47263), (125, 47224), (127, 47221),

Gene: Catera\_24 Start: 7577, Stop: 7933, Start Num: 58

Candidate Starts for Catera\_24:

(Start: 58 @7577 has 177 MA's), (89, 7691), (102, 7784), (121, 7880),

Gene: Cborch11\_73 Start: 52182, Stop: 52571, Start Num: 58

Candidate Starts for Cborch11\_73:

(Start: 58 @52182 has 177 MA's), (69, 52209), (75, 52221), (84, 52266), (85, 52269), (89, 52299), (108, 52449), (124, 52521),

Gene: Centaur\_37 Start: 27702, Stop: 28097, Start Num: 46

Candidate Starts for Centaur\_37:

(Start: 46 @27702 has 47 MA's), (106, 27960), (111, 27990), (120, 28026),

Gene: Chaelin\_57 Start: 48867, Stop: 48496, Start Num: 55

Candidate Starts for Chaelin\_57:

(14, 49068), (16, 49023), (18, 48993), (Start: 55 @48867 has 157 MA's), (Start: 57 @48864 has 105 MA's), (73, 48825), (88, 48744), (109, 48582), (110, 48579), (121, 48528),

Gene: Chah\_58 Start: 48321, Stop: 47953, Start Num: 57

Candidate Starts for Chah\_58:

(14, 48525), (16, 48480), (18, 48450), (Start: 55 @48324 has 157 MA's), (Start: 57 @48321 has 105 MA's), (73, 48282), (88, 48201), (109, 48039), (110, 48036), (121, 47985),

Gene: Chargie21\_25 Start: 7576, Stop: 7932, Start Num: 58

Candidate Starts for Chargie21\_25:

(Start: 58 @7576 has 177 MA's), (102, 7783), (121, 7879),

Gene: Charles1\_57 Start: 48633, Stop: 48262, Start Num: 55

Candidate Starts for Charles1\_57:

(8, 48993), (14, 48834), (16, 48789), (18, 48759), (34, 48672), (Start: 55 @48633 has 157 MA's), (Start: 57 @48630 has 105 MA's), (88, 48510), (109, 48348), (110, 48345), (121, 48294),

Gene: CharlieB\_26 Start: 7730, Stop: 8086, Start Num: 58

Candidate Starts for CharlieB\_26:

(Start: 58 @7730 has 177 MA's), (102, 7937), (121, 8033),

Gene: CharlieGBrown\_56 Start: 48220, Stop: 47852, Start Num: 57

Candidate Starts for CharlieGBrown\_56:

(9, 48568), (14, 48424), (16, 48379), (18, 48349), (Start: 55 @48223 has 157 MA's), (Start: 57 @48220 has 105 MA's), (73, 48181), (80, 48163), (87, 48109), (88, 48100), (109, 47938), (110, 47935), (121, 47884),

Gene: Charm\_35 Start: 26987, Stop: 27367, Start Num: 46

Candidate Starts for Charm\_35:

(Start: 46 @26987 has 47 MA's), (Start: 62 @27017 has 4 MA's), (83, 27068), (98, 27170), (106, 27230), (111, 27260), (120, 27296),

Gene: ChaylaJr\_25 Start: 7663, Stop: 8019, Start Num: 58

Candidate Starts for ChaylaJr\_25:

(Start: 58 @7663 has 177 MA's), (102, 7870), (121, 7966),

Gene: CheetO\_55 Start: 48353, Stop: 47982, Start Num: 55

Candidate Starts for CheetO\_55:

(14, 48554), (16, 48509), (18, 48479), (34, 48392), (Start: 55 @48353 has 157 MA's), (Start: 57 @48350 has 105 MA's), (73, 48311), (88, 48230), (109, 48068), (110, 48065), (121, 48014),

Gene: Cher\_56 Start: 48886, Stop: 48518, Start Num: 57

Candidate Starts for Cher\_56:

(14, 49090), (16, 49045), (18, 49015), (Start: 55 @48889 has 157 MA's), (Start: 57 @48886 has 105 MA's), (73, 48847), (88, 48766), (109, 48604), (110, 48601), (121, 48550),

Gene: Chewbacca\_44 Start: 30650, Stop: 31048, Start Num: 30

Candidate Starts for Chewbacca\_44:

(Start: 30 @30650 has 39 MA's), (60, 30701), (66, 30716), (102, 30899), (104, 30905), (112, 30956), (119, 30977), (120, 30980), (121, 30995), (128, 31019), (133, 31034), (135, 31037),

Gene: ChickenPhender\_25 Start: 7621, Stop: 7977, Start Num: 58

Candidate Starts for ChickenPhender\_25:

(Start: 58 @7621 has 177 MA's), (102, 7828), (121, 7924),

Gene: Childish\_56 Start: 48899, Stop: 48528, Start Num: 55

Candidate Starts for Childish\_56:

(14, 49100), (16, 49055), (18, 49025), (Start: 55 @48899 has 157 MA's), (Start: 57 @48896 has 105 MA's), (73, 48857), (87, 48785), (109, 48614), (110, 48611), (121, 48560),

Gene: Chill\_58 Start: 42785, Stop: 43165, Start Num: 52

Candidate Starts for Chill\_58:

(Start: 52 @42785 has 21 MA's), (68, 42818), (69, 42821), (70, 42824), (84, 42878), (85, 42881), (101, 43001), (121, 43112), (122, 43115),

Gene: ChipMunk\_38 Start: 28998, Stop: 29381, Start Num: 46

Candidate Starts for ChipMunk\_38:

(Start: 46 @28998 has 47 MA's), (85, 29082), (100, 29190), (106, 29241), (111, 29271), (131, 29358),

Gene: Chomp\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for Chomp\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Chorkpop\_56 Start: 48376, Stop: 48005, Start Num: 55

Candidate Starts for Chorkpop\_56:

(14, 48577), (16, 48532), (18, 48502), (Start: 55 @48376 has 157 MA's), (Start: 57 @48373 has 105 MA's), (73, 48334), (87, 48262), (109, 48091), (110, 48088), (121, 48037),

Gene: ChrisnMich\_49 Start: 47148, Stop: 46750, Start Num: 40

Candidate Starts for ChrisnMich\_49:

(5, 47481), (Start: 40 @47148 has 16 MA's), (66, 47100), (67, 47097), (78, 47076), (115, 46830), (123, 46794),

Gene: Chunky\_54 Start: 47683, Stop: 47312, Start Num: 55

Candidate Starts for Chunky\_54:

(14, 47884), (16, 47839), (18, 47809), (34, 47722), (Start: 55 @47683 has 157 MA's), (Start: 57 @47680 has 105 MA's), (73, 47641), (88, 47560), (109, 47398), (110, 47395), (121, 47344),

Gene: Chute\_56 Start: 48694, Stop: 48323, Start Num: 55

Candidate Starts for Chute\_56:

(8, 49054), (14, 48895), (16, 48850), (18, 48820), (34, 48733), (Start: 55 @48694 has 157 MA's), (Start: 57 @48691 has 105 MA's), (88, 48571), (109, 48409), (110, 48406), (121, 48355),

Gene: CindyLou\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for CindyLou\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Cobra\_57 Start: 48665, Stop: 48297, Start Num: 57

Candidate Starts for Cobra\_57:

(14, 48869), (16, 48824), (18, 48794), (Start: 55 @48668 has 157 MA's), (Start: 57 @48665 has 105 MA's), (73, 48626), (88, 48545), (109, 48383), (110, 48380), (121, 48329),

Gene: Colbert\_54 Start: 47732, Stop: 47364, Start Num: 57

Candidate Starts for Colbert\_54:

(14, 47936), (16, 47891), (18, 47861), (34, 47774), (Start: 55 @47735 has 157 MA's), (Start: 57 @47732 has 105 MA's), (73, 47693), (88, 47612), (109, 47450), (110, 47447), (121, 47396),

Gene: Coletti\_56 Start: 48694, Stop: 48323, Start Num: 55

Candidate Starts for Coletti\_56:

(8, 49054), (14, 48895), (16, 48850), (18, 48820), (34, 48733), (Start: 55 @48694 has 157 MA's),  
(Start: 57 @48691 has 105 MA's), (88, 48571), (109, 48409), (110, 48406), (121, 48355),

Gene: Colt\_19 Start: 6758, Stop: 7114, Start Num: 58

Candidate Starts for Colt\_19:

(Start: 58 @6758 has 177 MA's), (89, 6872), (102, 6965), (121, 7061),

Gene: Concombres\_25 Start: 8646, Stop: 9002, Start Num: 58

Candidate Starts for Concombres\_25:

(Start: 58 @8646 has 177 MA's), (89, 8760), (102, 8853), (121, 8949),

Gene: Cooper\_50 Start: 47373, Stop: 46969, Start Num: 40

Candidate Starts for Cooper\_50:

(Start: 40 @47373 has 16 MA's), (66, 47325), (67, 47322), (78, 47301), (82, 47283), (115, 47049),  
(123, 47013),

Gene: Corndog\_78 Start: 48615, Stop: 48190, Start Num: 26

Candidate Starts for Corndog\_78:

(Start: 26 @48615 has 4 MA's), (Start: 48 @48567 has 24 MA's), (74, 48507), (79, 48495), (89, 48432),  
(102, 48339), (104, 48333), (107, 48288), (118, 48243), (125, 48204), (127, 48201),

Gene: Cornobble\_55 Start: 48290, Stop: 47919, Start Num: 55

Candidate Starts for Cornobble\_55:

(14, 48491), (16, 48446), (18, 48416), (34, 48329), (Start: 55 @48290 has 157 MA's), (Start: 57  
@48287 has 105 MA's), (73, 48248), (87, 48176), (109, 48005), (110, 48002), (121, 47951),

Gene: Cosmolli16\_57 Start: 49079, Stop: 48708, Start Num: 55

Candidate Starts for Cosmolli16\_57:

(14, 49280), (16, 49235), (18, 49205), (Start: 55 @49079 has 157 MA's), (Start: 57 @49076 has 105  
MA's), (73, 49037), (87, 48965), (109, 48794), (110, 48791), (121, 48740),

Gene: Craff\_59 Start: 49324, Stop: 48953, Start Num: 55

Candidate Starts for Craff\_59:

(14, 49525), (16, 49480), (18, 49450), (Start: 55 @49324 has 157 MA's), (Start: 57 @49321 has 105  
MA's), (73, 49282), (88, 49201), (109, 49039), (110, 49036), (121, 48985),

Gene: Crownjwl\_56 Start: 48353, Stop: 47985, Start Num: 57

Candidate Starts for Crownjwl\_56:

(14, 48557), (16, 48512), (18, 48482), (34, 48395), (Start: 55 @48356 has 157 MA's), (Start: 57  
@48353 has 105 MA's), (73, 48314), (87, 48242), (88, 48233), (109, 48071), (110, 48068), (121,  
48017),

Gene: Crucio\_36 Start: 27264, Stop: 27647, Start Num: 46

Candidate Starts for Crucio\_36:

(Start: 46 @27264 has 47 MA's), (85, 27348), (100, 27456), (106, 27507), (111, 27537), (131, 27624),

Gene: DTDevon\_27 Start: 9318, Stop: 9674, Start Num: 58

Candidate Starts for DTDevon\_27:

(Start: 58 @9318 has 177 MA's), (89, 9432), (102, 9525), (121, 9621),

Gene: DaddyDaniels\_58 Start: 48853, Stop: 48485, Start Num: 57

Candidate Starts for DaddyDaniels\_58:

(8, 49216), (14, 49057), (16, 49012), (18, 48982), (Start: 55 @48856 has 157 MA's), (Start: 57 @48853 has 105 MA's), (73, 48814), (87, 48742), (109, 48571), (110, 48568), (121, 48517),

Gene: Daffodil\_28 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for Daffodil\_28:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Daffy\_56 Start: 48362, Stop: 47991, Start Num: 55

Candidate Starts for Daffy\_56:

(14, 48563), (16, 48518), (18, 48488), (Start: 55 @48362 has 157 MA's), (Start: 57 @48359 has 105 MA's), (73, 48320), (87, 48248), (109, 48077), (110, 48074), (121, 48023),

Gene: Daka\_58 Start: 48633, Stop: 48265, Start Num: 57

Candidate Starts for Daka\_58:

(14, 48837), (16, 48792), (18, 48762), (34, 48675), (Start: 55 @48636 has 157 MA's), (Start: 57 @48633 has 105 MA's), (73, 48594), (80, 48576), (88, 48513), (109, 48351), (110, 48348), (121, 48297),

Gene: Dalmatian\_37 Start: 27632, Stop: 28015, Start Num: 46

Candidate Starts for Dalmatian\_37:

(Start: 46 @27632 has 47 MA's), (85, 27716), (100, 27824), (106, 27875), (111, 27905), (131, 27992),

Gene: Damien\_71 Start: 52144, Stop: 52533, Start Num: 58

Candidate Starts for Damien\_71:

(Start: 58 @52144 has 177 MA's), (69, 52171), (73, 52177), (75, 52183), (84, 52228), (85, 52231), (89, 52261), (108, 52411), (124, 52483),

Gene: Dandelion\_30 Start: 10013, Stop: 10369, Start Num: 58

Candidate Starts for Dandelion\_30:

(Start: 58 @10013 has 177 MA's), (89, 10127), (102, 10220), (121, 10316),

Gene: Darko\_25 Start: 8555, Stop: 8911, Start Num: 58

Candidate Starts for Darko\_25:

(Start: 58 @8555 has 177 MA's), (102, 8762), (121, 8858),

Gene: DarthP\_72 Start: 50015, Stop: 50398, Start Num: 38

Candidate Starts for DarthP\_72:

(Start: 38 @50015 has 15 MA's), (Start: 42 @50021 has 1 MA's), (69, 50075), (91, 50162), (96, 50201), (102, 50237), (117, 50330), (120, 50339),

Gene: DarthPhader\_38 Start: 29146, Stop: 29526, Start Num: 46

Candidate Starts for DarthPhader\_38:

(Start: 46 @29146 has 47 MA's), (Start: 62 @29176 has 4 MA's), (111, 29419), (112, 29425),

Gene: Dati\_56 Start: 48891, Stop: 48523, Start Num: 57

Candidate Starts for Dati\_56:

(14, 49095), (16, 49050), (18, 49020), (Start: 55 @48894 has 157 MA's), (Start: 57 @48891 has 105 MA's), (73, 48852), (88, 48771), (109, 48609), (110, 48606), (121, 48555),

Gene: DelRivs\_55 Start: 48336, Stop: 47968, Start Num: 57

Candidate Starts for DelRivs\_55:

(8, 48699), (14, 48540), (16, 48495), (18, 48465), (Start: 55 @48339 has 157 MA's), (Start: 57 @48336 has 105 MA's), (73, 48297), (88, 48216), (109, 48054), (110, 48051), (121, 48000),

Gene: Delilah\_26 Start: 8699, Stop: 9055, Start Num: 58  
Candidate Starts for Delilah\_26:  
(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Delton\_57 Start: 43120, Stop: 43500, Start Num: 52  
Candidate Starts for Delton\_57:  
(Start: 52 @43120 has 21 MA's), (68, 43153), (69, 43156), (70, 43159), (84, 43213), (85, 43216), (101, 43336), (121, 43447), (122, 43450),

Gene: Delylah\_27 Start: 8482, Stop: 8838, Start Num: 58  
Candidate Starts for Delylah\_27:  
(Start: 58 @8482 has 177 MA's), (102, 8689), (121, 8785),

Gene: Demodog\_24 Start: 8646, Stop: 9002, Start Num: 58  
Candidate Starts for Demodog\_24:  
(Start: 58 @8646 has 177 MA's), (89, 8760), (102, 8853), (121, 8949),

Gene: Derek\_27 Start: 8111, Stop: 8467, Start Num: 58  
Candidate Starts for Derek\_27:  
(Start: 58 @8111 has 177 MA's), (102, 8318), (121, 8414),

Gene: Derpp\_55 Start: 48209, Stop: 47841, Start Num: 57  
Candidate Starts for Derpp\_55:  
(8, 48572), (14, 48413), (16, 48368), (18, 48338), (Start: 55 @48212 has 157 MA's), (Start: 57 @48209 has 105 MA's), (73, 48170), (80, 48152), (87, 48098), (88, 48089), (109, 47927), (110, 47924), (121, 47873),

Gene: Dewey\_41 Start: 33316, Stop: 32891, Start Num: 30  
Candidate Starts for Dewey\_41:  
(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: Dice\_55 Start: 48300, Stop: 47932, Start Num: 57  
Candidate Starts for Dice\_55:  
(14, 48504), (16, 48459), (18, 48429), (Start: 55 @48303 has 157 MA's), (Start: 57 @48300 has 105 MA's), (73, 48261), (88, 48180), (109, 48018), (110, 48015), (121, 47964),

Gene: Dietrick\_21 Start: 7349, Stop: 7705, Start Num: 58  
Candidate Starts for Dietrick\_21:  
(Start: 58 @7349 has 177 MA's), (102, 7556), (121, 7652),

Gene: DigitDog\_54 Start: 48511, Stop: 48098, Start Num: 39  
Candidate Starts for DigitDog\_54:  
(4, 48889), (6, 48844), (7, 48841), (Start: 39 @48511 has 7 MA's), (73, 48439), (112, 48193), (113, 48190), (120, 48163),

Gene: Dignity\_37 Start: 27627, Stop: 28025, Start Num: 46  
Candidate Starts for Dignity\_37:  
(Start: 46 @27627 has 47 MA's), (70, 27675), (111, 27918), (112, 27924), (120, 27954),

Gene: Dingo\_54 Start: 47659, Stop: 47291, Start Num: 57



Candidate Starts for Dingo\_54:

(14, 47863), (16, 47818), (18, 47788), (34, 47701), (Start: 55 @47662 has 157 MA's), (Start: 57 @47659 has 105 MA's), (73, 47620), (88, 47539), (109, 47377), (110, 47374), (121, 47323),

Gene: Dione\_54 Start: 48034, Stop: 47663, Start Num: 55

Candidate Starts for Dione\_54:

(14, 48235), (16, 48190), (18, 48160), (34, 48073), (Start: 55 @48034 has 157 MA's), (Start: 57 @48031 has 105 MA's), (88, 47911), (109, 47749), (110, 47746), (121, 47695),

Gene: DirtJuice\_57 Start: 48622, Stop: 48254, Start Num: 57

Candidate Starts for DirtJuice\_57:

(14, 48826), (16, 48781), (18, 48751), (34, 48664), (Start: 55 @48625 has 157 MA's), (Start: 57 @48622 has 105 MA's), (73, 48583), (80, 48565), (88, 48502), (109, 48340), (110, 48337), (121, 48286),

Gene: DirtMonster\_25 Start: 9243, Stop: 9599, Start Num: 58

Candidate Starts for DirtMonster\_25:

(Start: 58 @9243 has 177 MA's), (89, 9357), (102, 9450), (121, 9546),

Gene: DismalFunk\_39 Start: 31497, Stop: 31114, Start Num: 35

Candidate Starts for DismalFunk\_39:

(Start: 35 @31497 has 15 MA's), (69, 31437), (86, 31374), (94, 31323), (102, 31266), (112, 31194), (121, 31149), (122, 31146), (128, 31125),

Gene: DismalStressor\_39 Start: 31497, Stop: 31114, Start Num: 35

Candidate Starts for DismalStressor\_39:

(Start: 35 @31497 has 15 MA's), (69, 31437), (86, 31374), (94, 31323), (102, 31266), (112, 31194), (121, 31149), (122, 31146), (128, 31125),

Gene: Doddsville\_56 Start: 48368, Stop: 47997, Start Num: 55

Candidate Starts for Doddsville\_56:

(8, 48728), (14, 48569), (16, 48524), (18, 48494), (Start: 55 @48368 has 157 MA's), (Start: 57 @48365 has 105 MA's), (73, 48326), (80, 48308), (87, 48254), (109, 48083), (110, 48080), (121, 48029),

Gene: DoesntMatter\_54 Start: 48324, Stop: 47956, Start Num: 57

Candidate Starts for DoesntMatter\_54:

(14, 48528), (16, 48483), (18, 48453), (Start: 55 @48327 has 157 MA's), (Start: 57 @48324 has 105 MA's), (73, 48285), (88, 48204), (109, 48042), (110, 48039), (121, 47988),

Gene: Domi\_21 Start: 7974, Stop: 8330, Start Num: 58

Candidate Starts for Domi\_21:

(Start: 58 @7974 has 177 MA's), (89, 8088), (102, 8181), (121, 8277),

Gene: DonSanchon\_54 Start: 48059, Stop: 47688, Start Num: 55

Candidate Starts for DonSanchon\_54:

(14, 48260), (16, 48215), (18, 48185), (Start: 55 @48059 has 157 MA's), (Start: 57 @48056 has 105 MA's), (73, 48017), (88, 47936), (109, 47774), (110, 47771), (121, 47720),

Gene: Donny\_55 Start: 48805, Stop: 48392, Start Num: 39

Candidate Starts for Donny\_55:

(4, 49183), (6, 49138), (7, 49135), (Start: 39 @48805 has 7 MA's), (Start: 49 @48787 has 2 MA's), (73, 48733), (123, 48436), (136, 48403),

Gene: Dori\_57 Start: 47308, Stop: 47706, Start Num: 29

Candidate Starts for Dori\_57:

(19, 47251), (Start: 29 @47308 has 2 MA's), (47, 47338), (66, 47374), (77, 47392), (102, 47557), (104, 47563), (108, 47602), (112, 47614), (119, 47635), (120, 47638), (121, 47653), (133, 47692), (135, 47695),

Gene: DrPhinkDaddy\_26 Start: 8696, Stop: 9052, Start Num: 58

Candidate Starts for DrPhinkDaddy\_26:

(Start: 58 @8696 has 177 MA's), (89, 8810), (102, 8903), (121, 8999),

Gene: Drake55\_38 Start: 27765, Stop: 28160, Start Num: 46

Candidate Starts for Drake55\_38:

(Start: 46 @27765 has 47 MA's), (106, 28023), (111, 28053), (120, 28089),

Gene: Drazdys\_26 Start: 8484, Stop: 8840, Start Num: 58

Candidate Starts for Drazdys\_26:

(Start: 58 @8484 has 177 MA's), (102, 8691), (121, 8787),

Gene: DreamTeam1\_35 Start: 26870, Stop: 27250, Start Num: 46

Candidate Starts for DreamTeam1\_35:

(Start: 46 @26870 has 47 MA's), (Start: 62 @26900 has 4 MA's), (83, 26951), (98, 27053), (106, 27113), (111, 27143), (120, 27179),

Gene: DuchessDung\_57 Start: 47883, Stop: 47515, Start Num: 57

Candidate Starts for DuchessDung\_57:

(14, 48087), (16, 48042), (18, 48012), (34, 47925), (Start: 55 @47886 has 157 MA's), (Start: 57 @47883 has 105 MA's), (73, 47844), (87, 47772), (109, 47601), (110, 47598), (121, 47547),

Gene: DudeLittle\_35 Start: 27298, Stop: 27681, Start Num: 46

Candidate Starts for DudeLittle\_35:

(Start: 46 @27298 has 47 MA's), (85, 27382), (100, 27490), (106, 27541), (111, 27571), (120, 27607), (131, 27658),

Gene: Duggie\_56 Start: 48362, Stop: 47994, Start Num: 57

Candidate Starts for Duggie\_56:

(8, 48725), (14, 48566), (16, 48521), (18, 48491), (Start: 55 @48365 has 157 MA's), (Start: 57 @48362 has 105 MA's), (73, 48323), (80, 48305), (87, 48251), (109, 48080), (110, 48077), (121, 48026),

Gene: Duplicity\_42 Start: 30659, Stop: 31057, Start Num: 30

Candidate Starts for Duplicity\_42:

(Start: 30 @30659 has 39 MA's), (60, 30710), (66, 30725), (102, 30908), (104, 30914), (112, 30965), (119, 30986), (120, 30989), (121, 31004), (128, 31028), (133, 31043), (135, 31046),

Gene: Durga\_58 Start: 48804, Stop: 48433, Start Num: 55

Candidate Starts for Durga\_58:

(8, 49164), (14, 49005), (16, 48960), (18, 48930), (Start: 55 @48804 has 157 MA's), (Start: 57 @48801 has 105 MA's), (73, 48762), (80, 48744), (87, 48690), (88, 48681), (109, 48519), (110, 48516), (121, 48465),

Gene: Dylan\_76 Start: 47811, Stop: 47386, Start Num: 26

Candidate Starts for Dylan\_76:

(Start: 26 @47811 has 4 MA's), (Start: 48 @47763 has 24 MA's), (74, 47703), (79, 47691), (89, 47628), (102, 47535), (104, 47529), (107, 47484), (118, 47439), (125, 47400), (127, 47397),

Gene: ET08\_21 Start: 8158, Stop: 8514, Start Num: 58

Candidate Starts for ET08\_21:

(Start: 58 @8158 has 177 MA's), (102, 8365), (121, 8461),

Gene: EastView9101\_53 Start: 48434, Stop: 48039, Start Num: 49

Candidate Starts for EastView9101\_53:

(4, 48830), (6, 48785), (7, 48782), (Start: 39 @48452 has 7 MA's), (Start: 49 @48434 has 2 MA's), (73, 48380), (123, 48083), (136, 48050),

Gene: EasyJones\_25 Start: 7323, Stop: 7679, Start Num: 58

Candidate Starts for EasyJones\_25:

(Start: 58 @7323 has 177 MA's), (102, 7530), (121, 7626),

Gene: EggyFarm\_30 Start: 9676, Stop: 10035, Start Num: 58

Candidate Starts for EggyFarm\_30:

(Start: 58 @9676 has 177 MA's), (89, 9790), (102, 9883), (121, 9982),

Gene: Ein37\_43 Start: 33292, Stop: 32891, Start Num: 43

Candidate Starts for Ein37\_43:

(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: Ekdilam\_69 Start: 50223, Stop: 50606, Start Num: 38

Candidate Starts for Ekdilam\_69:

(Start: 38 @50223 has 15 MA's), (Start: 42 @50229 has 1 MA's), (56, 50256), (75, 50298), (96, 50409), (106, 50481), (113, 50520), (117, 50538), (120, 50547),

Gene: Ellie\_70 Start: 49459, Stop: 49842, Start Num: 38

Candidate Starts for Ellie\_70:

(Start: 38 @49459 has 15 MA's), (Start: 42 @49465 has 1 MA's), (69, 49519), (91, 49606), (94, 49624), (96, 49645), (106, 49717), (117, 49774), (120, 49783),

Gene: ElvisPhasley\_60 Start: 48905, Stop: 48534, Start Num: 55

Candidate Starts for ElvisPhasley\_60:

(14, 49106), (16, 49061), (18, 49031), (34, 48944), (Start: 55 @48905 has 157 MA's), (Start: 57 @48902 has 105 MA's), (73, 48863), (87, 48791), (109, 48620), (110, 48617), (121, 48566),

Gene: EmToTheThree\_29 Start: 10113, Stop: 10469, Start Num: 58

Candidate Starts for EmToTheThree\_29:

(Start: 58 @10113 has 177 MA's), (102, 10320), (121, 10416),

Gene: Emiris\_58 Start: 48772, Stop: 48401, Start Num: 55

Candidate Starts for Emiris\_58:

(8, 49132), (14, 48973), (16, 48928), (18, 48898), (Start: 55 @48772 has 157 MA's), (Start: 57 @48769 has 105 MA's), (73, 48730), (80, 48712), (87, 48658), (88, 48649), (109, 48487), (110, 48484), (121, 48433),

Gene: EmmaElysia\_24 Start: 7341, Stop: 7697, Start Num: 58

Candidate Starts for EmmaElysia\_24:

(Start: 58 @7341 has 177 MA's), (102, 7548), (121, 7644),

Gene: EmpTee\_55 Start: 48340, Stop: 47969, Start Num: 55  
Candidate Starts for EmpTee\_55:  
(9, 48685), (14, 48541), (16, 48496), (18, 48466), (34, 48379), (Start: 55 @48340 has 157 MA's),  
(Start: 57 @48337 has 105 MA's), (88, 48217), (109, 48055), (110, 48052), (121, 48001),

Gene: Epah\_48 Start: 47146, Stop: 46748, Start Num: 40  
Candidate Starts for Epah\_48:  
(Start: 40 @47146 has 16 MA's), (66, 47098), (67, 47095), (78, 47074), (115, 46828), (123, 46792),

Gene: Equemioh13\_37 Start: 27705, Stop: 28100, Start Num: 46  
Candidate Starts for Equemioh13\_37:  
(Start: 46 @27705 has 47 MA's), (106, 27963), (111, 27993), (120, 28029),

Gene: Erdmann\_27 Start: 8699, Stop: 9055, Start Num: 58  
Candidate Starts for Erdmann\_27:  
(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Eremos\_55 Start: 48330, Stop: 47962, Start Num: 57  
Candidate Starts for Eremos\_55:  
(14, 48534), (16, 48489), (18, 48459), (34, 48372), (Start: 55 @48333 has 157 MA's), (Start: 57  
@48330 has 105 MA's), (73, 48291), (87, 48219), (88, 48210), (109, 48048), (110, 48045), (121,  
47994),

Gene: Erk16\_55 Start: 42824, Stop: 43204, Start Num: 52  
Candidate Starts for Erk16\_55:  
(Start: 52 @42824 has 21 MA's), (68, 42857), (69, 42860), (70, 42863), (84, 42917), (85, 42920), (101,  
43040), (121, 43151), (122, 43154),

Gene: ErnieJ\_27 Start: 8522, Stop: 8878, Start Num: 58  
Candidate Starts for ErnieJ\_27:  
(Start: 58 @8522 has 177 MA's), (102, 8729), (121, 8825),

Gene: Essence\_25 Start: 7876, Stop: 8232, Start Num: 58  
Candidate Starts for Essence\_25:  
(Start: 58 @7876 has 177 MA's), (89, 7990), (102, 8083), (121, 8179),

Gene: Etaye\_56 Start: 49163, Stop: 48792, Start Num: 55  
Candidate Starts for Etaye\_56:  
(14, 49364), (16, 49319), (18, 49289), (Start: 55 @49163 has 157 MA's), (Start: 57 @49160 has 105  
MA's), (73, 49121), (88, 49040), (109, 48878), (110, 48875), (121, 48824),

Gene: Eugenia\_56 Start: 48725, Stop: 48357, Start Num: 57  
Candidate Starts for Eugenia\_56:  
(14, 48929), (16, 48884), (18, 48854), (Start: 55 @48728 has 157 MA's), (Start: 57 @48725 has 105  
MA's), (73, 48686), (88, 48605), (109, 48443), (110, 48440), (121, 48389),

Gene: Evanesce\_42 Start: 33316, Stop: 32891, Start Num: 30  
Candidate Starts for Evanesce\_42:  
(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247),  
(74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128,  
32920), (136, 32899),

Gene: EvilGenius\_38 Start: 29002, Stop: 29385, Start Num: 46

Candidate Starts for EvilGenius\_38:

(Start: 46 @29002 has 47 MA's), (85, 29086), (100, 29194), (106, 29245), (111, 29275), (131, 29362),

Gene: Ewok\_26 Start: 8702, Stop: 9058, Start Num: 58

Candidate Starts for Ewok\_26:

(1, 8036), (2, 8114), (13, 8468), (Start: 58 @8702 has 177 MA's), (89, 8816), (102, 8909), (121, 9005),

Gene: Fameo\_36 Start: 27420, Stop: 27818, Start Num: 46

Candidate Starts for Fameo\_36:

(Start: 46 @27420 has 47 MA's), (100, 27627), (112, 27717), (120, 27747), (128, 27786),

Gene: Familton\_76 Start: 47544, Stop: 47167, Start Num: 48

Candidate Starts for Familton\_76:

(Start: 48 @47544 has 24 MA's), (74, 47484), (79, 47472), (89, 47409), (102, 47316), (104, 47310), (107, 47265), (118, 47220), (125, 47181), (127, 47178),

Gene: Fanaw\_48 Start: 47836, Stop: 47438, Start Num: 40

Candidate Starts for Fanaw\_48:

(Start: 40 @47836 has 16 MA's), (66, 47788), (67, 47785), (78, 47764), (111, 47539), (115, 47518), (123, 47482),

Gene: Fang\_57 Start: 48315, Stop: 47947, Start Num: 57

Candidate Starts for Fang\_57:

(14, 48519), (16, 48474), (18, 48444), (Start: 55 @48318 has 157 MA's), (Start: 57 @48315 has 105 MA's), (73, 48276), (88, 48195), (109, 48033), (110, 48030), (121, 47979),

Gene: Findley\_39 Start: 31490, Stop: 31107, Start Num: 35

Candidate Starts for Findley\_39:

(Start: 35 @31490 has 15 MA's), (86, 31367), (94, 31316), (102, 31259), (112, 31187), (121, 31142), (128, 31118),

Gene: Firecracker\_77 Start: 47969, Stop: 47544, Start Num: 26

Candidate Starts for Firecracker\_77:

(Start: 26 @47969 has 4 MA's), (Start: 48 @47921 has 24 MA's), (74, 47861), (79, 47849), (89, 47786), (102, 47693), (104, 47687), (107, 47642), (118, 47597), (125, 47558), (127, 47555),

Gene: FiringLine\_36 Start: 27245, Stop: 27628, Start Num: 46

Candidate Starts for FiringLine\_36:

(Start: 46 @27245 has 47 MA's), (85, 27329), (100, 27437), (106, 27488), (111, 27518), (131, 27605),

Gene: Flabslab\_27 Start: 8632, Stop: 8988, Start Num: 58

Candidate Starts for Flabslab\_27:

(Start: 58 @8632 has 177 MA's), (102, 8839), (121, 8935),

Gene: Flare16\_36 Start: 27377, Stop: 27772, Start Num: 46

Candidate Starts for Flare16\_36:

(Start: 46 @27377 has 47 MA's), (106, 27635), (111, 27665), (120, 27701),

Gene: Fludd\_25 Start: 7577, Stop: 7933, Start Num: 58

Candidate Starts for Fludd\_25:

(Start: 58 @7577 has 177 MA's), (102, 7784), (121, 7880),

Gene: FluffyNinja\_57 Start: 48329, Stop: 47961, Start Num: 57

Candidate Starts for FluffyNinja\_57:

(14, 48533), (16, 48488), (18, 48458), (Start: 55 @48332 has 157 MA's), (Start: 57 @48329 has 105 MA's), (73, 48290), (88, 48209), (109, 48047), (110, 48044), (121, 47993),

Gene: Forge\_41 Start: 33316, Stop: 32891, Start Num: 30

Candidate Starts for Forge\_41:

(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: FoulBall\_76 Start: 47587, Stop: 47210, Start Num: 48

Candidate Starts for FoulBall\_76:

(Start: 48 @47587 has 24 MA's), (74, 47527), (79, 47515), (89, 47452), (102, 47359), (104, 47353), (107, 47308), (118, 47263), (125, 47224), (127, 47221),

Gene: FoxtrotP1\_26 Start: 9027, Stop: 9383, Start Num: 58

Candidate Starts for FoxtrotP1\_26:

(Start: 58 @9027 has 177 MA's), (89, 9141), (102, 9234), (121, 9330),

Gene: Fozzie\_55 Start: 48666, Stop: 48295, Start Num: 55

Candidate Starts for Fozzie\_55:

(14, 48867), (16, 48822), (18, 48792), (34, 48705), (Start: 55 @48666 has 157 MA's), (Start: 57 @48663 has 105 MA's), (73, 48624), (87, 48552), (109, 48381), (110, 48378), (121, 48327),

Gene: Frankicide\_55 Start: 48361, Stop: 47993, Start Num: 57

Candidate Starts for Frankicide\_55:

(14, 48565), (16, 48520), (18, 48490), (34, 48403), (Start: 55 @48364 has 157 MA's), (Start: 57 @48361 has 105 MA's), (73, 48322), (88, 48241), (109, 48079), (110, 48076), (121, 48025),

Gene: FrayBell\_32 Start: 10270, Stop: 10626, Start Num: 58

Candidate Starts for FrayBell\_32:

(Start: 58 @10270 has 177 MA's), (89, 10384), (102, 10477), (121, 10573),

Gene: Freya\_54 Start: 48022, Stop: 47654, Start Num: 57

Candidate Starts for Freya\_54:

(14, 48226), (16, 48181), (18, 48151), (Start: 55 @48025 has 157 MA's), (Start: 57 @48022 has 105 MA's), (73, 47983), (88, 47902), (109, 47740), (110, 47737), (121, 47686),

Gene: FriarPreacher\_55 Start: 48209, Stop: 47838, Start Num: 55

Candidate Starts for FriarPreacher\_55:

(9, 48554), (14, 48410), (16, 48365), (18, 48335), (Start: 55 @48209 has 157 MA's), (Start: 57 @48206 has 105 MA's), (73, 48167), (88, 48086), (109, 47924), (110, 47921), (121, 47870),

Gene: Fringe\_60 Start: 49243, Stop: 48872, Start Num: 55

Candidate Starts for Fringe\_60:

(14, 49444), (16, 49399), (18, 49369), (Start: 55 @49243 has 157 MA's), (Start: 57 @49240 has 105 MA's), (73, 49201), (88, 49120), (109, 48958), (110, 48955), (121, 48904),

Gene: FudgeTart\_27 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for FudgeTart\_27:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: FugateOSU\_56 Start: 48867, Stop: 48499, Start Num: 57

Candidate Starts for FugateOSU\_56:

(14, 49071), (16, 49026), (18, 48996), (Start: 55 @48870 has 157 MA's), (Start: 57 @48867 has 105 MA's), (73, 48828), (88, 48747), (109, 48585), (110, 48582), (121, 48531),

Gene: Fulbright\_41 Start: 29739, Stop: 30137, Start Num: 30

Candidate Starts for Fulbright\_41:

(Start: 30 @29739 has 39 MA's), (60, 29790), (66, 29805), (102, 29988), (104, 29994), (112, 30045), (119, 30066), (120, 30069), (121, 30084), (128, 30108), (133, 30123), (135, 30126),

Gene: Gabriel\_26 Start: 7573, Stop: 7929, Start Num: 58

Candidate Starts for Gabriel\_26:

(Start: 58 @7573 has 177 MA's), (89, 7687), (102, 7780), (121, 7876),

Gene: Gamgam\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for Gamgam\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Gareth\_56 Start: 48864, Stop: 48493, Start Num: 55

Candidate Starts for Gareth\_56:

(14, 49065), (16, 49020), (18, 48990), (Start: 55 @48864 has 157 MA's), (Start: 57 @48861 has 105 MA's), (73, 48822), (88, 48741), (109, 48579), (110, 48576), (121, 48525),

Gene: GaugeLDP\_37 Start: 27993, Stop: 28460, Start Num: 24

Candidate Starts for GaugeLDP\_37:

(Start: 24 @27993 has 1 MA's), (63, 28089), (70, 28107), (91, 28209), (100, 28269), (106, 28320), (111, 28350), (116, 28374), (131, 28437), (133, 28440), (135, 28443),

Gene: GeneCoco\_56 Start: 48660, Stop: 48289, Start Num: 55

Candidate Starts for GeneCoco\_56:

(8, 49020), (14, 48861), (16, 48816), (18, 48786), (Start: 55 @48660 has 157 MA's), (Start: 57 @48657 has 105 MA's), (73, 48618), (80, 48600), (87, 48546), (88, 48537), (109, 48375), (110, 48372), (121, 48321),

Gene: Georgie2\_37 Start: 27290, Stop: 27673, Start Num: 46

Candidate Starts for Georgie2\_37:

(Start: 46 @27290 has 47 MA's), (85, 27374), (100, 27482), (106, 27533), (111, 27563), (131, 27650),

Gene: Gex\_42 Start: 30666, Stop: 31064, Start Num: 30

Candidate Starts for Gex\_42:

(Start: 30 @30666 has 39 MA's), (60, 30717), (66, 30732), (102, 30915), (104, 30921), (112, 30972), (119, 30993), (120, 30996), (121, 31011), (128, 31035), (133, 31050), (135, 31053),

Gene: Ghost\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for Ghost\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Giles\_41 Start: 33316, Stop: 32891, Start Num: 30

Candidate Starts for Giles\_41:

(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: GinPorsche\_48 Start: 47146, Stop: 46748, Start Num: 40

Candidate Starts for GinPorsche\_48:

(Start: 40 @47146 has 16 MA's), (66, 47098), (67, 47095), (78, 47074), (115, 46828), (123, 46792),

Gene: Giraffe\_57 Start: 48860, Stop: 48489, Start Num: 55

Candidate Starts for Giraffe\_57:

(14, 49061), (16, 49016), (18, 48986), (Start: 55 @48860 has 157 MA's), (Start: 57 @48857 has 105 MA's), (73, 48818), (87, 48746), (109, 48575), (110, 48572), (121, 48521),

Gene: Giuseppe\_57 Start: 42690, Stop: 43070, Start Num: 52

Candidate Starts for Giuseppe\_57:

(Start: 52 @42690 has 21 MA's), (68, 42723), (69, 42726), (70, 42729), (84, 42783), (85, 42786), (101, 42906), (121, 43017), (122, 43020),

Gene: Gizmo\_28 Start: 8701, Stop: 9057, Start Num: 58

Candidate Starts for Gizmo\_28:

(Start: 58 @8701 has 177 MA's), (102, 8908), (121, 9004),

Gene: GlutenPhree\_24 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for GlutenPhree\_24:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Gophee\_57 Start: 48604, Stop: 48233, Start Num: 55

Candidate Starts for Gophee\_57:

(14, 48805), (16, 48760), (18, 48730), (Start: 55 @48604 has 157 MA's), (Start: 57 @48601 has 105 MA's), (73, 48562), (88, 48481), (109, 48319), (110, 48316), (121, 48265),

Gene: Grand2040\_56 Start: 48851, Stop: 48483, Start Num: 57

Candidate Starts for Grand2040\_56:

(14, 49055), (16, 49010), (18, 48980), (Start: 55 @48854 has 157 MA's), (Start: 57 @48851 has 105 MA's), (73, 48812), (87, 48740), (109, 48569), (110, 48566), (121, 48515),

Gene: Grasshills\_30 Start: 9676, Stop: 10035, Start Num: 58

Candidate Starts for Grasshills\_30:

(Start: 58 @9676 has 177 MA's), (89, 9790), (102, 9883), (121, 9982),

Gene: Grungle\_19 Start: 6273, Stop: 6629, Start Num: 58

Candidate Starts for Grungle\_19:

(Start: 58 @6273 has 177 MA's), (102, 6480), (121, 6576),

Gene: Gumball\_55 Start: 42916, Stop: 43296, Start Num: 52

Candidate Starts for Gumball\_55:

(Start: 52 @42916 has 21 MA's), (68, 42949), (69, 42952), (70, 42955), (84, 43009), (85, 43012), (101, 43132), (121, 43243), (122, 43246),

Gene: Guwapp\_26 Start: 8111, Stop: 8467, Start Num: 58

Candidate Starts for Guwapp\_26:

(Start: 58 @8111 has 177 MA's), (89, 8225), (102, 8318), (121, 8414),

Gene: Gwennie1\_56 Start: 48710, Stop: 48339, Start Num: 55

Candidate Starts for Gwennie1\_56:

(14, 48911), (16, 48866), (18, 48836), (Start: 55 @48710 has 157 MA's), (Start: 57 @48707 has 105 MA's), (73, 48668), (87, 48596), (88, 48587), (109, 48425), (110, 48422), (121, 48371),



Gene: Gwilliam\_58 Start: 49217, Stop: 48846, Start Num: 55

Candidate Starts for Gwilliam\_58:

(14, 49418), (16, 49373), (18, 49343), (Start: 55 @49217 has 157 MA's), (Start: 57 @49214 has 105 MA's), (73, 49175), (88, 49094), (109, 48932), (110, 48929), (121, 48878),

Gene: Gyarad\_0054 Start: 47699, Stop: 47328, Start Num: 55

Candidate Starts for Gyarad\_0054:

(14, 47900), (16, 47855), (18, 47825), (34, 47738), (Start: 55 @47699 has 157 MA's), (Start: 57 @47696 has 105 MA's), (73, 47657), (88, 47576), (109, 47414), (110, 47411), (121, 47360),

Gene: HH92\_42 Start: 33316, Stop: 32891, Start Num: 30

Candidate Starts for HH92\_42:

(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: HSavage\_55 Start: 48340, Stop: 47972, Start Num: 57

Candidate Starts for HSavage\_55:

(14, 48544), (16, 48499), (18, 48469), (34, 48382), (Start: 55 @48343 has 157 MA's), (Start: 57 @48340 has 105 MA's), (73, 48301), (88, 48220), (109, 48058), (110, 48055), (121, 48004),

Gene: Hadrien\_43 Start: 33316, Stop: 32891, Start Num: 30

Candidate Starts for Hadrien\_43:

(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: Hail\_41 Start: 33316, Stop: 32891, Start Num: 30

Candidate Starts for Hail\_41:

(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: Haimas\_55 Start: 48359, Stop: 47988, Start Num: 55

Candidate Starts for Haimas\_55:

(14, 48560), (16, 48515), (18, 48485), (Start: 55 @48359 has 157 MA's), (Start: 57 @48356 has 105 MA's), (73, 48317), (88, 48236), (109, 48074), (110, 48071), (121, 48020),

Gene: Haleema\_55 Start: 48358, Stop: 47987, Start Num: 55

Candidate Starts for Haleema\_55:

(14, 48559), (16, 48514), (18, 48484), (Start: 55 @48358 has 157 MA's), (Start: 57 @48355 has 105 MA's), (73, 48316), (87, 48244), (109, 48073), (110, 48070), (121, 48019),

Gene: Halldule\_22 Start: 6943, Stop: 7299, Start Num: 58

Candidate Starts for Halldule\_22:

(Start: 58 @6943 has 177 MA's), (102, 7150), (121, 7246),

Gene: Hally898\_48 Start: 47161, Stop: 46760, Start Num: 40

Candidate Starts for Hally898\_48:

(Start: 40 @47161 has 16 MA's), (66, 47113), (67, 47110), (68, 47107), (78, 47086), (115, 46840), (123, 46804),

Gene: Hamish\_55 Start: 48352, Stop: 47981, Start Num: 55

Candidate Starts for Hamish\_55:

(8, 48712), (14, 48553), (16, 48508), (18, 48478), (34, 48391), (Start: 55 @48352 has 157 MA's), (Start: 57 @48349 has 105 MA's), (88, 48229), (109, 48067), (110, 48064), (121, 48013),

Gene: Hammy\_72 Start: 50000, Stop: 50383, Start Num: 38

Candidate Starts for Hammy\_72:

(Start: 38 @50000 has 15 MA's), (Start: 42 @50006 has 1 MA's), (69, 50060), (91, 50147), (96, 50186), (102, 50222), (117, 50315), (120, 50324),

Gene: HarryHoudini\_38 Start: 27804, Stop: 28184, Start Num: 46

Candidate Starts for HarryHoudini\_38:

(Start: 46 @27804 has 47 MA's), (111, 28077), (112, 28083), (120, 28113),

Gene: Hartsy\_57 Start: 48692, Stop: 48321, Start Num: 55

Candidate Starts for Hartsy\_57:

(14, 48893), (16, 48848), (18, 48818), (Start: 55 @48692 has 157 MA's), (Start: 57 @48689 has 105 MA's), (73, 48650), (88, 48569), (109, 48407), (110, 48404), (121, 48353),

Gene: Harvey\_55 Start: 48389, Stop: 48018, Start Num: 55

Candidate Starts for Harvey\_55:

(14, 48590), (16, 48545), (18, 48515), (Start: 55 @48389 has 157 MA's), (Start: 57 @48386 has 105 MA's), (73, 48347), (88, 48266), (109, 48104), (110, 48101), (121, 48050),

Gene: Heath\_48 Start: 47727, Stop: 47389, Start Num: 72

Candidate Starts for Heath\_48:

(Start: 72 @47727 has 1 MA's), (115, 47469), (123, 47433),

Gene: Held\_56 Start: 48360, Stop: 47992, Start Num: 57

Candidate Starts for Held\_56:

(14, 48564), (16, 48519), (18, 48489), (Start: 55 @48363 has 157 MA's), (Start: 57 @48360 has 105 MA's), (73, 48321), (87, 48249), (109, 48078), (110, 48075), (121, 48024),

Gene: Helpful\_59 Start: 43051, Stop: 43431, Start Num: 52

Candidate Starts for Helpful\_59:

(Start: 52 @43051 has 21 MA's), (68, 43084), (69, 43087), (70, 43090), (84, 43144), (85, 43147), (101, 43267), (121, 43378), (122, 43381),

Gene: HenryJackson\_56 Start: 48885, Stop: 48517, Start Num: 57

Candidate Starts for HenryJackson\_56:

(14, 49089), (16, 49044), (18, 49014), (Start: 55 @48888 has 157 MA's), (Start: 57 @48885 has 105 MA's), (73, 48846), (88, 48765), (109, 48603), (110, 48600), (121, 48549),

Gene: Hertubise\_56 Start: 48655, Stop: 48284, Start Num: 55

Candidate Starts for Hertubise\_56:

(14, 48856), (16, 48811), (18, 48781), (Start: 55 @48655 has 157 MA's), (Start: 57 @48652 has 105 MA's), (73, 48613), (88, 48532), (109, 48370), (110, 48367), (121, 48316),

Gene: Hetaeria\_55 Start: 48387, Stop: 48019, Start Num: 57

Candidate Starts for Hetaeria\_55:

(14, 48591), (16, 48546), (18, 48516), (34, 48429), (Start: 55 @48390 has 157 MA's), (Start: 57 @48387 has 105 MA's), (73, 48348), (87, 48276), (109, 48105), (110, 48102), (121, 48051),

Gene: HighStump\_58 Start: 48866, Stop: 48495, Start Num: 55

Candidate Starts for HighStump\_58:

(14, 49067), (16, 49022), (18, 48992), (Start: 55 @48866 has 157 MA's), (Start: 57 @48863 has 105 MA's), (73, 48824), (88, 48743), (109, 48581), (110, 48578), (121, 48527),

Gene: Hilltopfarm\_107 Start: 65766, Stop: 66104, Start Num: 50

Candidate Starts for Hilltopfarm\_107:

(Start: 50 @65766 has 2 MA's), (56, 65778), (74, 65817), (75, 65820), (104, 65976),

Gene: Hocus\_56 Start: 48346, Stop: 47978, Start Num: 57

Candidate Starts for Hocus\_56:

(8, 48709), (14, 48550), (16, 48505), (18, 48475), (Start: 55 @48349 has 157 MA's), (Start: 57 @48346 has 105 MA's), (73, 48307), (80, 48289), (87, 48235), (88, 48226), (109, 48064), (110, 48061), (121, 48010),

Gene: Horchata\_55 Start: 48343, Stop: 47972, Start Num: 55

Candidate Starts for Horchata\_55:

(14, 48544), (16, 48499), (18, 48469), (34, 48382), (Start: 55 @48343 has 157 MA's), (Start: 57 @48340 has 105 MA's), (73, 48301), (88, 48220), (109, 48058), (110, 48055), (121, 48004),

Gene: Hurricane\_75 Start: 49943, Stop: 50338, Start Num: 32

Candidate Starts for Hurricane\_75:

(Start: 32 @49943 has 5 MA's), (51, 49979), (69, 50015), (87, 50072), (102, 50177), (106, 50213), (120, 50279), (132, 50330),

Gene: HyRo\_25 Start: 8889, Stop: 9245, Start Num: 58

Candidate Starts for HyRo\_25:

(Start: 58 @8889 has 177 MA's), (102, 9096), (121, 9192),

Gene: Hydro\_49 Start: 48214, Stop: 47816, Start Num: 40

Candidate Starts for Hydro\_49:

(Start: 40 @48214 has 16 MA's), (66, 48166), (67, 48163), (78, 48142), (111, 47917), (115, 47896), (123, 47860),

Gene: I3\_28 Start: 9266, Stop: 9622, Start Num: 58

Candidate Starts for I3\_28:

(Start: 58 @9266 has 177 MA's), (89, 9380), (102, 9473), (121, 9569),

Gene: Ibrahim\_40 Start: 31491, Stop: 31892, Start Num: 35

Candidate Starts for Ibrahim\_40:

(12, 31248), (Start: 35 @31491 has 15 MA's), (Start: 46 @31509 has 47 MA's), (91, 31665), (98, 31716), (102, 31740), (121, 31860), (122, 31863),

Gene: IdentityCrisis\_40 Start: 28510, Stop: 28902, Start Num: 30

Candidate Starts for IdentityCrisis\_40:

(Start: 30 @28510 has 39 MA's), (37, 28519), (60, 28555), (104, 28759), (112, 28810), (120, 28834), (122, 28852), (133, 28888),

Gene: Idergollasper\_75 Start: 47538, Stop: 47161, Start Num: 48

Candidate Starts for Idergollasper\_75:

(Start: 48 @47538 has 24 MA's), (74, 47478), (79, 47466), (89, 47403), (102, 47310), (104, 47304), (107, 47259), (118, 47214), (125, 47175), (127, 47172),

Gene: IkeLoa\_22 Start: 8000, Stop: 8356, Start Num: 58

Candidate Starts for IkeLoa\_22:

(Start: 58 @8000 has 177 MA's), (89, 8114), (102, 8207), (121, 8303),

Gene: ImtiyazSitla\_57 Start: 48338, Stop: 47967, Start Num: 55

Candidate Starts for ImtiyazSitla\_57:

(8, 48698), (14, 48539), (16, 48494), (18, 48464), (Start: 55 @48338 has 157 MA's), (Start: 57 @48335 has 105 MA's), (73, 48296), (80, 48278), (87, 48224), (88, 48215), (109, 48053), (110, 48050), (121, 47999),

Gene: Inchworm\_58 Start: 48737, Stop: 48366, Start Num: 55

Candidate Starts for Inchworm\_58:

(14, 48938), (16, 48893), (18, 48863), (Start: 55 @48737 has 157 MA's), (Start: 57 @48734 has 105 MA's), (73, 48695), (88, 48614), (109, 48452), (110, 48449), (121, 48398),

Gene: InigoMontoya\_27 Start: 8115, Stop: 8471, Start Num: 58

Candidate Starts for InigoMontoya\_27:

(Start: 58 @8115 has 177 MA's), (89, 8229), (102, 8322), (121, 8418),

Gene: InterFolia\_33 Start: 10805, Stop: 11161, Start Num: 58

Candidate Starts for InterFolia\_33:

(Start: 58 @10805 has 177 MA's), (89, 10919), (102, 11012), (121, 11108),

Gene: Inverness\_55 Start: 48352, Stop: 47981, Start Num: 55

Candidate Starts for Inverness\_55:

(14, 48553), (16, 48508), (18, 48478), (34, 48391), (Start: 55 @48352 has 157 MA's), (Start: 57 @48349 has 105 MA's), (73, 48310), (87, 48238), (109, 48067), (110, 48064), (121, 48013),

Gene: Iota\_23 Start: 8234, Stop: 8590, Start Num: 58

Candidate Starts for Iota\_23:

(Start: 58 @8234 has 177 MA's), (102, 8441), (121, 8537),

Gene: Iridessa\_58 Start: 48310, Stop: 47939, Start Num: 55

Candidate Starts for Iridessa\_58:

(14, 48511), (16, 48466), (18, 48436), (Start: 55 @48310 has 157 MA's), (Start: 57 @48307 has 105 MA's), (73, 48268), (88, 48187), (109, 48025), (110, 48022), (121, 47971),

Gene: Iridoclysis\_57 Start: 48632, Stop: 48264, Start Num: 57

Candidate Starts for Iridoclysis\_57:

(14, 48836), (16, 48791), (18, 48761), (Start: 55 @48635 has 157 MA's), (Start: 57 @48632 has 105 MA's), (73, 48593), (87, 48521), (109, 48350), (110, 48347), (121, 48296),

Gene: IsaacEli\_57 Start: 48873, Stop: 48505, Start Num: 57

Candidate Starts for IsaacEli\_57:

(14, 49077), (16, 49032), (18, 49002), (Start: 55 @48876 has 157 MA's), (Start: 57 @48873 has 105 MA's), (73, 48834), (88, 48753), (109, 48591), (110, 48588), (121, 48537),

Gene: Issimir\_26 Start: 8694, Stop: 9050, Start Num: 58

Candidate Starts for Issimir\_26:

(13, 8460), (Start: 58 @8694 has 177 MA's), (89, 8808), (102, 8901), (121, 8997),

Gene: Izajani\_27 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for Izajani\_27:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: JAMaL\_49 Start: 48340, Stop: 47954, Start Num: 40

Candidate Starts for JAMaL\_49:

(5, 48673), (Start: 40 @48340 has 16 MA's), (Start: 42 @48337 has 1 MA's), (66, 48301), (67, 48298), (111, 48055), (115, 48034), (123, 47998),

Gene: JDog\_55 Start: 48889, Stop: 48521, Start Num: 57

Candidate Starts for JDog\_55:

(14, 49093), (16, 49048), (18, 49018), (Start: 55 @48892 has 157 MA's), (Start: 57 @48889 has 105 MA's), (73, 48850), (88, 48769), (109, 48607), (110, 48604), (121, 48553),

Gene: JPickles\_24 Start: 7351, Stop: 7707, Start Num: 58

Candidate Starts for JPickles\_24:

(Start: 58 @7351 has 177 MA's), (102, 7558), (121, 7654),

Gene: JacAttac\_57 Start: 48297, Stop: 47926, Start Num: 55

Candidate Starts for JacAttac\_57:

(14, 48498), (16, 48453), (18, 48423), (Start: 55 @48297 has 157 MA's), (Start: 57 @48294 has 105 MA's), (73, 48255), (88, 48174), (109, 48012), (110, 48009), (121, 47958),

Gene: JacoRen57\_55 Start: 43848, Stop: 44240, Start Num: 42

Candidate Starts for JacoRen57\_55:

(Start: 42 @43848 has 1 MA's), (59, 43881), (73, 43917), (93, 44025), (96, 44049), (102, 44085), (115, 44175), (128, 44229),

Gene: JaguarMi\_51 Start: 49281, Stop: 48883, Start Num: 40

Candidate Starts for JaguarMi\_51:

(Start: 40 @49281 has 16 MA's), (64, 49239), (66, 49233), (67, 49230), (111, 48984), (115, 48963), (123, 48927),

Gene: JakeO\_56 Start: 48368, Stop: 47997, Start Num: 55

Candidate Starts for JakeO\_56:

(14, 48569), (16, 48524), (18, 48494), (34, 48407), (Start: 55 @48368 has 157 MA's), (Start: 57 @48365 has 105 MA's), (73, 48326), (87, 48254), (109, 48083), (110, 48080), (121, 48029),

Gene: Jamie19\_40 Start: 29847, Stop: 30245, Start Num: 30

Candidate Starts for Jamie19\_40:

(Start: 30 @29847 has 39 MA's), (60, 29898), (66, 29913), (102, 30096), (104, 30102), (112, 30153), (119, 30174), (120, 30177), (121, 30192), (128, 30216), (133, 30231), (135, 30234),

Gene: JangDynasty\_75 Start: 47605, Stop: 47228, Start Num: 48

Candidate Starts for JangDynasty\_75:

(Start: 48 @47605 has 24 MA's), (74, 47545), (79, 47533), (89, 47470), (102, 47377), (104, 47371), (107, 47326), (118, 47281), (125, 47242), (127, 47239),

Gene: JangoPhett\_56 Start: 48637, Stop: 48275, Start Num: 55

Candidate Starts for JangoPhett\_56:

(8, 48997), (14, 48838), (16, 48793), (18, 48763), (Start: 55 @48637 has 157 MA's), (Start: 57 @48634 has 105 MA's), (73, 48595), (80, 48577), (87, 48532), (88, 48523), (109, 48361), (110, 48358), (121, 48307),

Gene: Janiyra\_26 Start: 8133, Stop: 8489, Start Num: 58

Candidate Starts for Janiyra\_26:

(Start: 58 @8133 has 177 MA's), (89, 8247), (102, 8340), (121, 8436),

Gene: JayJay\_27 Start: 8667, Stop: 9023, Start Num: 58

Candidate Starts for JayJay\_27:

(Start: 58 @8667 has 177 MA's), (89, 8781), (102, 8874), (121, 8970),

Gene: Jaygup\_26 Start: 8150, Stop: 8506, Start Num: 58

Candidate Starts for Jaygup\_26:

(Start: 58 @8150 has 177 MA's), (89, 8264), (102, 8357), (121, 8453),

Gene: Jedediah\_26 Start: 7619, Stop: 7975, Start Num: 58

Candidate Starts for Jedediah\_26:

(Start: 58 @7619 has 177 MA's), (89, 7733), (102, 7826), (121, 7922),

Gene: Jemmno\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for Jemmno\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Jerm\_37 Start: 27620, Stop: 28018, Start Num: 46

Candidate Starts for Jerm\_37:

(Start: 46 @27620 has 47 MA's), (70, 27668), (111, 27911), (112, 27917), (120, 27947),

Gene: Jesabah\_56 Start: 48893, Stop: 48522, Start Num: 55

Candidate Starts for Jesabah\_56:

(14, 49094), (16, 49049), (18, 49019), (Start: 55 @48893 has 157 MA's), (Start: 57 @48890 has 105 MA's), (73, 48851), (88, 48770), (109, 48608), (110, 48605), (121, 48554),

Gene: Jessibeth14\_25 Start: 8422, Stop: 8778, Start Num: 58

Candidate Starts for Jessibeth14\_25:

(Start: 58 @8422 has 177 MA's), (102, 8629), (121, 8725),

Gene: Jezreel\_25 Start: 8171, Stop: 8527, Start Num: 58

Candidate Starts for Jezreel\_25:

(Start: 58 @8171 has 177 MA's), (89, 8285), (102, 8378), (121, 8474),

Gene: JigglyPuff\_26 Start: 8695, Stop: 9051, Start Num: 58

Candidate Starts for JigglyPuff\_26:

(Start: 58 @8695 has 177 MA's), (89, 8809), (102, 8902), (121, 8998),

Gene: Jillium\_56 Start: 48884, Stop: 48513, Start Num: 55

Candidate Starts for Jillium\_56:

(14, 49085), (16, 49040), (18, 49010), (Start: 55 @48884 has 157 MA's), (Start: 57 @48881 has 105 MA's), (73, 48842), (88, 48761), (109, 48599), (110, 48596), (121, 48545),

Gene: Jiminy\_56 Start: 48200, Stop: 47832, Start Num: 57

Candidate Starts for Jiminy\_56:

(8, 48563), (14, 48404), (16, 48359), (18, 48329), (Start: 55 @48203 has 157 MA's), (Start: 57 @48200 has 105 MA's), (73, 48161), (80, 48143), (87, 48089), (109, 47918), (110, 47915), (121, 47864),

Gene: Jiraiya\_59 Start: 48356, Stop: 47985, Start Num: 55

Candidate Starts for Jiraiya\_59:

(8, 48716), (14, 48557), (16, 48512), (18, 48482), (Start: 55 @48356 has 157 MA's), (Start: 57 @48353 has 105 MA's), (73, 48314), (80, 48296), (87, 48242), (109, 48071), (110, 48068), (121, 48017),

Gene: JoshKayV\_37 Start: 27589, Stop: 27972, Start Num: 46

Candidate Starts for JoshKayV\_37:

(Start: 46 @27589 has 47 MA's), (85, 27673), (100, 27781), (106, 27832), (111, 27862), (120, 27898), (128, 27937), (131, 27949),

Gene: JulietS\_21 Start: 6576, Stop: 6932, Start Num: 58

Candidate Starts for JulietS\_21:

(Start: 58 @6576 has 177 MA's), (102, 6783), (121, 6879),

Gene: JustASigh\_40 Start: 31548, Stop: 31102, Start Num: 23

Candidate Starts for JustASigh\_40:

(Start: 23 @31548 has 1 MA's), (25, 31539), (27, 31521), (47, 31479), (60, 31458), (66, 31443), (102, 31263), (112, 31194), (119, 31173), (120, 31170), (133, 31116),

Gene: JustHall\_25 Start: 8599, Stop: 8955, Start Num: 58

Candidate Starts for JustHall\_25:

(Start: 58 @8599 has 177 MA's), (89, 8713), (102, 8806), (121, 8902),

Gene: KLucky39\_54 Start: 47698, Stop: 47327, Start Num: 55

Candidate Starts for KLucky39\_54:

(14, 47899), (16, 47854), (18, 47824), (34, 47737), (Start: 55 @47698 has 157 MA's), (Start: 57 @47695 has 105 MA's), (73, 47656), (88, 47575), (109, 47413), (110, 47410), (121, 47359),

Gene: Kahve\_56 Start: 48885, Stop: 48514, Start Num: 55

Candidate Starts for Kahve\_56:

(14, 49086), (16, 49041), (18, 49011), (Start: 55 @48885 has 157 MA's), (Start: 57 @48882 has 105 MA's), (73, 48843), (88, 48762), (109, 48600), (110, 48597), (121, 48546),

Gene: Kailash\_56 Start: 48722, Stop: 48351, Start Num: 55

Candidate Starts for Kailash\_56:

(8, 49082), (14, 48923), (16, 48878), (18, 48848), (Start: 55 @48722 has 157 MA's), (Start: 57 @48719 has 105 MA's), (73, 48680), (80, 48662), (87, 48608), (88, 48599), (109, 48437), (110, 48434), (121, 48383),

Gene: Kamryn\_26 Start: 8478, Stop: 8834, Start Num: 58

Candidate Starts for Kamryn\_26:

(Start: 58 @8478 has 177 MA's), (89, 8592), (102, 8685), (121, 8781),

Gene: KandZ\_55 Start: 42849, Stop: 43229, Start Num: 52

Candidate Starts for KandZ\_55:

(Start: 52 @42849 has 21 MA's), (68, 42882), (69, 42885), (70, 42888), (84, 42942), (85, 42945), (101, 43065), (121, 43176), (122, 43179),

Gene: KarasumaRum\_54 Start: 48662, Stop: 48249, Start Num: 39

Candidate Starts for KarasumaRum\_54:

(Start: 39 @48662 has 7 MA's), (105, 48389), (112, 48344), (113, 48341), (120, 48314),

Gene: Katniss\_57 Start: 48324, Stop: 47953, Start Num: 55

Candidate Starts for Katniss\_57:

(14, 48525), (16, 48480), (18, 48450), (Start: 55 @48324 has 157 MA's), (Start: 57 @48321 has 105 MA's), (73, 48282), (88, 48201), (109, 48039), (110, 48036), (121, 47985),

Gene: Kboogie\_26 Start: 7632, Stop: 7988, Start Num: 58

Candidate Starts for Kboogie\_26:

(Start: 58 @7632 has 177 MA's), (102, 7839), (121, 7935),

Gene: Keitherie\_57 Start: 48703, Stop: 48332, Start Num: 55

Candidate Starts for Keitherie\_57:

(8, 49063), (14, 48904), (16, 48859), (18, 48829), (34, 48742), (Start: 55 @48703 has 157 MA's),  
(Start: 57 @48700 has 105 MA's), (88, 48580), (109, 48418), (110, 48415), (121, 48364),

Gene: Keshu\_77 Start: 50098, Stop: 50493, Start Num: 32

Candidate Starts for Keshu\_77:

(Start: 32 @50098 has 5 MA's), (51, 50134), (69, 50170), (100, 50317), (102, 50332), (106, 50368),  
(120, 50434), (132, 50485),

Gene: Khaleesi\_25 Start: 8449, Stop: 8805, Start Num: 58

Candidate Starts for Khaleesi\_25:

(Start: 58 @8449 has 177 MA's), (102, 8656), (121, 8752),

Gene: Khan1\_57 Start: 48841, Stop: 48470, Start Num: 55

Candidate Starts for Khan1\_57:

(8, 49201), (14, 49042), (16, 48997), (18, 48967), (Start: 55 @48841 has 157 MA's), (Start: 57 @48838  
has 105 MA's), (73, 48799), (87, 48727), (109, 48556), (110, 48553), (121, 48502),

Gene: Kikipoo\_57 Start: 48876, Stop: 48505, Start Num: 55

Candidate Starts for Kikipoo\_57:

(14, 49077), (16, 49032), (18, 49002), (Start: 55 @48876 has 157 MA's), (Start: 57 @48873 has 105  
MA's), (73, 48834), (88, 48753), (109, 48591), (110, 48588), (121, 48537),

Gene: Kimbrough\_57 Start: 48885, Stop: 48514, Start Num: 55

Candidate Starts for Kimbrough\_57:

(14, 49086), (16, 49041), (18, 49011), (Start: 55 @48885 has 157 MA's), (Start: 57 @48882 has 105  
MA's), (73, 48843), (88, 48762), (109, 48600), (110, 48597), (121, 48546),

Gene: Kinbote\_43 Start: 33316, Stop: 32891, Start Num: 30

Candidate Starts for Kinbote\_43:

(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247),  
(74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128,  
32920), (136, 32899),

Gene: KingCyrus\_38 Start: 28997, Stop: 29380, Start Num: 46

Candidate Starts for KingCyrus\_38:

(Start: 46 @28997 has 47 MA's), (85, 29081), (100, 29189), (106, 29240), (111, 29270), (131, 29357),

Gene: KingTut\_48 Start: 44549, Stop: 44178, Start Num: 55

Candidate Starts for KingTut\_48:

(14, 44750), (16, 44705), (18, 44675), (Start: 55 @44549 has 157 MA's), (Start: 57 @44546 has 105  
MA's), (73, 44507), (88, 44426), (109, 44264), (110, 44261), (121, 44210),

Gene: KingVeVeVe\_54 Start: 47652, Stop: 47281, Start Num: 55

Candidate Starts for KingVeVeVe\_54:

(14, 47853), (16, 47808), (18, 47778), (34, 47691), (Start: 55 @47652 has 157 MA's), (Start: 57  
@47649 has 105 MA's), (73, 47610), (88, 47529), (109, 47367), (110, 47364), (121, 47313),



Gene: KlimbOn\_55 Start: 48341, Stop: 47973, Start Num: 57

Candidate Starts for KlimbOn\_55:

(14, 48545), (16, 48500), (18, 48470), (34, 48383), (Start: 55 @48344 has 157 MA's), (Start: 57 @48341 has 105 MA's), (73, 48302), (88, 48221), (109, 48059), (110, 48056), (121, 48005),

Gene: Kloppinator\_56 Start: 48181, Stop: 47813, Start Num: 57

Candidate Starts for Kloppinator\_56:

(8, 48544), (14, 48385), (16, 48340), (18, 48310), (34, 48223), (Start: 55 @48184 has 157 MA's), (Start: 57 @48181 has 105 MA's), (88, 48061), (109, 47899), (110, 47896), (121, 47845),

Gene: Koguma\_22 Start: 6919, Stop: 7275, Start Num: 58

Candidate Starts for Koguma\_22:

(Start: 58 @6919 has 177 MA's), (102, 7126), (121, 7222),

Gene: Konstantine\_75 Start: 52975, Stop: 53364, Start Num: 58

Candidate Starts for Konstantine\_75:

(Start: 58 @52975 has 177 MA's), (69, 53002), (75, 53014), (84, 53059), (85, 53062), (89, 53092), (108, 53242), (124, 53314),

Gene: Krili\_75 Start: 47097, Stop: 46720, Start Num: 48

Candidate Starts for Krili\_75:

(Start: 48 @47097 has 24 MA's), (74, 47037), (79, 47025), (89, 46962), (102, 46869), (104, 46863), (107, 46818), (118, 46773), (125, 46734), (127, 46731),

Gene: Krueger\_78 Start: 49845, Stop: 50228, Start Num: 38

Candidate Starts for Krueger\_78:

(Start: 38 @49845 has 15 MA's), (51, 49866), (69, 49905), (75, 49920), (91, 49992), (96, 50031), (102, 50067), (106, 50103), (120, 50169),

Gene: Kwadwo\_55 Start: 48337, Stop: 47966, Start Num: 55

Candidate Starts for Kwadwo\_55:

(14, 48538), (16, 48493), (18, 48463), (Start: 55 @48337 has 157 MA's), (Start: 57 @48334 has 105 MA's), (73, 48295), (87, 48223), (109, 48052), (110, 48049), (121, 47998),

Gene: Kwksand96\_56 Start: 48215, Stop: 47847, Start Num: 57

Candidate Starts for Kwksand96\_56:

(8, 48578), (14, 48419), (16, 48374), (18, 48344), (Start: 55 @48218 has 157 MA's), (Start: 57 @48215 has 105 MA's), (73, 48176), (80, 48158), (87, 48104), (88, 48095), (109, 47933), (110, 47930), (121, 47879),

Gene: LRRHood\_23 Start: 8842, Stop: 9198, Start Num: 58

Candidate Starts for LRRHood\_23:

(Start: 58 @8842 has 177 MA's), (102, 9049), (121, 9145),

Gene: Labeouficaum\_56 Start: 48209, Stop: 47841, Start Num: 57

Candidate Starts for Labeouficaum\_56:

(8, 48572), (14, 48413), (16, 48368), (18, 48338), (Start: 55 @48212 has 157 MA's), (Start: 57 @48209 has 105 MA's), (73, 48170), (80, 48152), (87, 48098), (88, 48089), (109, 47927), (110, 47924), (121, 47873),

Gene: Lambano\_48 Start: 47161, Stop: 46760, Start Num: 40

Candidate Starts for Lambano\_48:

(Start: 40 @47161 has 16 MA's), (66, 47113), (67, 47110), (68, 47107), (78, 47086), (115, 46840), (123, 46804),

Gene: Larenn\_37 Start: 27686, Stop: 28081, Start Num: 46

Candidate Starts for Larenn\_37:

(Start: 46 @27686 has 47 MA's), (70, 27734), (111, 27974), (112, 27980), (120, 28010),

Gene: LasagnaCat\_58 Start: 48749, Stop: 48378, Start Num: 55

Candidate Starts for LasagnaCat\_58:

(14, 48950), (16, 48905), (18, 48875), (Start: 55 @48749 has 157 MA's), (Start: 57 @48746 has 105 MA's), (73, 48707), (88, 48626), (109, 48464), (110, 48461), (121, 48410),

Gene: Lasso\_56 Start: 48612, Stop: 48241, Start Num: 55

Candidate Starts for Lasso\_56:

(14, 48813), (16, 48768), (18, 48738), (Start: 55 @48612 has 157 MA's), (Start: 57 @48609 has 105 MA's), (73, 48570), (87, 48498), (109, 48327), (110, 48324), (121, 48273),

Gene: Latch\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for Latch\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Lee7\_25 Start: 8696, Stop: 9052, Start Num: 58

Candidate Starts for Lee7\_25:

(Start: 58 @8696 has 177 MA's), (102, 8903), (121, 8999),

Gene: LeeLot\_56 Start: 48664, Stop: 48293, Start Num: 55

Candidate Starts for LeeLot\_56:

(14, 48865), (16, 48820), (18, 48790), (Start: 55 @48664 has 157 MA's), (Start: 57 @48661 has 105 MA's), (73, 48622), (88, 48541), (109, 48379), (110, 48376), (121, 48325),

Gene: Lego3393\_55 Start: 48876, Stop: 48505, Start Num: 55

Candidate Starts for Lego3393\_55:

(14, 49077), (16, 49032), (18, 49002), (Start: 55 @48876 has 157 MA's), (Start: 57 @48873 has 105 MA's), (73, 48834), (88, 48753), (109, 48591), (110, 48588), (121, 48537),

Gene: Legolas\_58 Start: 48763, Stop: 48392, Start Num: 55

Candidate Starts for Legolas\_58:

(14, 48964), (16, 48919), (18, 48889), (Start: 55 @48763 has 157 MA's), (Start: 57 @48760 has 105 MA's), (73, 48721), (88, 48640), (109, 48478), (110, 48475), (121, 48424),

Gene: LeiMonet\_58 Start: 48282, Stop: 47911, Start Num: 55

Candidate Starts for LeiMonet\_58:

(14, 48483), (16, 48438), (18, 48408), (34, 48321), (Start: 55 @48282 has 157 MA's), (Start: 57 @48279 has 105 MA's), (73, 48240), (87, 48168), (109, 47997), (110, 47994), (121, 47943),

Gene: LemonSlice\_57 Start: 48354, Stop: 47983, Start Num: 55

Candidate Starts for LemonSlice\_57:

(14, 48555), (16, 48510), (18, 48480), (Start: 55 @48354 has 157 MA's), (Start: 57 @48351 has 105 MA's), (73, 48312), (80, 48294), (87, 48240), (88, 48231), (109, 48069), (110, 48066), (121, 48015),

Gene: Lethe\_25 Start: 8393, Stop: 8749, Start Num: 58

Candidate Starts for Lethe\_25:

(Start: 58 @8393 has 177 MA's), (102, 8600), (121, 8696),

Gene: Leviathan\_37 Start: 27676, Stop: 28074, Start Num: 46

Candidate Starts for Leviathan\_37:

(Start: 46 @27676 has 47 MA's), (70, 27724), (111, 27967), (112, 27973), (120, 28003),

Gene: LifeSavor\_27 Start: 8150, Stop: 8506, Start Num: 58

Candidate Starts for LifeSavor\_27:

(Start: 58 @8150 has 177 MA's), (89, 8264), (102, 8357), (121, 8453),

Gene: LilHazelnut\_43 Start: 33316, Stop: 32891, Start Num: 30

Candidate Starts for LilHazelnut\_43:

(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: LilTurb\_36 Start: 27509, Stop: 27907, Start Num: 46

Candidate Starts for LilTurb\_36:

(Start: 46 @27509 has 47 MA's), (70, 27557), (111, 27800), (112, 27806), (120, 27836),

Gene: LinStu\_26 Start: 9052, Stop: 9408, Start Num: 58

Candidate Starts for LinStu\_26:

(Start: 58 @9052 has 177 MA's), (102, 9259), (121, 9355),

Gene: Littleton\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for Littleton\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Loanshark\_26 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for Loanshark\_26:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Lokk\_39 Start: 28500, Stop: 28871, Start Num: 62

Candidate Starts for Lokk\_39:

(Start: 62 @28500 has 4 MA's), (91, 28617), (102, 28692), (111, 28758), (120, 28794), (128, 28833), (131, 28845), (135, 28851),

Gene: LolaVinca\_29 Start: 9911, Stop: 10267, Start Num: 58

Candidate Starts for LolaVinca\_29:

(Start: 58 @9911 has 177 MA's), (89, 10025), (102, 10118), (121, 10214),

Gene: Lolalove\_50 Start: 48182, Stop: 47784, Start Num: 40

Candidate Starts for Lolalove\_50:

(5, 48515), (Start: 40 @48182 has 16 MA's), (66, 48134), (67, 48131), (78, 48110), (111, 47885), (115, 47864), (123, 47828),

Gene: Longacauda\_57 Start: 48726, Stop: 48355, Start Num: 55

Candidate Starts for Longacauda\_57:

(14, 48927), (16, 48882), (18, 48852), (Start: 55 @48726 has 157 MA's), (Start: 57 @48723 has 105 MA's), (73, 48684), (88, 48603), (109, 48441), (110, 48438), (121, 48387),

Gene: Lopsy\_53 Start: 47237, Stop: 46869, Start Num: 57

Candidate Starts for Lopsy\_53:

(14, 47441), (16, 47396), (18, 47366), (34, 47279), (Start: 55 @47240 has 157 MA's), (Start: 57 @47237 has 105 MA's), (73, 47198), (87, 47126), (88, 47117), (109, 46955), (110, 46952), (121, 46901),

Gene: LordLeafolot\_31 Start: 10269, Stop: 10625, Start Num: 58  
Candidate Starts for LordLeafolot\_31:  
(Start: 58 @10269 has 177 MA's), (89, 10383), (102, 10476), (121, 10572),

Gene: LostAndPhound\_56 Start: 48369, Stop: 47998, Start Num: 55  
Candidate Starts for LostAndPhound\_56:  
(14, 48570), (16, 48525), (18, 48495), (Start: 55 @48369 has 157 MA's), (Start: 57 @48366 has 105 MA's), (73, 48327), (87, 48255), (109, 48084), (110, 48081), (121, 48030),

Gene: LuckyMarjie\_54 Start: 48045, Stop: 47674, Start Num: 55  
Candidate Starts for LuckyMarjie\_54:  
(14, 48246), (16, 48201), (18, 48171), (34, 48084), (Start: 55 @48045 has 157 MA's), (Start: 57 @48042 has 105 MA's), (88, 47922), (109, 47760), (110, 47757), (121, 47706),

Gene: Luke\_43 Start: 33271, Stop: 32846, Start Num: 30  
Candidate Starts for Luke\_43:  
(17, 33364), (Start: 30 @33271 has 39 MA's), (Start: 43 @33247 has 2 MA's), (65, 33205), (66, 33202), (74, 33181), (81, 33160), (85, 33130), (99, 33028), (120, 32914), (121, 32899), (122, 32896), (128, 32875), (136, 32854),

Gene: Lukilu\_19 Start: 7293, Stop: 7649, Start Num: 58  
Candidate Starts for Lukilu\_19:  
(Start: 58 @7293 has 177 MA's), (102, 7500), (121, 7596),

Gene: Lulumae\_54 Start: 48030, Stop: 47659, Start Num: 55  
Candidate Starts for Lulumae\_54:  
(14, 48231), (16, 48186), (18, 48156), (34, 48069), (Start: 55 @48030 has 157 MA's), (Start: 57 @48027 has 105 MA's), (88, 47907), (109, 47745), (110, 47742), (121, 47691),

Gene: Lulwa\_54 Start: 47669, Stop: 47298, Start Num: 55  
Candidate Starts for Lulwa\_54:  
(14, 47870), (16, 47825), (18, 47795), (Start: 55 @47669 has 157 MA's), (Start: 57 @47666 has 105 MA's), (73, 47627), (87, 47555), (109, 47384), (110, 47381), (121, 47330),

Gene: Lumine\_57 Start: 48514, Stop: 48143, Start Num: 55  
Candidate Starts for Lumine\_57:  
(14, 48715), (16, 48670), (18, 48640), (Start: 55 @48514 has 157 MA's), (Start: 57 @48511 has 105 MA's), (73, 48472), (88, 48391), (109, 48229), (110, 48226), (121, 48175),

Gene: Luna22\_41 Start: 33316, Stop: 32891, Start Num: 30  
Candidate Starts for Luna22\_41:  
(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: MRabcd\_55 Start: 48427, Stop: 48056, Start Num: 55  
Candidate Starts for MRabcd\_55:  
(14, 48628), (16, 48583), (18, 48553), (Start: 55 @48427 has 157 MA's), (Start: 57 @48424 has 105 MA's), (73, 48385), (87, 48313), (109, 48142), (110, 48139), (121, 48088),

Gene: Maby2021\_27 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for Maby2021\_27:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: MacnCheese\_77 Start: 50498, Stop: 50944, Start Num: 22

Candidate Starts for MacnCheese\_77:

(Start: 22 @50498 has 1 MA's), (Start: 38 @50567 has 15 MA's), (Start: 46 @50582 has 47 MA's), (51, 50588), (Start: 58 @50603 has 177 MA's), (69, 50618), (71, 50624), (91, 50708), (100, 50768), (102, 50783), (117, 50876),

Gene: MadKillah\_77 Start: 47366, Stop: 46989, Start Num: 48

Candidate Starts for MadKillah\_77:

(Start: 48 @47366 has 24 MA's), (74, 47306), (79, 47294), (89, 47231), (102, 47138), (104, 47132), (107, 47087), (118, 47042), (125, 47003), (127, 47000),

Gene: Mag7\_56 Start: 48272, Stop: 47901, Start Num: 55

Candidate Starts for Mag7\_56:

(8, 48632), (14, 48473), (16, 48428), (18, 48398), (Start: 55 @48272 has 157 MA's), (Start: 57 @48269 has 105 MA's), (73, 48230), (80, 48212), (87, 48158), (88, 48149), (109, 47987), (110, 47984), (121, 47933),

Gene: Magic8\_57 Start: 48665, Stop: 48297, Start Num: 57

Candidate Starts for Magic8\_57:

(14, 48869), (16, 48824), (18, 48794), (Start: 55 @48668 has 157 MA's), (Start: 57 @48665 has 105 MA's), (73, 48626), (88, 48545), (109, 48383), (110, 48380), (121, 48329),

Gene: Magpie\_48 Start: 48017, Stop: 47619, Start Num: 40

Candidate Starts for Magpie\_48:

(Start: 40 @48017 has 16 MA's), (66, 47969), (67, 47966), (78, 47945), (111, 47720), (115, 47699), (123, 47663),

Gene: Magsby\_42 Start: 30667, Stop: 31065, Start Num: 30

Candidate Starts for Magsby\_42:

(Start: 30 @30667 has 39 MA's), (60, 30718), (66, 30733), (102, 30916), (104, 30922), (112, 30973), (119, 30994), (120, 30997), (121, 31012), (128, 31036), (133, 31051), (135, 31054),

Gene: Malec\_38 Start: 28247, Stop: 28645, Start Num: 46

Candidate Starts for Malec\_38:

(Start: 46 @28247 has 47 MA's), (90, 28388), (111, 28538), (112, 28544), (120, 28574),

Gene: Mana\_55 Start: 48352, Stop: 47981, Start Num: 55

Candidate Starts for Mana\_55:

(14, 48553), (16, 48508), (18, 48478), (Start: 55 @48352 has 157 MA's), (Start: 57 @48349 has 105 MA's), (73, 48310), (87, 48238), (109, 48067), (110, 48064), (121, 48013),

Gene: Manad\_55 Start: 48327, Stop: 47956, Start Num: 55

Candidate Starts for Manad\_55:

(14, 48528), (16, 48483), (18, 48453), (34, 48366), (Start: 55 @48327 has 157 MA's), (Start: 57 @48324 has 105 MA's), (73, 48285), (87, 48213), (88, 48204), (109, 48042), (110, 48039), (121, 47988),

Gene: Mangeria\_29 Start: 9225, Stop: 9581, Start Num: 58

Candidate Starts for Mangeria\_29:

(Start: 58 @9225 has 177 MA's), (89, 9339), (102, 9432), (121, 9528),

Gene: Mao1\_56 Start: 45715, Stop: 46089, Start Num: 30

Candidate Starts for Mao1\_56:

(20, 45658), (Start: 30 @45715 has 39 MA's), (36, 45730), (44, 45745), (64, 45781), (75, 45808), (102, 45958), (120, 46036), (121, 46051),

Gene: Marcoliusprime\_39 Start: 31497, Stop: 31114, Start Num: 35

Candidate Starts for Marcoliusprime\_39:

(Start: 35 @31497 has 15 MA's), (69, 31437), (86, 31374), (94, 31323), (102, 31266), (112, 31194), (121, 31149), (122, 31146), (128, 31125),

Gene: MarkPhew\_75 Start: 49591, Stop: 49965, Start Num: 38

Candidate Starts for MarkPhew\_75:

(Start: 38 @49591 has 15 MA's), (71, 49648), (86, 49696), (94, 49747), (96, 49768), (102, 49804), (106, 49840), (113, 49879), (117, 49897), (120, 49906), (121, 49921),

Gene: Marshawn\_72 Start: 49975, Stop: 50358, Start Num: 38

Candidate Starts for Marshawn\_72:

(Start: 38 @49975 has 15 MA's), (Start: 42 @49981 has 1 MA's), (69, 50035), (70, 50038), (75, 50050), (91, 50122), (94, 50140), (96, 50161), (102, 50197), (106, 50233), (113, 50272), (117, 50290), (120, 50299), (134, 50353),

Gene: Maru\_56 Start: 48788, Stop: 48420, Start Num: 57

Candidate Starts for Maru\_56:

(14, 48992), (16, 48947), (18, 48917), (Start: 55 @48791 has 157 MA's), (Start: 57 @48788 has 105 MA's), (73, 48749), (87, 48677), (109, 48506), (110, 48503), (121, 48452),

Gene: Mask\_57 Start: 48051, Stop: 48449, Start Num: 29

Candidate Starts for Mask\_57:

(Start: 29 @48051 has 2 MA's), (47, 48081), (66, 48117), (102, 48300), (104, 48306), (108, 48345), (112, 48357), (119, 48378), (120, 48381), (121, 48396), (133, 48435), (135, 48438),

Gene: Maskar\_57 Start: 48338, Stop: 47967, Start Num: 55

Candidate Starts for Maskar\_57:

(8, 48698), (14, 48539), (16, 48494), (18, 48464), (Start: 55 @48338 has 157 MA's), (Start: 57 @48335 has 105 MA's), (73, 48296), (80, 48278), (87, 48224), (88, 48215), (109, 48053), (110, 48050), (121, 47999),

Gene: Matalotodo\_55 Start: 48362, Stop: 47991, Start Num: 55

Candidate Starts for Matalotodo\_55:

(14, 48563), (16, 48518), (18, 48488), (Start: 55 @48362 has 157 MA's), (Start: 57 @48359 has 105 MA's), (73, 48320), (88, 48239), (109, 48077), (110, 48074), (121, 48023),

Gene: Matsumoto\_25 Start: 8115, Stop: 8471, Start Num: 58

Candidate Starts for Matsumoto\_25:

(Start: 58 @8115 has 177 MA's), (89, 8229), (102, 8322), (121, 8418),

Gene: McGee\_25 Start: 7341, Stop: 7697, Start Num: 58

Candidate Starts for McGee\_25:

(Start: 58 @7341 has 177 MA's), (102, 7548), (121, 7644),

Gene: McWolfish\_25 Start: 8449, Stop: 8805, Start Num: 58

Candidate Starts for McWolfish\_25:

(Start: 58 @8449 has 177 MA's), (102, 8656), (121, 8752),

Gene: Mcshane\_55 Start: 48347, Stop: 47979, Start Num: 57

Candidate Starts for Mcshane\_55:

(14, 48551), (16, 48506), (18, 48476), (Start: 55 @48350 has 157 MA's), (Start: 57 @48347 has 105 MA's), (73, 48308), (88, 48227), (109, 48065), (110, 48062), (121, 48011),

Gene: Mecca\_56 Start: 48873, Stop: 48502, Start Num: 55

Candidate Starts for Mecca\_56:

(14, 49074), (16, 49029), (18, 48999), (Start: 55 @48873 has 157 MA's), (Start: 57 @48870 has 105 MA's), (73, 48831), (88, 48750), (109, 48588), (110, 48585), (121, 48534),

Gene: Megamind\_26 Start: 8690, Stop: 9046, Start Num: 58

Candidate Starts for Megamind\_26:

(Start: 58 @8690 has 177 MA's), (89, 8804), (102, 8897), (121, 8993),

Gene: Megamind20\_57 Start: 48338, Stop: 47967, Start Num: 55

Candidate Starts for Megamind20\_57:

(14, 48539), (16, 48494), (18, 48464), (Start: 55 @48338 has 157 MA's), (Start: 57 @48335 has 105 MA's), (73, 48296), (88, 48215), (109, 48053), (110, 48050), (121, 47999),

Gene: Megatron\_57 Start: 48864, Stop: 48493, Start Num: 55

Candidate Starts for Megatron\_57:

(14, 49065), (16, 49020), (18, 48990), (Start: 55 @48864 has 157 MA's), (Start: 57 @48861 has 105 MA's), (73, 48822), (88, 48741), (109, 48579), (110, 48576), (121, 48525),

Gene: Megatron06\_72 Start: 52721, Stop: 53110, Start Num: 58

Candidate Starts for Megatron06\_72:

(Start: 58 @52721 has 177 MA's), (69, 52748), (75, 52760), (84, 52805), (85, 52808), (89, 52838), (108, 52988), (124, 53060),

Gene: Melc17\_56 Start: 49179, Stop: 48811, Start Num: 57

Candidate Starts for Melc17\_56:

(14, 49383), (16, 49338), (18, 49308), (Start: 55 @49182 has 157 MA's), (Start: 57 @49179 has 105 MA's), (73, 49140), (88, 49059), (109, 48897), (110, 48894), (121, 48843),

Gene: Melpomini\_25 Start: 7556, Stop: 7912, Start Num: 58

Candidate Starts for Melpomini\_25:

(Start: 58 @7556 has 177 MA's), (89, 7670), (102, 7763), (121, 7859),

Gene: MelsMeow\_56 Start: 48391, Stop: 48020, Start Num: 55

Candidate Starts for MelsMeow\_56:

(8, 48751), (14, 48592), (16, 48547), (18, 48517), (Start: 55 @48391 has 157 MA's), (Start: 57 @48388 has 105 MA's), (73, 48349), (80, 48331), (87, 48277), (88, 48268), (109, 48106), (110, 48103), (121, 48052),

Gene: Melville\_45 Start: 30651, Stop: 31049, Start Num: 30

Candidate Starts for Melville\_45:

(Start: 30 @30651 has 39 MA's), (60, 30702), (66, 30717), (102, 30900), (104, 30906), (112, 30957), (119, 30978), (120, 30981), (121, 30996), (128, 31020), (133, 31035), (135, 31038),

Gene: Mendokysei\_38 Start: 30582, Stop: 30983, Start Num: 35  
Candidate Starts for Mendokysei\_38:  
(Start: 35 @30582 has 15 MA's), (Start: 46 @30600 has 47 MA's), (69, 30648), (98, 30807), (102, 30831), (121, 30951),

Gene: Mesh1\_57 Start: 48881, Stop: 48513, Start Num: 57  
Candidate Starts for Mesh1\_57:  
(14, 49085), (16, 49040), (18, 49010), (Start: 55 @48884 has 157 MA's), (Start: 57 @48881 has 105 MA's), (73, 48842), (87, 48770), (109, 48599), (110, 48596), (121, 48545),

Gene: Mesmerelda\_57 Start: 48324, Stop: 47953, Start Num: 55  
Candidate Starts for Mesmerelda\_57:  
(14, 48525), (16, 48480), (18, 48450), (Start: 55 @48324 has 157 MA's), (Start: 57 @48321 has 105 MA's), (73, 48282), (88, 48201), (109, 48039), (110, 48036), (121, 47985),

Gene: MichaelPhcott\_56 Start: 48266, Stop: 47898, Start Num: 57  
Candidate Starts for MichaelPhcott\_56:  
(8, 48629), (14, 48470), (16, 48425), (18, 48395), (Start: 55 @48269 has 157 MA's), (Start: 57 @48266 has 105 MA's), (73, 48227), (80, 48209), (87, 48155), (88, 48146), (109, 47984), (110, 47981), (121, 47930),

Gene: MiculUcigas\_36 Start: 27376, Stop: 27771, Start Num: 46  
Candidate Starts for MiculUcigas\_36:  
(Start: 46 @27376 has 47 MA's), (106, 27634), (111, 27664), (120, 27700),

Gene: MikeLiesIn\_26 Start: 8699, Stop: 9055, Start Num: 58  
Candidate Starts for MikeLiesIn\_26:  
(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Miko\_39 Start: 28708, Stop: 29079, Start Num: 62  
Candidate Starts for Miko\_39:  
(Start: 62 @28708 has 4 MA's), (91, 28825), (102, 28900), (106, 28936), (111, 28966), (120, 29002), (128, 29041), (131, 29053), (135, 29059),

Gene: Mikota\_54 Start: 47646, Stop: 47278, Start Num: 57  
Candidate Starts for Mikota\_54:  
(14, 47850), (16, 47805), (18, 47775), (34, 47688), (Start: 55 @47649 has 157 MA's), (Start: 57 @47646 has 105 MA's), (73, 47607), (88, 47526), (109, 47364), (110, 47361), (121, 47310),

Gene: Mikro\_24 Start: 9185, Stop: 9541, Start Num: 58  
Candidate Starts for Mikro\_24:  
(Start: 58 @9185 has 177 MA's), (89, 9299), (102, 9392), (121, 9488),

Gene: Milly\_39 Start: 31470, Stop: 31087, Start Num: 35  
Candidate Starts for Milly\_39:  
(Start: 35 @31470 has 15 MA's), (69, 31410), (86, 31347), (94, 31296), (102, 31239), (112, 31167), (121, 31122), (128, 31098),

Gene: MiniBoss\_54 Start: 47652, Stop: 47284, Start Num: 57  
Candidate Starts for MiniBoss\_54:  
(14, 47856), (16, 47811), (18, 47781), (34, 47694), (Start: 55 @47655 has 157 MA's), (Start: 57 @47652 has 105 MA's), (73, 47613), (88, 47532), (109, 47370), (110, 47367), (121, 47316),



Gene: MitKao\_56 Start: 48359, Stop: 47991, Start Num: 57  
Candidate Starts for MitKao\_56:  
(14, 48563), (16, 48518), (18, 48488), (Start: 55 @48362 has 157 MA's), (Start: 57 @48359 has 105 MA's), (73, 48320), (87, 48248), (109, 48077), (110, 48074), (121, 48023),

Gene: MoMoMixon\_27 Start: 9016, Stop: 9372, Start Num: 58  
Candidate Starts for MoMoMixon\_27:  
(Start: 58 @9016 has 177 MA's), (102, 9223), (121, 9319),

Gene: Momo\_25 Start: 8154, Stop: 8510, Start Num: 58  
Candidate Starts for Momo\_25:  
(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Mopey\_57 Start: 42726, Stop: 43106, Start Num: 52  
Candidate Starts for Mopey\_57:  
(Start: 52 @42726 has 21 MA's), (68, 42759), (69, 42762), (70, 42765), (84, 42819), (85, 42822), (101, 42942), (121, 43053), (122, 43056),

Gene: Morgushi\_56 Start: 48348, Stop: 47980, Start Num: 57  
Candidate Starts for Morgushi\_56:  
(14, 48552), (16, 48507), (18, 48477), (Start: 55 @48351 has 157 MA's), (Start: 57 @48348 has 105 MA's), (73, 48309), (87, 48237), (109, 48066), (110, 48063), (121, 48012),

Gene: Mori\_76 Start: 47628, Stop: 47251, Start Num: 48  
Candidate Starts for Mori\_76:  
(Start: 48 @47628 has 24 MA's), (74, 47568), (79, 47556), (89, 47493), (102, 47400), (104, 47394), (107, 47349), (118, 47304), (125, 47265), (127, 47262),

Gene: Morizzled23\_25 Start: 7556, Stop: 7912, Start Num: 58  
Candidate Starts for Morizzled23\_25:  
(Start: 58 @7556 has 177 MA's), (89, 7670), (102, 7763), (121, 7859),

Gene: Morty\_57 Start: 48873, Stop: 48502, Start Num: 55  
Candidate Starts for Morty\_57:  
(14, 49074), (16, 49029), (18, 48999), (Start: 55 @48873 has 157 MA's), (Start: 57 @48870 has 105 MA's), (73, 48831), (88, 48750), (109, 48588), (110, 48585), (121, 48534),

Gene: Mosaic\_55 Start: 48356, Stop: 47985, Start Num: 55  
Candidate Starts for Mosaic\_55:  
(14, 48557), (16, 48512), (18, 48482), (Start: 55 @48356 has 157 MA's), (Start: 57 @48353 has 105 MA's), (73, 48314), (87, 48242), (109, 48071), (110, 48068), (121, 48017),

Gene: MrPhizzler\_57 Start: 48818, Stop: 48447, Start Num: 55  
Candidate Starts for MrPhizzler\_57:  
(8, 49178), (14, 49019), (16, 48974), (18, 48944), (Start: 55 @48818 has 157 MA's), (Start: 57 @48815 has 105 MA's), (73, 48776), (87, 48704), (109, 48533), (110, 48530), (121, 48479),

Gene: Mudslide\_49 Start: 48447, Stop: 48049, Start Num: 40  
Candidate Starts for Mudslide\_49:  
(Start: 40 @48447 has 16 MA's), (66, 48399), (67, 48396), (78, 48375), (111, 48150), (115, 48129), (123, 48093),

Gene: Mufasa\_40 Start: 31391, Stop: 31008, Start Num: 35

Candidate Starts for Mufasa\_40:

(Start: 35 @31391 has 15 MA's), (69, 31331), (86, 31268), (94, 31217), (99, 31181), (102, 31160), (112, 31088), (121, 31043),

Gene: Mulan\_56 Start: 48587, Stop: 48219, Start Num: 57

Candidate Starts for Mulan\_56:

(14, 48791), (16, 48746), (18, 48716), (Start: 55 @48590 has 157 MA's), (Start: 57 @48587 has 105 MA's), (73, 48548), (88, 48467), (109, 48305), (110, 48302), (121, 48251),

Gene: Murai\_76 Start: 47760, Stop: 47383, Start Num: 48

Candidate Starts for Murai\_76:

(Start: 48 @47760 has 24 MA's), (74, 47700), (79, 47688), (89, 47625), (102, 47532), (104, 47526), (107, 47481), (118, 47436), (125, 47397), (127, 47394),

Gene: Murdoc\_55 Start: 48349, Stop: 47981, Start Num: 57

Candidate Starts for Murdoc\_55:

(14, 48553), (16, 48508), (18, 48478), (Start: 55 @48352 has 157 MA's), (Start: 57 @48349 has 105 MA's), (73, 48310), (88, 48229), (109, 48067), (110, 48064), (121, 48013),

Gene: Mutante\_56 Start: 48359, Stop: 47991, Start Num: 57

Candidate Starts for Mutante\_56:

(14, 48563), (16, 48518), (18, 48488), (Start: 55 @48362 has 157 MA's), (Start: 57 @48359 has 105 MA's), (73, 48320), (88, 48239), (109, 48077), (110, 48074), (121, 48023),

Gene: Mysterious\_54 Start: 48647, Stop: 48231, Start Num: 39

Candidate Starts for Mysterious\_54:

(4, 49025), (6, 48980), (7, 48977), (Start: 39 @48647 has 7 MA's), (66, 48593), (111, 48332),

Gene: NaSiaTalie\_36 Start: 27374, Stop: 27769, Start Num: 46

Candidate Starts for NaSiaTalie\_36:

(Start: 46 @27374 has 47 MA's), (106, 27632), (111, 27662), (120, 27698),

Gene: Nacho\_0057 Start: 48867, Stop: 48496, Start Num: 55

Candidate Starts for Nacho\_0057:

(14, 49068), (16, 49023), (18, 48993), (Start: 55 @48867 has 157 MA's), (Start: 57 @48864 has 105 MA's), (73, 48825), (88, 48744), (109, 48582), (110, 48579), (121, 48528),

Gene: Naija\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for Naija\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Nairb\_39 Start: 31045, Stop: 31446, Start Num: 35

Candidate Starts for Nairb\_39:

(12, 30802), (Start: 35 @31045 has 15 MA's), (Start: 46 @31063 has 47 MA's), (91, 31219), (98, 31270), (102, 31294), (121, 31414), (122, 31417),

Gene: Nanao\_48 Start: 47151, Stop: 46753, Start Num: 40

Candidate Starts for Nanao\_48:

(Start: 40 @47151 has 16 MA's), (66, 47103), (67, 47100), (78, 47079), (115, 46833), (123, 46797),

Gene: Nangang\_54 Start: 48876, Stop: 48463, Start Num: 39

Candidate Starts for Nangang\_54:

(4, 49254), (6, 49209), (7, 49206), (Start: 39 @48876 has 7 MA's), (73, 48804), (112, 48558), (113, 48555), (120, 48528),

Gene: Napoleon13\_25 Start: 7575, Stop: 7931, Start Num: 58

Candidate Starts for Napoleon13\_25:

(Start: 58 @7575 has 177 MA's), (89, 7689), (102, 7782), (121, 7878),

Gene: Nappy\_27 Start: 8863, Stop: 9219, Start Num: 58

Candidate Starts for Nappy\_27:

(Start: 58 @8863 has 177 MA's), (89, 8977), (102, 9070), (121, 9166),

Gene: Nathan\_57 Start: 48443, Stop: 48072, Start Num: 55

Candidate Starts for Nathan\_57:

(14, 48644), (16, 48599), (18, 48569), (34, 48482), (Start: 55 @48443 has 157 MA's), (Start: 57 @48440 has 105 MA's), (88, 48320), (109, 48158), (110, 48155), (121, 48104),

Gene: Naval22\_28 Start: 8739, Stop: 9095, Start Num: 58

Candidate Starts for Naval22\_28:

(Start: 58 @8739 has 177 MA's), (89, 8853), (102, 8946), (121, 9042),

Gene: NedWong\_27 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for NedWong\_27:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Nehemiah\_53 Start: 48647, Stop: 48231, Start Num: 39

Candidate Starts for Nehemiah\_53:

(4, 49025), (6, 48980), (7, 48977), (Start: 39 @48647 has 7 MA's), (66, 48593), (111, 48332),

Gene: Newman\_55 Start: 48347, Stop: 47976, Start Num: 55

Candidate Starts for Newman\_55:

(14, 48548), (16, 48503), (18, 48473), (34, 48386), (Start: 55 @48347 has 157 MA's), (Start: 57 @48344 has 105 MA's), (73, 48305), (87, 48233), (109, 48062), (110, 48059), (121, 48008),

Gene: Ngannou\_24 Start: 7330, Stop: 7686, Start Num: 58

Candidate Starts for Ngannou\_24:

(Start: 58 @7330 has 177 MA's), (89, 7444), (102, 7537), (121, 7633),

Gene: Nicole21\_57 Start: 48596, Stop: 48228, Start Num: 57

Candidate Starts for Nicole21\_57:

(14, 48800), (16, 48755), (18, 48725), (Start: 55 @48599 has 157 MA's), (Start: 57 @48596 has 105 MA's), (73, 48557), (88, 48476), (109, 48314), (110, 48311), (121, 48260),

Gene: Nidhogg\_27 Start: 8769, Stop: 9125, Start Num: 58

Candidate Starts for Nidhogg\_27:

(Start: 58 @8769 has 177 MA's), (102, 8976), (121, 9072),

Gene: NiebruSaylor\_75 Start: 47016, Stop: 46639, Start Num: 48

Candidate Starts for NiebruSaylor\_75:

(Start: 48 @47016 has 24 MA's), (74, 46956), (79, 46944), (89, 46881), (102, 46788), (104, 46782), (107, 46737), (118, 46692), (125, 46653), (127, 46650),

Gene: Nigel\_50 Start: 48156, Stop: 47758, Start Num: 40

Candidate Starts for Nigel\_50:

(Start: 40 @48156 has 16 MA's), (66, 48108), (67, 48105), (78, 48084), (103, 47919), (111, 47859), (120, 47823),

Gene: NoodleTree\_25 Start: 8186, Stop: 8542, Start Num: 58

Candidate Starts for NoodleTree\_25:

(Start: 58 @8186 has 177 MA's), (102, 8393), (121, 8489),

Gene: Norm\_26 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for Norm\_26:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Nova\_55 Start: 43178, Stop: 43558, Start Num: 52

Candidate Starts for Nova\_55:

(Start: 52 @43178 has 21 MA's), (68, 43211), (69, 43214), (70, 43217), (84, 43271), (85, 43274), (101, 43394), (121, 43505), (122, 43508),

Gene: November\_72 Start: 49896, Stop: 50279, Start Num: 38

Candidate Starts for November\_72:

(Start: 38 @49896 has 15 MA's), (70, 49959), (75, 49971), (96, 50082), (102, 50118), (117, 50211), (120, 50220),

Gene: NuevoMundo\_29 Start: 9756, Stop: 10112, Start Num: 58

Candidate Starts for NuevoMundo\_29:

(Start: 58 @9756 has 177 MA's), (89, 9870), (102, 9963), (121, 10059),

Gene: Numberten\_55 Start: 48342, Stop: 47971, Start Num: 55

Candidate Starts for Numberten\_55:

(8, 48702), (14, 48543), (16, 48498), (18, 48468), (34, 48381), (Start: 55 @48342 has 157 MA's), (Start: 57 @48339 has 105 MA's), (88, 48219), (109, 48057), (110, 48054), (121, 48003),

Gene: Nyala\_55 Start: 48315, Stop: 47947, Start Num: 57

Candidate Starts for Nyala\_55:

(14, 48519), (16, 48474), (18, 48444), (Start: 55 @48318 has 157 MA's), (Start: 57 @48315 has 105 MA's), (73, 48276), (88, 48195), (109, 48033), (110, 48030), (121, 47979),

Gene: OBUpride\_43 Start: 33310, Stop: 32885, Start Num: 30

Candidate Starts for OBUpride\_43:

(17, 33403), (Start: 30 @33310 has 39 MA's), (Start: 43 @33286 has 2 MA's), (65, 33244), (66, 33241), (74, 33220), (81, 33199), (85, 33169), (99, 33067), (120, 32953), (121, 32938), (122, 32935), (128, 32914), (136, 32893),

Gene: OSmaximus\_57 Start: 48906, Stop: 48535, Start Num: 55

Candidate Starts for OSmaximus\_57:

(14, 49107), (16, 49062), (18, 49032), (34, 48945), (Start: 55 @48906 has 157 MA's), (Start: 57 @48903 has 105 MA's), (73, 48864), (87, 48792), (109, 48621), (110, 48618), (121, 48567),

Gene: Oaker\_71 Start: 52771, Stop: 53139, Start Num: 58

Candidate Starts for Oaker\_71:

(Start: 58 @52771 has 177 MA's), (69, 52798), (75, 52810), (85, 52858), (86, 52873), (108, 53035), (120, 53071), (122, 53089),

Gene: Olak\_55 Start: 48318, Stop: 47950, Start Num: 57

Candidate Starts for Olak\_55:

(14, 48522), (16, 48477), (18, 48447), (Start: 55 @48321 has 157 MA's), (Start: 57 @48318 has 105 MA's), (73, 48279), (88, 48198), (109, 48036), (110, 48033), (121, 47982),

Gene: Oline\_56 Start: 48216, Stop: 47845, Start Num: 55

Candidate Starts for Oline\_56:

(8, 48576), (14, 48417), (16, 48372), (18, 48342), (Start: 55 @48216 has 157 MA's), (Start: 57 @48213 has 105 MA's), (73, 48174), (80, 48156), (87, 48102), (88, 48093), (109, 47931), (110, 47928), (121, 47877),

Gene: Olive\_55 Start: 48332, Stop: 47961, Start Num: 55

Candidate Starts for Olive\_55:

(9, 48677), (14, 48533), (16, 48488), (18, 48458), (34, 48371), (Start: 55 @48332 has 157 MA's), (Start: 57 @48329 has 105 MA's), (88, 48209), (109, 48047), (110, 48044), (121, 47993),

Gene: OliverWalter\_55 Start: 48353, Stop: 47982, Start Num: 55

Candidate Starts for OliverWalter\_55:

(14, 48554), (16, 48509), (18, 48479), (34, 48392), (Start: 55 @48353 has 157 MA's), (Start: 57 @48350 has 105 MA's), (73, 48311), (88, 48230), (109, 48068), (110, 48065), (121, 48014),

Gene: Omniscient\_57 Start: 49180, Stop: 48809, Start Num: 55

Candidate Starts for Omniscient\_57:

(8, 49540), (14, 49381), (16, 49336), (18, 49306), (Start: 55 @49180 has 157 MA's), (Start: 57 @49177 has 105 MA's), (73, 49138), (88, 49057), (109, 48895), (110, 48892), (121, 48841),

Gene: Oosterbaan\_56 Start: 48639, Stop: 48271, Start Num: 57

Candidate Starts for Oosterbaan\_56:

(14, 48843), (16, 48798), (18, 48768), (Start: 55 @48642 has 157 MA's), (Start: 57 @48639 has 105 MA's), (73, 48600), (88, 48519), (109, 48357), (110, 48354), (121, 48303),

Gene: Orfeu\_54 Start: 48312, Stop: 47944, Start Num: 57

Candidate Starts for Orfeu\_54:

(14, 48516), (16, 48471), (18, 48441), (Start: 55 @48315 has 157 MA's), (Start: 57 @48312 has 105 MA's), (73, 48273), (88, 48192), (109, 48030), (110, 48027), (121, 47976),

Gene: Orion\_57 Start: 48301, Stop: 47933, Start Num: 57

Candidate Starts for Orion\_57:

(14, 48505), (16, 48460), (18, 48430), (Start: 55 @48304 has 157 MA's), (Start: 57 @48301 has 105 MA's), (73, 48262), (88, 48181), (109, 48019), (110, 48016), (121, 47965),

Gene: Orwigg\_57 Start: 48284, Stop: 47913, Start Num: 55

Candidate Starts for Orwigg\_57:

(14, 48485), (16, 48440), (18, 48410), (Start: 55 @48284 has 157 MA's), (Start: 57 @48281 has 105 MA's), (73, 48242), (88, 48161), (109, 47999), (110, 47996), (121, 47945),

Gene: PBI1\_53 Start: 42653, Stop: 43033, Start Num: 52

Candidate Starts for PBI1\_53:

(Start: 52 @42653 has 21 MA's), (68, 42686), (69, 42689), (70, 42692), (84, 42746), (85, 42749), (101, 42869), (121, 42980), (122, 42983),

Gene: PG1\_57 Start: 48872, Stop: 48504, Start Num: 57

Candidate Starts for PG1\_57:

(14, 49076), (16, 49031), (18, 49001), (Start: 55 @48875 has 157 MA's), (Start: 57 @48872 has 105 MA's), (73, 48833), (88, 48752), (109, 48590), (110, 48587), (121, 48536),

Gene: PLOt\_56 Start: 42705, Stop: 43085, Start Num: 52

Candidate Starts for PLOt\_56:

(Start: 52 @42705 has 21 MA's), (68, 42738), (69, 42741), (70, 42744), (84, 42798), (85, 42801), (101, 42921), (121, 43032), (122, 43035),

Gene: Pacifista\_55 Start: 48314, Stop: 47946, Start Num: 57

Candidate Starts for Pacifista\_55:

(14, 48518), (16, 48473), (18, 48443), (Start: 55 @48317 has 157 MA's), (Start: 57 @48314 has 105 MA's), (73, 48275), (88, 48194), (109, 48032), (110, 48029), (121, 47978),

Gene: Panchino\_39 Start: 31193, Stop: 31591, Start Num: 30

Candidate Starts for Panchino\_39:

(Start: 30 @31193 has 39 MA's), (60, 31244), (66, 31259), (102, 31442), (104, 31448), (112, 31499), (119, 31520), (120, 31523), (121, 31538), (128, 31562), (133, 31577), (135, 31580),

Gene: ParkTD\_25 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for ParkTD\_25:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Parmesanjohn\_42 Start: 30670, Stop: 31068, Start Num: 30

Candidate Starts for Parmesanjohn\_42:

(Start: 30 @30670 has 39 MA's), (60, 30721), (66, 30736), (102, 30919), (104, 30925), (112, 30976), (119, 30997), (120, 31000), (121, 31015), (128, 31039), (133, 31054), (135, 31057),

Gene: Patter\_26 Start: 8171, Stop: 8527, Start Num: 58

Candidate Starts for Patter\_26:

(Start: 58 @8171 has 177 MA's), (89, 8285), (102, 8378), (121, 8474),

Gene: Penelope2018\_56 Start: 42723, Stop: 43103, Start Num: 52

Candidate Starts for Penelope2018\_56:

(Start: 52 @42723 has 21 MA's), (68, 42756), (69, 42759), (70, 42762), (84, 42816), (85, 42819), (101, 42939), (121, 43050), (122, 43053),

Gene: Phamished\_57 Start: 48321, Stop: 47953, Start Num: 57

Candidate Starts for Phamished\_57:

(14, 48525), (16, 48480), (18, 48450), (34, 48363), (Start: 55 @48324 has 157 MA's), (Start: 57 @48321 has 105 MA's), (73, 48282), (88, 48201), (109, 48039), (110, 48036), (121, 47985),

Gene: Pharb\_73 Start: 49246, Stop: 49617, Start Num: 38

Candidate Starts for Pharb\_73:

(Start: 38 @49246 has 15 MA's), (Start: 46 @49261 has 47 MA's), (51, 49267), (69, 49297), (87, 49351), (91, 49381), (96, 49420), (100, 49441), (102, 49456), (106, 49492), (117, 49549), (120, 49558), (132, 49609),

Gene: Phareon\_55 Start: 48039, Stop: 47668, Start Num: 55

Candidate Starts for Phareon\_55:

(14, 48240), (16, 48195), (18, 48165), (34, 48078), (Start: 55 @48039 has 157 MA's), (Start: 57 @48036 has 105 MA's), (88, 47916), (109, 47754), (110, 47751), (121, 47700),

Gene: PhatCats2014\_57 Start: 48879, Stop: 48508, Start Num: 55

Candidate Starts for PhatCats2014\_57:

(14, 49080), (16, 49035), (18, 49005), (Start: 55 @48879 has 157 MA's), (Start: 57 @48876 has 105 MA's), (73, 48837), (88, 48756), (109, 48594), (110, 48591), (121, 48540),

Gene: PhatLouie\_57 Start: 48655, Stop: 48284, Start Num: 55

Candidate Starts for PhatLouie\_57:

(8, 49015), (14, 48856), (16, 48811), (18, 48781), (34, 48694), (Start: 55 @48655 has 157 MA's), (Start: 57 @48652 has 105 MA's), (88, 48532), (109, 48370), (110, 48367), (121, 48316),

Gene: Phelemich\_52 Start: 48646, Stop: 48230, Start Num: 39

Candidate Starts for Phelemich\_52:

(4, 49024), (6, 48979), (7, 48976), (Start: 39 @48646 has 7 MA's), (66, 48592), (111, 48331),

Gene: PhenghisKhan\_56 Start: 48272, Stop: 47904, Start Num: 57

Candidate Starts for PhenghisKhan\_56:

(8, 48635), (14, 48476), (16, 48431), (18, 48401), (Start: 55 @48275 has 157 MA's), (Start: 57 @48272 has 105 MA's), (73, 48233), (80, 48215), (87, 48161), (88, 48152), (109, 47990), (110, 47987), (121, 47936),

Gene: Pherdinand\_57 Start: 48334, Stop: 47963, Start Num: 55

Candidate Starts for Pherdinand\_57:

(14, 48535), (16, 48490), (18, 48460), (Start: 55 @48334 has 157 MA's), (Start: 57 @48331 has 105 MA's), (73, 48292), (88, 48211), (109, 48049), (110, 48046), (121, 47995),

Gene: Phergie\_57 Start: 48264, Stop: 47896, Start Num: 57

Candidate Starts for Phergie\_57:

(8, 48627), (14, 48468), (16, 48423), (18, 48393), (Start: 55 @48267 has 157 MA's), (Start: 57 @48264 has 105 MA's), (73, 48225), (80, 48207), (87, 48153), (88, 48144), (109, 47982), (110, 47979), (121, 47928),

Gene: Phipps\_56 Start: 48152, Stop: 47781, Start Num: 55

Candidate Starts for Phipps\_56:

(14, 48353), (16, 48308), (18, 48278), (Start: 55 @48152 has 157 MA's), (Start: 57 @48149 has 105 MA's), (73, 48110), (88, 48029), (109, 47867), (110, 47864), (121, 47813),

Gene: Phlegm\_28 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for Phlegm\_28:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Phleuron\_56 Start: 48269, Stop: 47901, Start Num: 57

Candidate Starts for Phleuron\_56:

(8, 48632), (14, 48473), (16, 48428), (18, 48398), (Start: 55 @48272 has 157 MA's), (Start: 57 @48269 has 105 MA's), (73, 48230), (80, 48212), (87, 48158), (88, 48149), (109, 47987), (110, 47984), (121, 47933),

Gene: Phloss\_40 Start: 30077, Stop: 30475, Start Num: 30

Candidate Starts for Phloss\_40:

(Start: 30 @30077 has 39 MA's), (60, 30128), (66, 30143), (102, 30326), (104, 30332), (112, 30383), (119, 30404), (120, 30407), (121, 30422), (128, 30446), (133, 30461), (135, 30464),

Gene: Phox\_25 Start: 8866, Stop: 9222, Start Num: 58

Candidate Starts for Phox\_25:

(Start: 58 @8866 has 177 MA's), (102, 9073), (121, 9169),

Gene: PhrankReynolds\_55 Start: 48272, Stop: 47901, Start Num: 55  
Candidate Starts for PhrankReynolds\_55:  
(8, 48632), (14, 48473), (16, 48428), (18, 48398), (Start: 55 @48272 has 157 MA's), (Start: 57 @48269 has 105 MA's), (73, 48230), (80, 48212), (87, 48158), (88, 48149), (109, 47987), (110, 47984), (121, 47933),

Gene: Phrann\_44 Start: 31873, Stop: 32271, Start Num: 30  
Candidate Starts for Phrann\_44:  
(Start: 30 @31873 has 39 MA's), (60, 31924), (66, 31939), (102, 32122), (104, 32128), (112, 32179), (119, 32200), (120, 32203), (121, 32218), (128, 32242), (133, 32257), (135, 32260),

Gene: Phrappuccino\_28 Start: 15030, Stop: 15431, Start Num: 41  
Candidate Starts for Phrappuccino\_28:  
(Start: 41 @15030 has 2 MA's), (66, 15078), (79, 15108), (97, 15240), (112, 15339), (120, 15363), (121, 15378), (133, 15417),

Gene: Phreeze\_70 Start: 51738, Stop: 52106, Start Num: 58  
Candidate Starts for Phreeze\_70:  
(Start: 58 @51738 has 177 MA's), (69, 51765), (75, 51777), (85, 51825), (86, 51840), (108, 52002), (120, 52038), (122, 52056),

Gene: PhrodoBaggins\_57 Start: 48737, Stop: 48369, Start Num: 57  
Candidate Starts for PhrodoBaggins\_57:  
(14, 48941), (16, 48896), (18, 48866), (Start: 55 @48740 has 157 MA's), (Start: 57 @48737 has 105 MA's), (73, 48698), (88, 48617), (109, 48455), (110, 48452), (121, 48401),

Gene: Phunky\_55 Start: 48336, Stop: 47965, Start Num: 55  
Candidate Starts for Phunky\_55:  
(14, 48537), (16, 48492), (18, 48462), (34, 48375), (Start: 55 @48336 has 157 MA's), (Start: 57 @48333 has 105 MA's), (88, 48213), (109, 48051), (110, 48048), (121, 47997),

Gene: Phusco\_26 Start: 8150, Stop: 8506, Start Num: 58  
Candidate Starts for Phusco\_26:  
(Start: 58 @8150 has 177 MA's), (89, 8264), (102, 8357), (121, 8453),

Gene: Pier\_28 Start: 8857, Stop: 9213, Start Num: 58  
Candidate Starts for Pier\_28:  
(Start: 58 @8857 has 177 MA's), (89, 8971), (102, 9064), (121, 9160),

Gene: Piglet\_0056 Start: 48852, Stop: 48481, Start Num: 55  
Candidate Starts for Piglet\_0056:  
(14, 49053), (16, 49008), (18, 48978), (Start: 55 @48852 has 157 MA's), (Start: 57 @48849 has 105 MA's), (73, 48810), (88, 48729), (109, 48567), (110, 48564), (121, 48513),

Gene: PinheadLarry\_57 Start: 48874, Stop: 48506, Start Num: 57  
Candidate Starts for PinheadLarry\_57:  
(14, 49078), (16, 49033), (18, 49003), (Start: 55 @48877 has 157 MA's), (Start: 57 @48874 has 105 MA's), (73, 48835), (88, 48754), (109, 48592), (110, 48589), (121, 48538),

Gene: Pinkcreek\_18 Start: 6561, Stop: 6917, Start Num: 58  
Candidate Starts for Pinkcreek\_18:  
(Start: 58 @6561 has 177 MA's), (102, 6768), (121, 6864),



Gene: Pinkman\_55 Start: 48210, Stop: 47839, Start Num: 55

Candidate Starts for Pinkman\_55:

(8, 48570), (14, 48411), (16, 48366), (18, 48336), (Start: 55 @48210 has 157 MA's), (Start: 57 @48207 has 105 MA's), (73, 48168), (80, 48150), (87, 48096), (88, 48087), (109, 47925), (110, 47922), (121, 47871),

Gene: Pio\_29 Start: 9548, Stop: 9904, Start Num: 58

Candidate Starts for Pio\_29:

(Start: 58 @9548 has 177 MA's), (89, 9662), (102, 9755), (121, 9851),

Gene: Pipsqueak\_55 Start: 48365, Stop: 47994, Start Num: 55

Candidate Starts for Pipsqueak\_55:

(14, 48566), (16, 48521), (18, 48491), (Start: 55 @48365 has 157 MA's), (Start: 57 @48362 has 105 MA's), (73, 48323), (88, 48242), (109, 48080), (110, 48077), (121, 48026),

Gene: Pipsqueaks\_42 Start: 30647, Stop: 31045, Start Num: 30

Candidate Starts for Pipsqueaks\_42:

(Start: 30 @30647 has 39 MA's), (60, 30698), (66, 30713), (102, 30896), (104, 30902), (112, 30953), (119, 30974), (120, 30977), (121, 30992), (128, 31016), (133, 31031), (135, 31034),

Gene: Piro94\_36 Start: 27692, Stop: 28087, Start Num: 46

Candidate Starts for Piro94\_36:

(Start: 46 @27692 has 47 MA's), (106, 27950), (111, 27980), (120, 28016),

Gene: Pivoine\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for Pivoine\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Pixie\_74 Start: 49525, Stop: 49920, Start Num: 32

Candidate Starts for Pixie\_74:

(Start: 32 @49525 has 5 MA's), (51, 49561), (69, 49597), (100, 49744), (102, 49759), (106, 49795), (132, 49912),

Gene: Placalicious\_56 Start: 48864, Stop: 48496, Start Num: 57

Candidate Starts for Placalicious\_56:

(14, 49068), (16, 49023), (18, 48993), (Start: 55 @48867 has 157 MA's), (Start: 57 @48864 has 105 MA's), (73, 48825), (88, 48744), (109, 48582), (110, 48579), (121, 48528),

Gene: Pleione\_28 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for Pleione\_28:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Plmatters\_55 Start: 48339, Stop: 47968, Start Num: 55

Candidate Starts for Plmatters\_55:

(8, 48699), (14, 48540), (16, 48495), (18, 48465), (Start: 55 @48339 has 157 MA's), (Start: 57 @48336 has 105 MA's), (73, 48297), (87, 48225), (109, 48054), (110, 48051), (121, 48000),

Gene: Podrick\_54 Start: 47673, Stop: 47305, Start Num: 57

Candidate Starts for Podrick\_54:

(14, 47877), (16, 47832), (18, 47802), (Start: 55 @47676 has 157 MA's), (Start: 57 @47673 has 105 MA's), (73, 47634), (87, 47562), (109, 47391), (110, 47388), (121, 47337),

Gene: Pops\_55 Start: 48324, Stop: 47953, Start Num: 55

Candidate Starts for Pops\_55:

(9, 48666), (14, 48525), (16, 48480), (18, 48450), (Start: 55 @48324 has 157 MA's), (Start: 57 @48321 has 105 MA's), (73, 48282), (80, 48264), (87, 48210), (88, 48201), (109, 48039), (110, 48036), (121, 47985),

Gene: Poster\_48 Start: 47152, Stop: 46754, Start Num: 40

Candidate Starts for Poster\_48:

(Start: 40 @47152 has 16 MA's), (66, 47104), (67, 47101), (78, 47080), (115, 46834), (123, 46798),

Gene: Potter\_55 Start: 48373, Stop: 48002, Start Num: 55

Candidate Starts for Potter\_55:

(14, 48574), (16, 48529), (18, 48499), (Start: 55 @48373 has 157 MA's), (Start: 57 @48370 has 105 MA's), (73, 48331), (87, 48259), (109, 48088), (110, 48085), (121, 48034),

Gene: Power\_35 Start: 27298, Stop: 27681, Start Num: 46

Candidate Starts for Power\_35:

(Start: 46 @27298 has 47 MA's), (85, 27382), (100, 27490), (106, 27541), (111, 27571), (131, 27658),

Gene: Prager\_56 Start: 42742, Stop: 43122, Start Num: 52

Candidate Starts for Prager\_56:

(Start: 52 @42742 has 21 MA's), (68, 42775), (69, 42778), (70, 42781), (84, 42835), (85, 42838), (101, 42958), (121, 43069), (122, 43072),

Gene: Prickles\_57 Start: 48631, Stop: 48260, Start Num: 55

Candidate Starts for Prickles\_57:

(14, 48832), (16, 48787), (18, 48757), (34, 48670), (Start: 55 @48631 has 157 MA's), (Start: 57 @48628 has 105 MA's), (73, 48589), (80, 48571), (88, 48508), (109, 48346), (110, 48343), (121, 48292),

Gene: Prince\_49 Start: 48357, Stop: 47959, Start Num: 40

Candidate Starts for Prince\_49:

(5, 48690), (Start: 40 @48357 has 16 MA's), (66, 48309), (67, 48306), (78, 48285), (111, 48060), (115, 48039), (123, 48003),

Gene: ProfessorX\_55 Start: 48328, Stop: 47960, Start Num: 57

Candidate Starts for ProfessorX\_55:

(14, 48532), (16, 48487), (18, 48457), (Start: 55 @48331 has 157 MA's), (Start: 57 @48328 has 105 MA's), (73, 48289), (88, 48208), (109, 48046), (110, 48043), (121, 47992),

Gene: Puhltonio\_56 Start: 48647, Stop: 48276, Start Num: 55

Candidate Starts for Puhltonio\_56:

(14, 48848), (16, 48803), (18, 48773), (Start: 55 @48647 has 157 MA's), (Start: 57 @48644 has 105 MA's), (73, 48605), (87, 48533), (109, 48362), (110, 48359), (121, 48308),

Gene: Puissant\_72 Start: 51841, Stop: 52215, Start Num: 58

Candidate Starts for Puissant\_72:

(Start: 58 @51841 has 177 MA's), (69, 51868), (85, 51928), (120, 52144),

Gene: PurduePete\_25 Start: 8416, Stop: 8772, Start Num: 58

Candidate Starts for PurduePete\_25:

(Start: 58 @8416 has 177 MA's), (89, 8530), (102, 8623), (121, 8719),

Gene: QBert\_24 Start: 8866, Stop: 9222, Start Num: 58

Candidate Starts for QBert\_24:

(Start: 58 @8866 has 177 MA's), (102, 9073), (121, 9169),

Gene: Quasimodo\_26 Start: 9114, Stop: 9470, Start Num: 58

Candidate Starts for Quasimodo\_26:

(Start: 58 @9114 has 177 MA's), (89, 9228), (102, 9321), (121, 9417),

Gene: QueenB2\_36 Start: 27362, Stop: 27739, Start Num: 46

Candidate Starts for QueenB2\_36:

(Start: 46 @27362 has 47 MA's), (106, 27602), (111, 27632), (112, 27638), (120, 27668),

Gene: QueenBeane\_56 Start: 48637, Stop: 48266, Start Num: 55

Candidate Starts for QueenBeane\_56:

(14, 48838), (16, 48793), (18, 48763), (Start: 55 @48637 has 157 MA's), (Start: 57 @48634 has 105 MA's), (73, 48595), (87, 48523), (109, 48352), (110, 48349), (121, 48298),

Gene: QueenBeesly\_36 Start: 27245, Stop: 27628, Start Num: 46

Candidate Starts for QueenBeesly\_36:

(Start: 46 @27245 has 47 MA's), (85, 27329), (100, 27437), (106, 27488), (111, 27518), (131, 27605),

Gene: Quisquilliae\_57 Start: 48637, Stop: 48269, Start Num: 57

Candidate Starts for Quisquilliae\_57:

(14, 48841), (16, 48796), (18, 48766), (Start: 55 @48640 has 157 MA's), (Start: 57 @48637 has 105 MA's), (73, 48598), (88, 48517), (109, 48355), (110, 48352), (121, 48301),

Gene: Rabinovish\_25 Start: 9154, Stop: 9510, Start Num: 58

Candidate Starts for Rabinovish\_25:

(Start: 58 @9154 has 177 MA's), (102, 9361), (121, 9457),

Gene: Rachaly\_39 Start: 28574, Stop: 28945, Start Num: 62

Candidate Starts for Rachaly\_39:

(Start: 62 @28574 has 4 MA's), (91, 28691), (102, 28766), (106, 28802), (111, 28832), (120, 28868), (128, 28907), (131, 28919), (135, 28925),

Gene: Rahel\_26 Start: 8150, Stop: 8506, Start Num: 58

Candidate Starts for Rahel\_26:

(Start: 58 @8150 has 177 MA's), (89, 8264), (102, 8357), (121, 8453),

Gene: RawrgerThat\_50 Start: 48212, Stop: 47814, Start Num: 40

Candidate Starts for RawrgerThat\_50:

(Start: 40 @48212 has 16 MA's), (66, 48164), (67, 48161), (78, 48140), (115, 47894), (123, 47858),

Gene: RedMaple\_57 Start: 48873, Stop: 48502, Start Num: 55

Candidate Starts for RedMaple\_57:

(14, 49074), (16, 49029), (18, 48999), (34, 48912), (Start: 55 @48873 has 157 MA's), (Start: 57 @48870 has 105 MA's), (73, 48831), (87, 48759), (109, 48588), (110, 48585), (121, 48534),

Gene: Reprobate\_53 Start: 48651, Stop: 48235, Start Num: 39

Candidate Starts for Reprobate\_53:

(4, 49029), (6, 48984), (7, 48981), (Start: 39 @48651 has 7 MA's), (66, 48597), (111, 48336),

Gene: Retro23\_37 Start: 27627, Stop: 28010, Start Num: 46

Candidate Starts for Retro23\_37:

(Start: 46 @27627 has 47 MA's), (85, 27711), (100, 27819), (106, 27870), (111, 27900), (120, 27936), (131, 27987),

Gene: Rich\_54 Start: 50085, Stop: 49669, Start Num: 39

Candidate Starts for Rich\_54:

(4, 50463), (6, 50418), (7, 50415), (11, 50364), (Start: 39 @50085 has 7 MA's), (Start: 49 @50067 has 2 MA's), (73, 50013), (123, 49713), (136, 49680),

Gene: Ricotta\_55 Start: 48327, Stop: 47959, Start Num: 57

Candidate Starts for Ricotta\_55:

(14, 48531), (16, 48486), (18, 48456), (Start: 55 @48330 has 157 MA's), (Start: 57 @48327 has 105 MA's), (73, 48288), (88, 48207), (109, 48045), (110, 48042), (121, 47991),

Gene: Riggan\_57 Start: 48630, Stop: 48259, Start Num: 55

Candidate Starts for Riggan\_57:

(14, 48831), (16, 48786), (18, 48756), (Start: 55 @48630 has 157 MA's), (Start: 57 @48627 has 105 MA's), (73, 48588), (87, 48516), (109, 48345), (110, 48342), (121, 48291),

Gene: Rita130\_53 Start: 48505, Stop: 48110, Start Num: 49

Candidate Starts for Rita130\_53:

(4, 48901), (6, 48856), (7, 48853), (Start: 39 @48523 has 7 MA's), (Start: 49 @48505 has 2 MA's), (73, 48451), (123, 48154),

Gene: Rizal\_24 Start: 7616, Stop: 7972, Start Num: 58

Candidate Starts for Rizal\_24:

(Start: 58 @7616 has 177 MA's), (102, 7823), (121, 7919),

Gene: RoMag\_21 Start: 7951, Stop: 8307, Start Num: 58

Candidate Starts for RoMag\_21:

(Start: 58 @7951 has 177 MA's), (102, 8158), (121, 8254),

Gene: Robyn\_55 Start: 48276, Stop: 47905, Start Num: 55

Candidate Starts for Robyn\_55:

(14, 48477), (16, 48432), (18, 48402), (34, 48315), (Start: 55 @48276 has 157 MA's), (Start: 57 @48273 has 105 MA's), (73, 48234), (87, 48162), (88, 48153), (109, 47991), (110, 47988), (121, 47937),

Gene: Roliet\_54 Start: 47673, Stop: 47302, Start Num: 55

Candidate Starts for Roliet\_54:

(14, 47874), (16, 47829), (18, 47799), (34, 47712), (Start: 55 @47673 has 157 MA's), (Start: 57 @47670 has 105 MA's), (73, 47631), (88, 47550), (109, 47388), (110, 47385), (121, 47334),

Gene: RonRayGun\_40 Start: 31491, Stop: 31892, Start Num: 35

Candidate Starts for RonRayGun\_40:

(12, 31248), (Start: 35 @31491 has 15 MA's), (Start: 46 @31509 has 47 MA's), (91, 31665), (98, 31716), (102, 31740), (121, 31860), (122, 31863),

Gene: Ronan\_21 Start: 6262, Stop: 6618, Start Num: 58

Candidate Starts for Ronan\_21:

(Start: 58 @6262 has 177 MA's), (102, 6469), (121, 6565),

Gene: Roots515\_26 Start: 8698, Stop: 9054, Start Num: 58

Candidate Starts for Roots515\_26:

(Start: 58 @8698 has 177 MA's), (102, 8905), (121, 9001),

Gene: Roscoe\_56 Start: 48576, Stop: 48205, Start Num: 55

Candidate Starts for Roscoe\_56:

(14, 48777), (16, 48732), (18, 48702), (34, 48615), (Start: 55 @48576 has 157 MA's), (Start: 57 @48573 has 105 MA's), (73, 48534), (87, 48462), (88, 48453), (109, 48291), (110, 48288), (121, 48237),

Gene: Roy17\_55 Start: 48030, Stop: 47659, Start Num: 55

Candidate Starts for Roy17\_55:

(14, 48231), (16, 48186), (18, 48156), (34, 48069), (Start: 55 @48030 has 157 MA's), (Start: 57 @48027 has 105 MA's), (88, 47907), (109, 47745), (110, 47742), (121, 47691),

Gene: Ryadel\_79 Start: 48372, Stop: 47995, Start Num: 48

Candidate Starts for Ryadel\_79:

(Start: 48 @48372 has 24 MA's), (74, 48312), (79, 48300), (89, 48237), (102, 48144), (104, 48138), (107, 48093), (118, 48048), (125, 48009), (127, 48006),

Gene: SDcharge11\_55 Start: 47644, Stop: 47273, Start Num: 55

Candidate Starts for SDcharge11\_55:

(14, 47845), (16, 47800), (18, 47770), (34, 47683), (Start: 55 @47644 has 157 MA's), (Start: 57 @47641 has 105 MA's), (73, 47602), (88, 47521), (109, 47359), (110, 47356), (121, 47305),

Gene: SVoro\_25 Start: 8693, Stop: 9049, Start Num: 58

Candidate Starts for SVoro\_25:

(Start: 58 @8693 has 177 MA's), (102, 8900), (121, 8996),

Gene: Salacia\_28 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for Salacia\_28:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Samaymay\_56 Start: 48637, Stop: 48266, Start Num: 55

Candidate Starts for Samaymay\_56:

(14, 48838), (16, 48793), (18, 48763), (Start: 55 @48637 has 157 MA's), (Start: 57 @48634 has 105 MA's), (73, 48595), (87, 48523), (109, 48352), (110, 48349), (121, 48298),

Gene: SassyCat97\_55 Start: 48364, Stop: 47993, Start Num: 55

Candidate Starts for SassyCat97\_55:

(14, 48565), (16, 48520), (18, 48490), (34, 48403), (Start: 55 @48364 has 157 MA's), (Start: 57 @48361 has 105 MA's), (73, 48322), (87, 48250), (109, 48079), (110, 48076), (121, 48025),

Gene: Sauce\_27 Start: 8829, Stop: 9185, Start Num: 58

Candidate Starts for Sauce\_27:

(Start: 58 @8829 has 177 MA's), (102, 9036), (121, 9132),

Gene: Schadenfreude\_55 Start: 48120, Stop: 47752, Start Num: 57

Candidate Starts for Schadenfreude\_55:

(14, 48324), (16, 48279), (18, 48249), (34, 48162), (Start: 55 @48123 has 157 MA's), (Start: 57 @48120 has 105 MA's), (73, 48081), (87, 48009), (88, 48000), (109, 47838), (110, 47835), (121, 47784),

Gene: Schnauzer\_43 Start: 30670, Stop: 31068, Start Num: 30

Candidate Starts for Schnauzer\_43:

(Start: 30 @30670 has 39 MA's), (60, 30721), (66, 30736), (102, 30919), (104, 30925), (112, 30976), (119, 30997), (120, 31000), (121, 31015), (128, 31039), (133, 31054), (135, 31057),

Gene: SchoolBus\_75 Start: 47520, Stop: 47143, Start Num: 48

Candidate Starts for SchoolBus\_75:

(Start: 48 @47520 has 24 MA's), (74, 47460), (79, 47448), (89, 47385), (102, 47292), (104, 47286), (107, 47241), (118, 47196), (125, 47157), (127, 47154),

Gene: Schueller\_57 Start: 48353, Stop: 47982, Start Num: 55

Candidate Starts for Schueller\_57:

(8, 48713), (14, 48554), (16, 48509), (18, 48479), (Start: 55 @48353 has 157 MA's), (Start: 57 @48350 has 105 MA's), (73, 48311), (80, 48293), (87, 48239), (109, 48068), (110, 48065), (121, 48014),

Gene: Schuy\_77 Start: 47372, Stop: 46995, Start Num: 48

Candidate Starts for Schuy\_77:

(Start: 48 @47372 has 24 MA's), (74, 47312), (79, 47300), (89, 47237), (102, 47144), (104, 47138), (107, 47093), (118, 47048), (125, 47009), (127, 47006),

Gene: Scitech\_39 Start: 28686, Stop: 29084, Start Num: 30

Candidate Starts for Scitech\_39:

(Start: 30 @28686 has 39 MA's), (60, 28737), (66, 28752), (102, 28935), (104, 28941), (112, 28992), (119, 29013), (120, 29016), (121, 29031), (128, 29055), (133, 29070), (135, 29073),

Gene: Scoot17C\_57 Start: 48303, Stop: 47935, Start Num: 57

Candidate Starts for Scoot17C\_57:

(14, 48507), (16, 48462), (18, 48432), (Start: 55 @48306 has 157 MA's), (Start: 57 @48303 has 105 MA's), (73, 48264), (88, 48183), (109, 48021), (110, 48018), (121, 47967),

Gene: ScottMcG\_26 Start: 9009, Stop: 9365, Start Num: 58

Candidate Starts for ScottMcG\_26:

(Start: 58 @9009 has 177 MA's), (102, 9216), (121, 9312),

Gene: Scrick\_57 Start: 48378, Stop: 48007, Start Num: 55

Candidate Starts for Scrick\_57:

(14, 48579), (16, 48534), (18, 48504), (Start: 55 @48378 has 157 MA's), (Start: 57 @48375 has 105 MA's), (73, 48336), (88, 48255), (109, 48093), (110, 48090), (121, 48039),

Gene: Sebata\_26 Start: 9052, Stop: 9408, Start Num: 58

Candidate Starts for Sebata\_26:

(Start: 58 @9052 has 177 MA's), (102, 9259), (121, 9355),

Gene: Selr12\_56 Start: 48343, Stop: 47975, Start Num: 57

Candidate Starts for Selr12\_56:

(14, 48547), (16, 48502), (18, 48472), (Start: 55 @48346 has 157 MA's), (Start: 57 @48343 has 105 MA's), (73, 48304), (88, 48223), (109, 48061), (110, 48058), (121, 48007),

Gene: SemperFi\_37 Start: 27513, Stop: 27896, Start Num: 46

Candidate Starts for SemperFi\_37:

(Start: 46 @27513 has 47 MA's), (85, 27597), (100, 27705), (106, 27756), (111, 27786), (131, 27873),

Gene: Serendipitous\_53 Start: 48341, Stop: 47952, Start Num: 49

Candidate Starts for Serendipitous\_53:

(Start: 49 @48341 has 2 MA's), (102, 48122), (111, 48053), (123, 47996), (126, 47984),

Gene: Serendipity\_56 Start: 48658, Stop: 48290, Start Num: 57  
Candidate Starts for Serendipity\_56:  
(14, 48862), (16, 48817), (18, 48787), (Start: 55 @48661 has 157 MA's), (Start: 57 @48658 has 105 MA's), (73, 48619), (87, 48547), (109, 48376), (110, 48373), (121, 48322),

Gene: Serpentine\_0056 Start: 48744, Stop: 48373, Start Num: 55  
Candidate Starts for Serpentine\_0056:  
(14, 48945), (16, 48900), (18, 48870), (Start: 55 @48744 has 157 MA's), (Start: 57 @48741 has 105 MA's), (73, 48702), (88, 48621), (109, 48459), (110, 48456), (121, 48405),

Gene: Settecandela\_28 Start: 15030, Stop: 15431, Start Num: 41  
Candidate Starts for Settecandela\_28:  
(Start: 41 @15030 has 2 MA's), (66, 15078), (79, 15108), (97, 15240), (112, 15339), (120, 15363), (121, 15378), (133, 15417),

Gene: Shadow1\_78 Start: 49985, Stop: 50368, Start Num: 38  
Candidate Starts for Shadow1\_78:  
(Start: 38 @49985 has 15 MA's), (51, 50006), (75, 50060), (91, 50132), (96, 50171), (102, 50207), (106, 50243), (120, 50309),

Gene: Shaqnato\_22 Start: 7276, Stop: 7632, Start Num: 58  
Candidate Starts for Shaqnato\_22:  
(Start: 58 @7276 has 177 MA's), (102, 7483), (121, 7579),

Gene: ShedlockHolmes\_77 Start: 50038, Stop: 50421, Start Num: 32  
Candidate Starts for ShedlockHolmes\_77:  
(Start: 32 @50038 has 5 MA's), (51, 50074), (69, 50110), (86, 50164), (94, 50215), (99, 50251), (100, 50257), (102, 50272), (120, 50374), (121, 50389),

Gene: Sheila\_54 Start: 47702, Stop: 47334, Start Num: 57  
Candidate Starts for Sheila\_54:  
(14, 47906), (16, 47861), (18, 47831), (34, 47744), (Start: 55 @47705 has 157 MA's), (Start: 57 @47702 has 105 MA's), (73, 47663), (88, 47582), (109, 47420), (110, 47417), (121, 47366),

Gene: Shelob\_28 Start: 9584, Stop: 9940, Start Num: 58  
Candidate Starts for Shelob\_28:  
(Start: 58 @9584 has 177 MA's), (102, 9791), (121, 9887),

Gene: Shenyu\_54 Start: 48876, Stop: 48463, Start Num: 39  
Candidate Starts for Shenyu\_54:  
(Start: 39 @48876 has 7 MA's), (73, 48804), (112, 48558), (113, 48555), (120, 48528),

Gene: ShiaLabeouf\_26 Start: 8150, Stop: 8506, Start Num: 58  
Candidate Starts for ShiaLabeouf\_26:  
(Start: 58 @8150 has 177 MA's), (89, 8264), (102, 8357), (121, 8453),

Gene: Shida\_75 Start: 47211, Stop: 46834, Start Num: 48  
Candidate Starts for Shida\_75:  
(Start: 48 @47211 has 24 MA's), (74, 47151), (79, 47139), (89, 47076), (102, 46983), (104, 46977), (107, 46932), (118, 46887), (125, 46848), (127, 46845),

Gene: Shifa\_23 Start: 8335, Stop: 8691, Start Num: 58

Candidate Starts for Shifa\_23:

(Start: 58 @8335 has 177 MA's), (102, 8542), (121, 8638),

Gene: Shnickers\_26 Start: 8150, Stop: 8506, Start Num: 58

Candidate Starts for Shnickers\_26:

(Start: 58 @8150 has 177 MA's), (89, 8264), (102, 8357), (121, 8453),

Gene: Shrimp\_26 Start: 8703, Stop: 9059, Start Num: 58

Candidate Starts for Shrimp\_26:

(Start: 58 @8703 has 177 MA's), (102, 8910), (121, 9006),

Gene: Shweta\_40 Start: 29977, Stop: 30375, Start Num: 30

Candidate Starts for Shweta\_40:

(Start: 30 @29977 has 39 MA's), (60, 30028), (66, 30043), (102, 30226), (104, 30232), (108, 30271), (112, 30283), (119, 30304), (120, 30307), (121, 30322), (133, 30361), (135, 30364),

Gene: Sigman\_57 Start: 48294, Stop: 47926, Start Num: 57

Candidate Starts for Sigman\_57:

(14, 48498), (16, 48453), (18, 48423), (Start: 55 @48297 has 157 MA's), (Start: 57 @48294 has 105 MA's), (73, 48255), (88, 48174), (109, 48012), (110, 48009), (121, 47958),

Gene: Silvafighter\_43 Start: 30643, Stop: 31041, Start Num: 30

Candidate Starts for Silvafighter\_43:

(Start: 30 @30643 has 39 MA's), (31, 30646), (60, 30694), (66, 30709), (102, 30892), (104, 30898), (112, 30949), (119, 30970), (120, 30973), (121, 30988), (128, 31012), (133, 31027), (135, 31030),

Gene: SilverBell\_55 Start: 48382, Stop: 48011, Start Num: 55

Candidate Starts for SilverBell\_55:

(14, 48583), (16, 48538), (18, 48508), (Start: 55 @48382 has 157 MA's), (Start: 57 @48379 has 105 MA's), (73, 48340), (88, 48259), (109, 48097), (110, 48094), (121, 48043),

Gene: SilverDipper\_27 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for SilverDipper\_27:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Simielle\_55 Start: 48297, Stop: 47929, Start Num: 57

Candidate Starts for Simielle\_55:

(8, 48660), (14, 48501), (16, 48456), (18, 48426), (Start: 55 @48300 has 157 MA's), (Start: 57 @48297 has 105 MA's), (73, 48258), (88, 48177), (109, 48015), (110, 48012), (121, 47961),

Gene: SirHarley\_57 Start: 42899, Stop: 43279, Start Num: 52

Candidate Starts for SirHarley\_57:

(Start: 52 @42899 has 21 MA's), (68, 42932), (69, 42935), (70, 42938), (84, 42992), (85, 42995), (101, 43115), (121, 43226), (122, 43229),

Gene: SirJeffery\_53 Start: 48507, Stop: 48112, Start Num: 49

Candidate Starts for SirJeffery\_53:

(4, 48903), (6, 48858), (7, 48855), (Start: 39 @48525 has 7 MA's), (Start: 49 @48507 has 2 MA's), (73, 48453), (123, 48156), (136, 48123),

Gene: SirPhilip\_73 Start: 50211, Stop: 50594, Start Num: 38

Candidate Starts for SirPhilip\_73:



(Start: 38 @50211 has 15 MA's), (Start: 42 @50217 has 1 MA's), (69, 50271), (75, 50286), (87, 50328), (91, 50358), (96, 50397), (102, 50433), (113, 50508), (120, 50535),

Gene: Skippy\_57 Start: 48594, Stop: 48226, Start Num: 57

Candidate Starts for Skippy\_57:

(14, 48798), (16, 48753), (18, 48723), (Start: 55 @48597 has 157 MA's), (Start: 57 @48594 has 105 MA's), (73, 48555), (88, 48474), (109, 48312), (110, 48309), (121, 48258),

Gene: Sknot\_38 Start: 27377, Stop: 27772, Start Num: 46

Candidate Starts for Sknot\_38:

(Start: 46 @27377 has 47 MA's), (106, 27635), (111, 27665), (120, 27701),

Gene: Slatt\_57 Start: 48659, Stop: 48291, Start Num: 57

Candidate Starts for Slatt\_57:

(14, 48863), (16, 48818), (18, 48788), (Start: 55 @48662 has 157 MA's), (Start: 57 @48659 has 105 MA's), (73, 48620), (88, 48539), (109, 48377), (110, 48374), (121, 48323),

Gene: SmallFry\_26 Start: 8150, Stop: 8506, Start Num: 58

Candidate Starts for SmallFry\_26:

(Start: 58 @8150 has 177 MA's), (89, 8264), (102, 8357), (121, 8453),

Gene: Smeagan\_38 Start: 27763, Stop: 28161, Start Num: 46

Candidate Starts for Smeagan\_38:

(Start: 46 @27763 has 47 MA's), (70, 27811), (111, 28054), (112, 28060), (120, 28090),

Gene: Smooch\_78 Start: 49262, Stop: 48885, Start Num: 48

Candidate Starts for Smooch\_78:

(Start: 26 @49310 has 4 MA's), (Start: 48 @49262 has 24 MA's), (74, 49202), (79, 49190), (89, 49127), (102, 49034), (104, 49028), (107, 48983), (118, 48938), (125, 48899), (127, 48896),

Gene: Smurph\_42 Start: 30670, Stop: 31068, Start Num: 30

Candidate Starts for Smurph\_42:

(Start: 30 @30670 has 39 MA's), (60, 30721), (66, 30736), (102, 30919), (104, 30925), (112, 30976), (119, 30997), (120, 31000), (121, 31015), (128, 31039), (133, 31054), (135, 31057),

Gene: SnapTap\_36 Start: 27324, Stop: 27707, Start Num: 46

Candidate Starts for SnapTap\_36:

(Start: 46 @27324 has 47 MA's), (85, 27408), (100, 27516), (106, 27567), (111, 27597), (131, 27684),

Gene: Snekmaggedon\_40 Start: 29847, Stop: 30245, Start Num: 30

Candidate Starts for Snekmaggedon\_40:

(Start: 30 @29847 has 39 MA's), (60, 29898), (66, 29913), (102, 30096), (104, 30102), (112, 30153), (119, 30174), (120, 30177), (121, 30192), (128, 30216), (133, 30231), (135, 30234),

Gene: Soile\_57 Start: 48882, Stop: 48514, Start Num: 57

Candidate Starts for Soile\_57:

(8, 49245), (14, 49086), (16, 49041), (18, 49011), (Start: 55 @48885 has 157 MA's), (Start: 57 @48882 has 105 MA's), (73, 48843), (88, 48762), (109, 48600), (110, 48597), (121, 48546),

Gene: Solosis\_55 Start: 48358, Stop: 47987, Start Num: 55

Candidate Starts for Solosis\_55:

(14, 48559), (16, 48514), (18, 48484), (34, 48397), (Start: 55 @48358 has 157 MA's), (Start: 57 @48355 has 105 MA's), (73, 48316), (87, 48244), (109, 48073), (110, 48070), (121, 48019),

Gene: Sophia\_55 Start: 48352, Stop: 47981, Start Num: 55

Candidate Starts for Sophia\_55:

(14, 48553), (16, 48508), (18, 48478), (Start: 55 @48352 has 157 MA's), (Start: 57 @48349 has 105 MA's), (73, 48310), (87, 48238), (109, 48067), (110, 48064), (121, 48013),

Gene: Soto\_54 Start: 47677, Stop: 47306, Start Num: 55

Candidate Starts for Soto\_54:

(14, 47878), (16, 47833), (18, 47803), (34, 47716), (Start: 55 @47677 has 157 MA's), (Start: 57 @47674 has 105 MA's), (73, 47635), (88, 47554), (109, 47392), (110, 47389), (121, 47338),

Gene: Spartan300\_55 Start: 48336, Stop: 47965, Start Num: 55

Candidate Starts for Spartan300\_55:

(9, 48681), (14, 48537), (16, 48492), (18, 48462), (34, 48375), (Start: 55 @48336 has 157 MA's), (Start: 57 @48333 has 105 MA's), (88, 48213), (109, 48051), (110, 48048), (121, 47997),

Gene: Spec\_24 Start: 8156, Stop: 8512, Start Num: 58

Candidate Starts for Spec\_24:

(Start: 58 @8156 has 177 MA's), (89, 8270), (102, 8363), (121, 8459),

Gene: Specks\_31 Start: 9988, Stop: 10344, Start Num: 58

Candidate Starts for Specks\_31:

(Start: 58 @9988 has 177 MA's), (89, 10102), (102, 10195), (121, 10291),

Gene: SpongeBob\_40 Start: 29847, Stop: 30245, Start Num: 30

Candidate Starts for SpongeBob\_40:

(Start: 30 @29847 has 39 MA's), (60, 29898), (66, 29913), (102, 30096), (104, 30102), (112, 30153), (119, 30174), (120, 30177), (121, 30192), (128, 30216), (133, 30231), (135, 30234),

Gene: Sprinklers\_26 Start: 8191, Stop: 8547, Start Num: 58

Candidate Starts for Sprinklers\_26:

(Start: 58 @8191 has 177 MA's), (102, 8398), (121, 8494),

Gene: Spud\_28 Start: 9548, Stop: 9904, Start Num: 58

Candidate Starts for Spud\_28:

(Start: 58 @9548 has 177 MA's), (89, 9662), (102, 9755), (121, 9851),

Gene: Squid\_56 Start: 48364, Stop: 47993, Start Num: 55

Candidate Starts for Squid\_56:

(14, 48565), (16, 48520), (18, 48490), (34, 48403), (Start: 55 @48364 has 157 MA's), (Start: 57 @48361 has 105 MA's), (73, 48322), (87, 48250), (109, 48079), (110, 48076), (121, 48025),

Gene: Squiggle\_57 Start: 48369, Stop: 48001, Start Num: 57

Candidate Starts for Squiggle\_57:

(14, 48573), (16, 48528), (18, 48498), (Start: 55 @48372 has 157 MA's), (Start: 57 @48369 has 105 MA's), (73, 48330), (88, 48249), (109, 48087), (110, 48084), (121, 48033),

Gene: SrishMeg2525\_25 Start: 8416, Stop: 8772, Start Num: 58

Candidate Starts for SrishMeg2525\_25:

(Start: 58 @8416 has 177 MA's), (89, 8530), (102, 8623), (121, 8719),

Gene: StephanieG\_26 Start: 8882, Stop: 9238, Start Num: 58

Candidate Starts for StephanieG\_26:

(Start: 58 @8882 has 177 MA's), (89, 8996), (102, 9089), (121, 9185),

Gene: Stinger\_49 Start: 46888, Stop: 46490, Start Num: 40

Candidate Starts for Stinger\_49:

(Start: 40 @46888 has 16 MA's), (66, 46840), (67, 46837), (78, 46816), (111, 46591), (115, 46570), (123, 46534),

Gene: StinkyVeggy\_54 Start: 48662, Stop: 48249, Start Num: 39

Candidate Starts for StinkyVeggy\_54:

(Start: 39 @48662 has 7 MA's), (105, 48389), (112, 48344), (113, 48341), (120, 48314),

Gene: Strobilo\_39 Start: 31471, Stop: 31088, Start Num: 35

Candidate Starts for Strobilo\_39:

(Start: 35 @31471 has 15 MA's), (86, 31348), (94, 31297), (102, 31240), (112, 31168), (121, 31123), (128, 31099),

Gene: Struggle\_56 Start: 48201, Stop: 47830, Start Num: 55

Candidate Starts for Struggle\_56:

(8, 48561), (14, 48402), (16, 48357), (18, 48327), (Start: 55 @48201 has 157 MA's), (Start: 57 @48198 has 105 MA's), (73, 48159), (80, 48141), (87, 48087), (109, 47916), (110, 47913), (121, 47862),

Gene: Stubby\_24 Start: 7962, Stop: 8318, Start Num: 58

Candidate Starts for Stubby\_24:

(Start: 58 @7962 has 177 MA's), (102, 8169), (121, 8265),

Gene: StubbySaigey\_25 Start: 7342, Stop: 7698, Start Num: 58

Candidate Starts for StubbySaigey\_25:

(Start: 58 @7342 has 177 MA's), (102, 7549), (121, 7645),

Gene: Suffolk\_54 Start: 47667, Stop: 47296, Start Num: 55

Candidate Starts for Suffolk\_54:

(14, 47868), (16, 47823), (18, 47793), (34, 47706), (Start: 55 @47667 has 157 MA's), (Start: 57 @47664 has 105 MA's), (73, 47625), (88, 47544), (109, 47382), (110, 47379), (121, 47328),

Gene: Suigeneris\_55 Start: 48805, Stop: 48392, Start Num: 39

Candidate Starts for Suigeneris\_55:

(4, 49183), (6, 49138), (7, 49135), (Start: 39 @48805 has 7 MA's), (Start: 49 @48787 has 2 MA's), (73, 48733), (123, 48436), (136, 48403),

Gene: Sunflower1121\_79 Start: 50131, Stop: 50514, Start Num: 38

Candidate Starts for Sunflower1121\_79:

(Start: 38 @50131 has 15 MA's), (51, 50152), (75, 50206), (91, 50278), (96, 50317), (102, 50353), (106, 50389), (117, 50446), (120, 50455),

Gene: Surely\_56 Start: 48654, Stop: 48283, Start Num: 55

Candidate Starts for Surely\_56:

(14, 48855), (16, 48810), (18, 48780), (34, 48693), (Start: 55 @48654 has 157 MA's), (Start: 57 @48651 has 105 MA's), (73, 48612), (87, 48540), (109, 48369), (110, 48366), (121, 48315),

Gene: SweetiePie\_36 Start: 27324, Stop: 27707, Start Num: 46

Candidate Starts for SweetiePie\_36:

(Start: 46 @27324 has 47 MA's), (85, 27408), (100, 27516), (106, 27567), (111, 27597), (131, 27684),

Gene: Swiphy\_58 Start: 48655, Stop: 48284, Start Num: 55

Candidate Starts for Swiphy\_58:

(8, 49015), (14, 48856), (16, 48811), (18, 48781), (34, 48694), (Start: 55 @48655 has 157 MA's), (Start: 57 @48652 has 105 MA's), (88, 48532), (109, 48370), (110, 48367), (121, 48316),

Gene: Swish\_57 Start: 48316, Stop: 47948, Start Num: 57

Candidate Starts for Swish\_57:

(14, 48520), (16, 48475), (18, 48445), (Start: 55 @48319 has 157 MA's), (Start: 57 @48316 has 105 MA's), (73, 48277), (88, 48196), (109, 48034), (110, 48031), (121, 47980),

Gene: Syra333\_77 Start: 49859, Stop: 50242, Start Num: 38

Candidate Starts for Syra333\_77:

(Start: 38 @49859 has 15 MA's), (Start: 42 @49865 has 1 MA's), (51, 49880), (53, 49886), (69, 49919), (75, 49934), (91, 50006), (96, 50045), (102, 50081), (106, 50117), (117, 50174), (120, 50183), (134, 50237),

Gene: TBond007\_71 Start: 49524, Stop: 49919, Start Num: 32

Candidate Starts for TBond007\_71:

(Start: 32 @49524 has 5 MA's), (51, 49560), (69, 49596), (100, 49743), (102, 49758), (106, 49794), (132, 49911),

Gene: TClif\_75 Start: 49609, Stop: 49980, Start Num: 38

Candidate Starts for TClif\_75:

(Start: 38 @49609 has 15 MA's), (69, 49660), (91, 49744), (102, 49819), (117, 49912), (120, 49921),

Gene: TM4\_93 Start: 31140, Stop: 30757, Start Num: 35

Candidate Starts for TM4\_93:

(Start: 35 @31140 has 15 MA's), (69, 31080), (86, 31017), (94, 30966), (99, 30930), (102, 30909), (112, 30837), (121, 30792),

Gene: Tainan\_31 Start: 10269, Stop: 10625, Start Num: 58

Candidate Starts for Tainan\_31:

(Start: 58 @10269 has 177 MA's), (89, 10383), (102, 10476), (121, 10572),

Gene: TallGrassMM\_56 Start: 48268, Stop: 47897, Start Num: 55

Candidate Starts for TallGrassMM\_56:

(14, 48469), (16, 48424), (18, 48394), (34, 48307), (Start: 55 @48268 has 157 MA's), (Start: 57 @48265 has 105 MA's), (73, 48226), (87, 48154), (109, 47983), (110, 47980), (121, 47929),

Gene: Tapioca\_44 Start: 30636, Stop: 31034, Start Num: 30

Candidate Starts for Tapioca\_44:

(Start: 30 @30636 has 39 MA's), (60, 30687), (66, 30702), (102, 30885), (104, 30891), (112, 30942), (119, 30963), (120, 30966), (121, 30981), (128, 31005), (133, 31020), (135, 31023),

Gene: TarsusIV\_35 Start: 27299, Stop: 27697, Start Num: 46

Candidate Starts for TarsusIV\_35:

(Start: 46 @27299 has 47 MA's), (102, 27521), (106, 27557), (111, 27587), (115, 27611), (120, 27626), (135, 27683),

Gene: Teardrop\_25 Start: 7615, Stop: 7971, Start Num: 58

Candidate Starts for Teardrop\_25:

(Start: 58 @7615 has 177 MA's), (102, 7822), (121, 7918),

Gene: TelAviv\_72 Start: 47505, Stop: 47128, Start Num: 48

Candidate Starts for TelAviv\_72:

(Start: 48 @47505 has 24 MA's), (74, 47445), (79, 47433), (89, 47370), (102, 47277), (104, 47271), (107, 47226), (118, 47181), (125, 47142), (127, 47139),

Gene: Telesworld\_54 Start: 48431, Stop: 48060, Start Num: 55

Candidate Starts for Telesworld\_54:

(14, 48632), (16, 48587), (18, 48557), (34, 48470), (Start: 55 @48431 has 157 MA's), (Start: 57 @48428 has 105 MA's), (73, 48389), (87, 48317), (109, 48146), (110, 48143), (121, 48092),

Gene: Thora\_56 Start: 48650, Stop: 48279, Start Num: 55

Candidate Starts for Thora\_56:

(14, 48851), (16, 48806), (18, 48776), (Start: 55 @48650 has 157 MA's), (Start: 57 @48647 has 105 MA's), (73, 48608), (88, 48527), (109, 48365), (110, 48362), (121, 48311),

Gene: Thoth\_56 Start: 42721, Stop: 43101, Start Num: 52

Candidate Starts for Thoth\_56:

(Start: 52 @42721 has 21 MA's), (68, 42754), (69, 42757), (70, 42760), (84, 42814), (85, 42817), (101, 42937), (121, 43048), (122, 43051),

Gene: ThreeOh3D2\_57 Start: 48870, Stop: 48499, Start Num: 55

Candidate Starts for ThreeOh3D2\_57:

(14, 49071), (16, 49026), (18, 48996), (Start: 55 @48870 has 157 MA's), (Start: 57 @48867 has 105 MA's), (73, 48828), (88, 48747), (109, 48585), (110, 48582), (121, 48531),

Gene: Thumb\_72 Start: 52173, Stop: 52541, Start Num: 58

Candidate Starts for Thumb\_72:

(Start: 58 @52173 has 177 MA's), (69, 52200), (75, 52212), (85, 52260), (86, 52275), (108, 52437), (120, 52473), (122, 52491),

Gene: Thunderbird\_55 Start: 48353, Stop: 47985, Start Num: 57

Candidate Starts for Thunderbird\_55:

(8, 48716), (14, 48557), (16, 48512), (18, 48482), (Start: 55 @48356 has 157 MA's), (Start: 57 @48353 has 105 MA's), (73, 48314), (80, 48296), (87, 48242), (109, 48071), (110, 48068), (121, 48017),

Gene: Timmi\_55 Start: 48350, Stop: 47982, Start Num: 57

Candidate Starts for Timmi\_55:

(14, 48554), (16, 48509), (18, 48479), (Start: 55 @48353 has 157 MA's), (Start: 57 @48350 has 105 MA's), (73, 48311), (87, 48239), (109, 48068), (110, 48065), (121, 48014),

Gene: TinyTim\_26 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for TinyTim\_26:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: TomBombadil\_56 Start: 48638, Stop: 48267, Start Num: 55

Candidate Starts for TomBombadil\_56:

(14, 48839), (16, 48794), (18, 48764), (34, 48677), (Start: 55 @48638 has 157 MA's), (Start: 57 @48635 has 105 MA's), (73, 48596), (87, 48524), (109, 48353), (110, 48350), (121, 48299),

Gene: Tomlarah\_57 Start: 49162, Stop: 48794, Start Num: 57

Candidate Starts for Tomlarah\_57:

(14, 49366), (16, 49321), (18, 49291), (Start: 55 @49165 has 157 MA's), (Start: 57 @49162 has 105 MA's), (73, 49123), (88, 49042), (109, 48880), (110, 48877), (121, 48826),

Gene: Toni\_55 Start: 48315, Stop: 47944, Start Num: 55

Candidate Starts for Toni\_55:

(14, 48516), (16, 48471), (18, 48441), (Start: 55 @48315 has 157 MA's), (Start: 57 @48312 has 105 MA's), (73, 48273), (88, 48192), (109, 48030), (110, 48027), (121, 47976),

Gene: Tooj\_54 Start: 47781, Stop: 47410, Start Num: 55

Candidate Starts for Tooj\_54:

(14, 47982), (16, 47937), (18, 47907), (34, 47820), (Start: 55 @47781 has 157 MA's), (Start: 57 @47778 has 105 MA's), (73, 47739), (87, 47667), (88, 47658), (109, 47496), (110, 47493), (121, 47442),

Gene: Tortoise16\_25 Start: 8150, Stop: 8506, Start Num: 58

Candidate Starts for Tortoise16\_25:

(Start: 58 @8150 has 177 MA's), (89, 8264), (102, 8357), (121, 8453),

Gene: Trinitium\_25 Start: 7591, Stop: 7947, Start Num: 58

Candidate Starts for Trinitium\_25:

(Start: 58 @7591 has 177 MA's), (102, 7798), (121, 7894),

Gene: Troll4\_56 Start: 42852, Stop: 43232, Start Num: 52

Candidate Starts for Troll4\_56:

(Start: 52 @42852 has 21 MA's), (68, 42885), (69, 42888), (70, 42891), (84, 42945), (85, 42948), (101, 43068), (121, 43179), (122, 43182),

Gene: Trooper\_37 Start: 27533, Stop: 27931, Start Num: 46

Candidate Starts for Trooper\_37:

(Start: 46 @27533 has 47 MA's), (61, 27560), (70, 27581), (92, 27683), (102, 27755), (106, 27791), (111, 27821), (114, 27833), (115, 27845), (135, 27917),

Gene: True\_55 Start: 48318, Stop: 47950, Start Num: 57

Candidate Starts for True\_55:

(14, 48522), (16, 48477), (18, 48447), (Start: 55 @48321 has 157 MA's), (Start: 57 @48318 has 105 MA's), (73, 48279), (88, 48198), (109, 48036), (110, 48033), (121, 47982),

Gene: Trypo\_58 Start: 48787, Stop: 48416, Start Num: 55

Candidate Starts for Trypo\_58:

(8, 49147), (14, 48988), (16, 48943), (18, 48913), (Start: 55 @48787 has 157 MA's), (Start: 57 @48784 has 105 MA's), (73, 48745), (80, 48727), (87, 48673), (88, 48664), (109, 48502), (110, 48499), (121, 48448),

Gene: Turbido\_36 Start: 27512, Stop: 27892, Start Num: 46

Candidate Starts for Turbido\_36:

(Start: 46 @27512 has 47 MA's), (85, 27593), (100, 27701), (111, 27782), (131, 27869),

Gene: Turret\_24 Start: 7330, Stop: 7686, Start Num: 58

Candidate Starts for Turret\_24:

(Start: 58 @7330 has 177 MA's), (102, 7537), (121, 7633),

Gene: Tyke\_28 Start: 9562, Stop: 9918, Start Num: 58

Candidate Starts for Tyke\_28:

(Start: 58 @9562 has 177 MA's), (89, 9676), (102, 9769), (121, 9865),

Gene: Typha\_103 Start: 64758, Stop: 65096, Start Num: 50

Candidate Starts for Typha\_103:

(Start: 50 @64758 has 2 MA's), (56, 64770), (74, 64809), (75, 64812), (104, 64968),

Gene: TyrionL\_56 Start: 48209, Stop: 47841, Start Num: 57

Candidate Starts for TyrionL\_56:

(8, 48572), (14, 48413), (16, 48368), (18, 48338), (Start: 55 @48212 has 157 MA's), (Start: 57 @48209 has 105 MA's), (73, 48170), (80, 48152), (87, 48098), (88, 48089), (109, 47927), (110, 47924), (121, 47873),

Gene: UAch1\_55 Start: 48387, Stop: 48019, Start Num: 57

Candidate Starts for UAch1\_55:

(14, 48591), (16, 48546), (18, 48516), (34, 48429), (Start: 55 @48390 has 157 MA's), (Start: 57 @48387 has 105 MA's), (73, 48348), (87, 48276), (109, 48105), (110, 48102), (121, 48051),

Gene: Ubuntu\_43 Start: 33316, Stop: 32891, Start Num: 30

Candidate Starts for Ubuntu\_43:

(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: UncleHowie\_55 Start: 48065, Stop: 47694, Start Num: 55

Candidate Starts for UncleHowie\_55:

(14, 48266), (16, 48221), (18, 48191), (Start: 55 @48065 has 157 MA's), (Start: 57 @48062 has 105 MA's), (73, 48023), (88, 47942), (109, 47780), (110, 47777), (121, 47726),

Gene: Updawg\_37 Start: 27705, Stop: 28100, Start Num: 46

Candidate Starts for Updawg\_37:

(Start: 46 @27705 has 47 MA's), (106, 27963), (111, 27993), (120, 28029),

Gene: Usavi\_56 Start: 48730, Stop: 48362, Start Num: 57

Candidate Starts for Usavi\_56:

(14, 48934), (16, 48889), (18, 48859), (Start: 55 @48733 has 157 MA's), (Start: 57 @48730 has 105 MA's), (73, 48691), (88, 48610), (109, 48448), (110, 48445), (121, 48394),

Gene: Vagabond\_76 Start: 47417, Stop: 47040, Start Num: 48

Candidate Starts for Vagabond\_76:

(Start: 48 @47417 has 24 MA's), (74, 47357), (79, 47345), (89, 47282), (102, 47189), (104, 47183), (107, 47138), (118, 47093), (125, 47054), (127, 47051),

Gene: Vaishali24\_54 Start: 48025, Stop: 47654, Start Num: 55

Candidate Starts for Vaishali24\_54:

(14, 48226), (16, 48181), (18, 48151), (34, 48064), (Start: 55 @48025 has 157 MA's), (Start: 57 @48022 has 105 MA's), (73, 47983), (87, 47911), (88, 47902), (109, 47740), (110, 47737), (121, 47686),

Gene: Valjean\_55 Start: 48346, Stop: 47975, Start Num: 55

Candidate Starts for Valjean\_55:

(9, 48691), (14, 48547), (16, 48502), (18, 48472), (34, 48385), (Start: 55 @48346 has 157 MA's), (Start: 57 @48343 has 105 MA's), (88, 48223), (109, 48061), (110, 48058), (121, 48007),

Gene: ValleyTerrace\_26 Start: 8154, Stop: 8510, Start Num: 58

Candidate Starts for ValleyTerrace\_26:

(Start: 58 @8154 has 177 MA's), (89, 8268), (102, 8361), (121, 8457),

Gene: Vaticameos\_53 Start: 46856, Stop: 46485, Start Num: 55

Candidate Starts for Vaticameos\_53:

(14, 47057), (16, 47012), (18, 46982), (Start: 55 @46856 has 157 MA's), (Start: 57 @46853 has 105 MA's), (73, 46814), (88, 46733), (109, 46571), (110, 46568), (121, 46517),

Gene: Veritas\_57 Start: 48481, Stop: 48110, Start Num: 55

Candidate Starts for Veritas\_57:

(14, 48682), (16, 48637), (18, 48607), (34, 48520), (Start: 55 @48481 has 157 MA's), (Start: 57 @48478 has 105 MA's), (73, 48439), (87, 48367), (109, 48196), (110, 48193), (121, 48142),

Gene: Vincenzo\_51 Start: 48916, Stop: 48518, Start Num: 40

Candidate Starts for Vincenzo\_51:

(Start: 40 @48916 has 16 MA's), (65, 48871), (66, 48868), (82, 48826), (111, 48619),

Gene: VioletZ\_51 Start: 48276, Stop: 47878, Start Num: 40

Candidate Starts for VioletZ\_51:

(Start: 40 @48276 has 16 MA's), (66, 48228), (67, 48225), (78, 48204), (111, 47979), (115, 47958), (123, 47922),

Gene: Virapocalypse\_57 Start: 48643, Stop: 48275, Start Num: 57

Candidate Starts for Virapocalypse\_57:

(8, 49006), (14, 48847), (16, 48802), (18, 48772), (Start: 55 @48646 has 157 MA's), (Start: 57 @48643 has 105 MA's), (73, 48604), (80, 48586), (87, 48532), (88, 48523), (109, 48361), (110, 48358), (121, 48307),

Gene: Virgeve\_55 Start: 48083, Stop: 47712, Start Num: 55

Candidate Starts for Virgeve\_55:

(8, 48443), (14, 48284), (16, 48239), (18, 48209), (34, 48122), (Start: 55 @48083 has 157 MA's), (Start: 57 @48080 has 105 MA's), (88, 47960), (109, 47798), (110, 47795), (121, 47744),

Gene: Visconti\_57 Start: 42732, Stop: 43112, Start Num: 52

Candidate Starts for Visconti\_57:

(Start: 52 @42732 has 21 MA's), (68, 42765), (69, 42768), (70, 42771), (84, 42825), (85, 42828), (101, 42948), (121, 43059), (122, 43062),

Gene: Vista\_55 Start: 48366, Stop: 47995, Start Num: 55

Candidate Starts for Vista\_55:

(14, 48567), (16, 48522), (18, 48492), (Start: 55 @48366 has 157 MA's), (Start: 57 @48363 has 105 MA's), (73, 48324), (88, 48243), (109, 48081), (110, 48078), (121, 48027),

Gene: Vivaldi\_57 Start: 48512, Stop: 48144, Start Num: 57

Candidate Starts for Vivaldi\_57:

(14, 48716), (16, 48671), (18, 48641), (34, 48554), (Start: 55 @48515 has 157 MA's), (Start: 57 @48512 has 105 MA's), (73, 48473), (87, 48401), (88, 48392), (109, 48230), (110, 48227), (121, 48176),

Gene: Vorrrps\_76 Start: 47629, Stop: 47252, Start Num: 48

Candidate Starts for Vorrrps\_76:

(Start: 48 @47629 has 24 MA's), (74, 47569), (79, 47557), (89, 47494), (102, 47401), (104, 47395), (107, 47350), (118, 47305), (125, 47266), (127, 47263),



Gene: Vortex\_56 Start: 48348, Stop: 47977, Start Num: 55

Candidate Starts for Vortex\_56:

(14, 48549), (16, 48504), (18, 48474), (Start: 55 @48348 has 157 MA's), (Start: 57 @48345 has 105 MA's), (73, 48306), (87, 48234), (109, 48063), (110, 48060), (121, 48009),

Gene: WaldoWhy\_58 Start: 42785, Stop: 43165, Start Num: 52

Candidate Starts for WaldoWhy\_58:

(Start: 52 @42785 has 21 MA's), (68, 42818), (69, 42821), (70, 42824), (84, 42878), (85, 42881), (101, 43001), (121, 43112), (122, 43115),

Gene: Wallhey\_56 Start: 48216, Stop: 47845, Start Num: 55

Candidate Starts for Wallhey\_56:

(8, 48576), (14, 48417), (16, 48372), (18, 48342), (Start: 55 @48216 has 157 MA's), (Start: 57 @48213 has 105 MA's), (73, 48174), (80, 48156), (87, 48102), (88, 48093), (109, 47931), (110, 47928), (121, 47877),

Gene: Wally\_25 Start: 7577, Stop: 7933, Start Num: 58

Candidate Starts for Wally\_25:

(Start: 58 @7577 has 177 MA's), (89, 7691), (102, 7784), (121, 7880),

Gene: Waterdiva\_56 Start: 48724, Stop: 48356, Start Num: 57

Candidate Starts for Waterdiva\_56:

(14, 48928), (16, 48883), (18, 48853), (Start: 55 @48727 has 157 MA's), (Start: 57 @48724 has 105 MA's), (73, 48685), (88, 48604), (109, 48442), (110, 48439), (121, 48388),

Gene: Webster2\_43 Start: 33292, Stop: 32891, Start Num: 43

Candidate Starts for Webster2\_43:

(17, 33409), (Start: 30 @33316 has 39 MA's), (Start: 43 @33292 has 2 MA's), (65, 33250), (66, 33247), (74, 33226), (81, 33205), (85, 33175), (99, 33073), (120, 32959), (121, 32944), (122, 32941), (128, 32920), (136, 32899),

Gene: Weher20\_56 Start: 49168, Stop: 48800, Start Num: 57

Candidate Starts for Weher20\_56:

(14, 49372), (16, 49327), (18, 49297), (Start: 55 @49171 has 157 MA's), (Start: 57 @49168 has 105 MA's), (73, 49129), (88, 49048), (109, 48886), (110, 48883), (121, 48832),

Gene: WeiHuaDA\_41 Start: 28941, Stop: 29318, Start Num: 46

Candidate Starts for WeiHuaDA\_41:

(Start: 46 @28941 has 47 MA's), (64, 28974), (106, 29181), (111, 29211), (112, 29217), (120, 29247),

Gene: Weirido19\_40 Start: 31397, Stop: 31011, Start Num: 28

Candidate Starts for Weirido19\_40:

(28, 31397), (54, 31340), (68, 31313), (69, 31310), (86, 31256), (87, 31253), (95, 31202), (96, 31184), (102, 31148), (104, 31142), (120, 31064), (122, 31046), (129, 31022), (130, 31016),

Gene: Whabigail7\_36 Start: 27500, Stop: 27880, Start Num: 46

Candidate Starts for Whabigail7\_36:

(Start: 46 @27500 has 47 MA's), (85, 27581), (100, 27689), (106, 27740), (111, 27770), (131, 27857),

Gene: WideWale\_37 Start: 27705, Stop: 28100, Start Num: 46

Candidate Starts for WideWale\_37:

(Start: 46 @27705 has 47 MA's), (106, 27963), (111, 27993), (120, 28029),

Gene: Wildflower\_76 Start: 47353, Stop: 46976, Start Num: 48

Candidate Starts for Wildflower\_76:

(Start: 26 @47401 has 4 MA's), (Start: 48 @47353 has 24 MA's), (74, 47293), (79, 47281), (89, 47218), (102, 47125), (104, 47119), (107, 47074), (118, 47029), (125, 46990), (127, 46987),

Gene: Willis\_26 Start: 8594, Stop: 8950, Start Num: 58

Candidate Starts for Willis\_26:

(Start: 58 @8594 has 177 MA's), (102, 8801), (121, 8897),

Gene: Windsor\_56 Start: 48871, Stop: 48500, Start Num: 55

Candidate Starts for Windsor\_56:

(14, 49072), (16, 49027), (18, 48997), (Start: 55 @48871 has 157 MA's), (Start: 57 @48868 has 105 MA's), (73, 48829), (88, 48748), (109, 48586), (110, 48583), (121, 48532),

Gene: Winget\_76 Start: 47798, Stop: 47421, Start Num: 48

Candidate Starts for Winget\_76:

(Start: 48 @47798 has 24 MA's), (74, 47738), (79, 47726), (89, 47663), (102, 47570), (104, 47564), (107, 47519), (118, 47474), (125, 47435), (127, 47432),

Gene: Xavier\_55 Start: 48355, Stop: 47984, Start Num: 55

Candidate Starts for Xavier\_55:

(14, 48556), (16, 48511), (18, 48481), (Start: 55 @48355 has 157 MA's), (Start: 57 @48352 has 105 MA's), (73, 48313), (87, 48241), (109, 48070), (110, 48067), (121, 48016),

Gene: Xerxes\_42 Start: 30667, Stop: 31065, Start Num: 30

Candidate Starts for Xerxes\_42:

(Start: 30 @30667 has 39 MA's), (60, 30718), (66, 30733), (102, 30916), (104, 30922), (112, 30973), (119, 30994), (120, 30997), (121, 31012), (128, 31036), (133, 31051), (135, 31054),

Gene: Ximenita\_79 Start: 50183, Stop: 50566, Start Num: 38

Candidate Starts for Ximenita\_79:

(Start: 38 @50183 has 15 MA's), (Start: 42 @50189 has 1 MA's), (51, 50204), (53, 50210), (69, 50243), (75, 50258), (91, 50330), (96, 50369), (102, 50405), (106, 50441), (117, 50498), (120, 50507), (134, 50561),

Gene: Xincheng\_50 Start: 49257, Stop: 48859, Start Num: 40

Candidate Starts for Xincheng\_50:

(Start: 40 @49257 has 16 MA's), (64, 49215), (66, 49209), (67, 49206), (111, 48960), (115, 48939), (123, 48903),

Gene: Yassified\_23 Start: 7354, Stop: 7710, Start Num: 58

Candidate Starts for Yassified\_23:

(Start: 58 @7354 has 177 MA's), (102, 7561), (121, 7657),

Gene: YemiJoy2021\_27 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for YemiJoy2021\_27:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),

Gene: Yoshand\_57 Start: 48332, Stop: 47961, Start Num: 55

Candidate Starts for Yoshand\_57:

(14, 48533), (16, 48488), (18, 48458), (Start: 55 @48332 has 157 MA's), (Start: 57 @48329 has 105 MA's), (73, 48290), (88, 48209), (109, 48047), (110, 48044), (121, 47993),

Gene: YouGoGlencoco\_57 Start: 48650, Stop: 48279, Start Num: 55  
Candidate Starts for YouGoGlencoco\_57:  
(14, 48851), (16, 48806), (18, 48776), (Start: 55 @48650 has 157 MA's), (Start: 57 @48647 has 105 MA's), (73, 48608), (80, 48590), (87, 48536), (88, 48527), (109, 48365), (110, 48362), (121, 48311),

Gene: YoungMoneyMata\_26 Start: 7905, Stop: 8261, Start Num: 58  
Candidate Starts for YoungMoneyMata\_26:  
(Start: 58 @7905 has 177 MA's), (89, 8019), (102, 8112), (121, 8208),

Gene: Yucca\_26 Start: 8621, Stop: 8977, Start Num: 58  
Candidate Starts for Yucca\_26:  
(Start: 58 @8621 has 177 MA's), (102, 8828), (121, 8924),

Gene: YungJamal\_80 Start: 48976, Stop: 48599, Start Num: 48  
Candidate Starts for YungJamal\_80:  
(Start: 26 @49024 has 4 MA's), (Start: 48 @48976 has 24 MA's), (74, 48916), (79, 48904), (89, 48841), (102, 48748), (104, 48742), (107, 48697), (118, 48652), (125, 48613), (127, 48610),

Gene: Zaider\_56 Start: 48590, Stop: 48219, Start Num: 55  
Candidate Starts for Zaider\_56:  
(9, 48935), (14, 48791), (16, 48746), (18, 48716), (34, 48629), (Start: 55 @48590 has 157 MA's), (Start: 57 @48587 has 105 MA's), (88, 48467), (109, 48305), (110, 48302), (121, 48251),

Gene: Zakhe101\_75 Start: 47767, Stop: 47390, Start Num: 48  
Candidate Starts for Zakhe101\_75:  
(Start: 26 @47815 has 4 MA's), (Start: 48 @47767 has 24 MA's), (74, 47707), (79, 47695), (89, 47632), (102, 47539), (104, 47533), (107, 47488), (118, 47443), (125, 47404), (127, 47401),

Gene: Zalkecks\_28 Start: 8703, Stop: 9059, Start Num: 58  
Candidate Starts for Zalkecks\_28:  
(13, 8466), (Start: 58 @8703 has 177 MA's), (102, 8910), (121, 9006),

Gene: Zebo\_74 Start: 47529, Stop: 47152, Start Num: 48  
Candidate Starts for Zebo\_74:  
(Start: 48 @47529 has 24 MA's), (74, 47469), (79, 47457), (89, 47394), (102, 47301), (104, 47295), (107, 47250), (118, 47205), (125, 47166), (127, 47163),

Gene: Zeenon\_28 Start: 8691, Stop: 9047, Start Num: 58  
Candidate Starts for Zeenon\_28:  
(Start: 58 @8691 has 177 MA's), (89, 8805), (102, 8898), (121, 8994),

Gene: Zelda\_56 Start: 48692, Stop: 48321, Start Num: 55  
Candidate Starts for Zelda\_56:  
(14, 48893), (16, 48848), (18, 48818), (Start: 55 @48692 has 157 MA's), (Start: 57 @48689 has 105 MA's), (73, 48650), (88, 48569), (109, 48407), (110, 48404), (121, 48353),

Gene: ZenTime222\_39 Start: 31045, Stop: 31446, Start Num: 35  
Candidate Starts for ZenTime222\_39:  
(12, 30802), (Start: 35 @31045 has 15 MA's), (Start: 46 @31063 has 47 MA's), (91, 31219), (98, 31270), (102, 31294), (121, 31414), (122, 31417),

Gene: ZoeJ\_39 Start: 31158, Stop: 30775, Start Num: 35  
Candidate Starts for ZoeJ\_39:

(33, 31161), (Start: 35 @31158 has 15 MA's), (69, 31098), (76, 31080), (86, 31035), (99, 30948), (102, 30927), (112, 30855), (121, 30810),

Gene: Zonia\_57 Start: 48664, Stop: 48296, Start Num: 57

Candidate Starts for Zonia\_57:

(8, 49027), (14, 48868), (16, 48823), (18, 48793), (Start: 55 @48667 has 157 MA's), (Start: 57 @48664 has 105 MA's), (73, 48625), (80, 48607), (87, 48553), (88, 48544), (109, 48382), (110, 48379), (121, 48328),

Gene: ZygoTaiga\_26 Start: 8699, Stop: 9055, Start Num: 58

Candidate Starts for ZygoTaiga\_26:

(Start: 58 @8699 has 177 MA's), (102, 8906), (121, 9002),