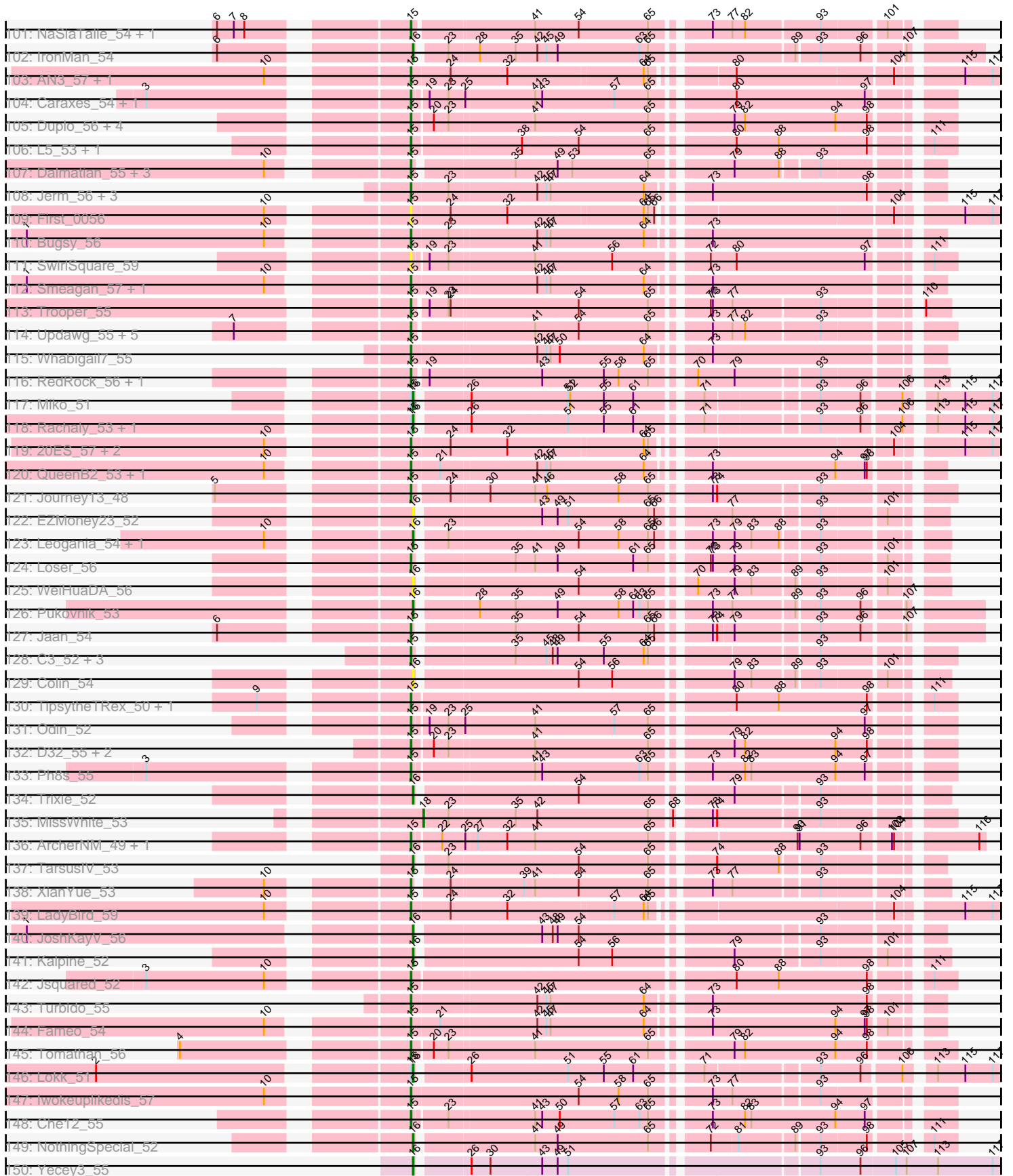






Pham 157504



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 157504 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157504 has 358 members, 29 are drafts.

Phages represented in each track:

- Track 1 : Chargerpower\_52
- Track 2 : Ruotula\_52
- Track 3 : Greg\_51, Pippin\_51, Ciao\_49, Michley\_49, Zeeculate\_47, Fajezeel\_51
- Track 4 : Licorice\_52, Froghopper\_47, BigPaolini\_49, Tasp14\_51, Marsha\_49
- Track 5 : Maroc7\_47, Fascinus\_45, Mryolo\_47
- Track 6 : Bxb1\_45, Lesedi\_46, JuliaChild\_50, Pita2\_52, Homines\_42, Francis47\_48, Gompeii16\_48, Bircsak\_48, Swole\_50, Petp2012\_50, PacerPaul\_49, TwoPeat\_49, PSullivan\_49, Tote\_45, Eyeball\_51, Molly\_50, Agaliana\_45
- Track 7 : Trouble\_52, BaconJack\_52, A6\_45, BK1\_45, NEHalo\_47
- Track 8 : Smairt\_51, PhrostyMug\_48, Applejack\_45, Aeneas\_51, Mule\_46, Perseus\_49
- Track 9 : Jasper\_51, Fenn\_52, Squee\_50, Naira\_52, Bethlehem\_50, Dreamboat\_51, CactusRose\_47, PherrisBueller\_49
- Track 10 : Seabiscuit\_52, U2\_49, Ichabod\_52, McGuire\_51
- Track 11 : Blue\_49, Barriga\_50, Turj99\_48, Kenmech\_53, Niza\_52, Thor\_47, SkiPole\_54, STLscum\_52, Graduation\_53, Scowl\_50, Norz\_50, Snazzy\_48, Magnito\_48, Target\_50, Wilkins\_49, Topgun\_49, Gandalf20\_52, Alsfro\_53, Paraselene\_47, Pepe\_46, Espresso\_49, Abrogate\_480, Zeuska\_48, Nhonho\_50, SarFire\_47, Rhynn\_48, Teodoridan\_48, Parliament\_49, StewieG\_48
- Track 12 : Conceptll\_51, Acme\_51
- Track 13 : Dussy\_51, Big3\_49, Abbyshoes\_52, Buttons\_48, Tripl3t\_49, Bigfoot\_45, Marge\_49, Gyzzlar\_45, Ajay\_51, Petruccio\_49
- Track 14 : SwissCheese\_51, Altman\_52, RidgeCB\_49, Forsytheast\_49, Kanely\_51, Crispicous1\_47, Bruns\_48, Moose\_49
- Track 15 : Wheeler\_50
- Track 16 : Jorgensen\_51, Corvo\_50, Bexan\_48, Beatrix\_49, StrongArm\_49, MaryBeth\_49, Makemake\_49, MetalQZJ\_48
- Track 17 : Zephyr\_49, Magnar\_49, Violet\_47, Peterson\_54
- Track 18 : AFIS\_47, SpikeBT\_49, GageAP\_50
- Track 19 : Burton\_49, Museum\_50
- Track 20 : Dexes\_50, Pelly\_49
- Track 21 : BluSpix\_49, IgnatiusPatJac\_50, DrFeelGood\_47
- Track 22 : BigMau\_50, Rohr\_50, Bob3\_47, Bones\_50, Jerm2\_50, HermioneGrange\_49, Cueyllyss\_51
- Track 23 : Doom\_49
- Track 24 : Nerujay\_52, JackSparrow\_50
- Track 25 : Edtherson\_49, Monet\_52, Treddle\_50

- Track 26 : Papez\_52, Hermia\_49, PattyP\_50, Arcanine\_50, HarryOW\_48, GrecoEtereo\_50, Slagathor\_51, KBG\_51
- Track 27 : Dynamix\_51, Pinto\_49
- Track 28 : Kykar\_49
- Track 29 : Smeagol\_51
- Track 30 : Alvin\_49
- Track 31 : Carlyle\_48
- Track 32 : Kugel\_50
- Track 33 : ILeeKay\_53, Arlo\_47, Solon\_48, Anglerfish\_51, Manatee\_51
- Track 34 : Seanderson\_51
- Track 35 : BPBiabs31\_50
- Track 36 : TheloniousMonk\_50
- Track 37 : Switzer\_51
- Track 38 : Hope4ever\_52, Pari\_51, Rajelicia\_50
- Track 39 : Killigrew\_49
- Track 40 : Rubeus\_49
- Track 41 : DreamCatcher\_53
- Track 42 : LilBib\_50
- Track 43 : JC27\_51, Ashballer\_51, KyMonks1A\_51
- Track 44 : Paphu\_47
- Track 45 : Watermelon\_50, QTRlifeCrisis\_53
- Track 46 : Euphoria\_47
- Track 47 : Sunshine924\_50
- Track 48 : Rutherford\_51
- Track 49 : Rufus\_50
- Track 50 : PascalRango\_50
- Track 51 : Lopton\_50, KSSJEB\_49
- Track 52 : Chanagan\_46
- Track 53 : Atkinbua\_52
- Track 54 : HanShotFirst\_49, PinkPlastic\_49, Briton15\_52
- Track 55 : MPlant7149\_48
- Track 56 : Ringer\_50
- Track 57 : Lamina13\_50
- Track 58 : Adahisdi\_49
- Track 59 : MrGordo\_49
- Track 60 : Sibs6\_50
- Track 61 : Sagefire\_52
- Track 62 : BillKnuckles\_50
- Track 63 : Oogway\_48
- Track 64 : Fushigi\_48
- Track 65 : Marcell\_47
- Track 66 : Traft412\_52
- Track 67 : Sumter\_46
- Track 68 : Ohno789\_51
- Track 69 : Gwendoluna\_54
- Track 70 : BeesKnees\_51, Lockley\_48
- Track 71 : DD5\_48
- Track 72 : Dulcie\_50
- Track 73 : Bud\_53, Mulciber\_53, Hutc2\_53, MaCh\_54, Jabith\_54, Salz\_52, Orange\_53, Insomnia\_53, TinyTimmy\_52, Et2Brutus\_52, Flaverint\_54, Fibonacci\_53, Bowtie\_54, Joselito\_54, Bachome\_55, Aneem\_54, Sham4\_53, Snape\_53, Lucivia\_54, Petersenfast\_52, Mabel\_53, Munch\_54, Gilberta\_54, Timothy\_53
- Track 74 : Ebony\_53

- Track 75 : Steamy\_50
- Track 76 : DarthPhader\_50
- Track 77 : Refuge\_52
- Track 78 : Pharaoh\_49
- Track 79 : Zimmer\_51
- Track 80 : Gail\_58
- Track 81 : Luchador\_58
- Track 82 : Jeeves\_58
- Track 83 : SororFago\_56
- Track 84 : Nedarya\_55
- Track 85 : Anon\_56
- Track 86 : PainterBoy\_55, Lucyedi\_55, EagleEye\_56
- Track 87 : 40AC\_55
- Track 88 : Adzzy\_55
- Track 89 : Benvolio\_51, Echild\_54
- Track 90 : ChipMunk\_56, EvilGenius\_56, KingCyrus\_56
- Track 91 : Phaded\_55, Landor\_55, Bactobuster\_53
- Track 92 : Georgie2\_55, SweetiePie\_54, SnapTap\_54, SemperFi\_55, Crucio\_54
- Track 93 : FiringLine\_54, QueenBeesly\_54
- Track 94 : Larenn\_53, Malec\_54
- Track 95 : CRB1\_58
- Track 96 : Acolyte\_49
- Track 97 : HarryHoudini\_55, Drake55\_56, Piro94\_54
- Track 98 : NicoleTera\_53
- Track 99 : AbbyPaige\_56
- Track 100 : Power\_53
- Track 101 : NaSiaTalie\_54, Flare16\_54
- Track 102 : IronMan\_54
- Track 103 : AN3\_57, VA6\_55
- Track 104 : Caraxes\_54, Superchunk\_52
- Track 105 : Duplo\_56, StarStuff\_56, Kerberos\_56, DBQu4n\_56, Pomar16\_56
- Track 106 : L5\_53, Koduck\_55
- Track 107 : Dalmatian\_55, DudeLittle\_53, Retro23\_55, Anselm\_55
- Track 108 : Jerm\_56, Leviathan\_56, Agape74\_56, LilTurb\_55
- Track 109 : First\_0056
- Track 110 : Buggy\_56
- Track 111 : SwirlSquare\_59
- Track 112 : Smeagan\_57, Dignity\_56
- Track 113 : Trooper\_55
- Track 114 : Updawg\_55, Equemioh13\_55, WideWale\_55, MiculUcigas\_54, Centaur\_55, Baehexic\_53
- Track 115 : Whabigail7\_55
- Track 116 : RedRock\_56, AnnaL29\_56
- Track 117 : Miko\_51
- Track 118 : Rachaly\_53, BobSwaget\_50
- Track 119 : 20ES\_57, Deloris\_55, BengiVuitton\_56
- Track 120 : QueenB2\_53, Heffalump\_53
- Track 121 : Journey13\_48
- Track 122 : EZMoney23\_52
- Track 123 : Leogania\_54, BiancaTri92\_54
- Track 124 : Loser\_56
- Track 125 : WeiHuaDA\_56
- Track 126 : Pukovnik\_53

- Track 127 : Jaan\_54
- Track 128 : C3\_52, VC3\_57, AN9\_57, ANI8\_57
- Track 129 : Colin\_54
- Track 130 : TopsytheTRex\_50, Serenity\_54
- Track 131 : Odin\_52
- Track 132 : D32\_55, Naji\_56, D29\_53
- Track 133 : Ph8s\_55
- Track 134 : Trixie\_52
- Track 135 : MissWhite\_53
- Track 136 : ArcherNM\_49, Changeling\_53
- Track 137 : TarsusIV\_53
- Track 138 : XianYue\_53
- Track 139 : LadyBird\_59
- Track 140 : JoshKayV\_56
- Track 141 : Kalpine\_52
- Track 142 : Jsquared\_52
- Track 143 : Turbido\_55
- Track 144 : Fameo\_54
- Track 145 : Tomathan\_56
- Track 146 : Lokk\_51
- Track 147 : Iwokeuplikedis\_57
- Track 148 : Che12\_55
- Track 149 : NothingSpecial\_52
- Track 150 : Yecey3\_55

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

The start number called the most often in the published annotations is 13, it was called in 143 of the 329 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AFIS\_47, Abbyshoes\_52, Abrogate\_480, Acme\_51, Adahisdi\_49, Ajay\_51, Alsfro\_53, Alvin\_49, Anglerfish\_51, Arcanine\_50, Arlo\_47, Ashballer\_51, Atkinbua\_52, BPBiabs31\_50, Barriga\_50, Beatrix\_49, Bethlehem\_50, Bexan\_48, Big3\_49, BigMau\_50, BigPaolini\_49, Bigfoot\_45, BluSpix\_49, Blue\_49, Bob3\_47, Bones\_50, Burton\_49, Buttons\_48, CactusRose\_47, Carlyle\_48, Chanagan\_46, Ciao\_49, ConceptII\_51, Corvo\_50, Cueyllyss\_51, Dexes\_50, Doom\_49, DrFeelGood\_47, DreamCatcher\_53, Dreamboat\_51, Dulcie\_50, Dussy\_51, Dynamix\_51, Edtherson\_49, Espresso\_49, Euphoria\_47, Fajezeel\_51, Fascinus\_45, Fenn\_52, Froghopper\_47, Fushigi\_48, GageAP\_50, Gandalf20\_52, Graduation\_53, GrecoEtereo\_50, Greg\_51, Gwendoluna\_54, Gyzlar\_45, HarryOW\_48, Hermia\_49, HermioneGrange\_49, Hope4ever\_52, ILeeKay\_53, Ichabod\_52, IgnatiusPatJac\_50, JC27\_51, Jasper\_51, Jerm2\_50, Jorgensen\_51, KBG\_51, KSSJEB\_49, Kenmech\_53, Kugel\_50, KyMonks1A\_51, Licorice\_52, LilBib\_50, Lopton\_50, MPlant7149\_48, Magnar\_49, Magnito\_48, Makemake\_49, Manatee\_51, Marcell\_47, Marge\_49, Maroc7\_47, Marsha\_49, MaryBeth\_49, McGuire\_51, MetalQZJ\_48, Michley\_49, Monet\_52, Mryolo\_47, Museum\_50, Naira\_52, Nhonho\_50, Niza\_52, Norz\_50, Papez\_52, Paphu\_47, Paraselene\_47, Pari\_51, Parliament\_49, PascalRango\_50, PattyP\_50, Pelly\_49, Pepe\_46, Peterson\_54, Petruccio\_49, PherrisBueller\_49, Pinto\_49, Pippin\_51, QTRLifeCrisis\_53, Rajelicia\_50, Rhynn\_48,

Rohr\_50, Rubeus\_49, Rufus\_50, Ruotula\_52, Rutherferd\_51, STLscum\_52, Sagefire\_52, SarFire\_47, Scowl\_50, Seabiscuit\_52, SkiPole\_54, Slagathor\_51, Smeagol\_51, Snazzy\_48, Solon\_48, SpikeBT\_49, Squee\_50, StewieG\_48, StrongArm\_49, Sumter\_46, Switzer\_51, Target\_50, Tasp14\_51, Teodoridan\_48, TheloniousMonk\_50, Thor\_47, Topgun\_49, Traft412\_52, Treddle\_50, Tripl3t\_49, Turj99\_48, U2\_49, Violet\_47, Watermelon\_50, Wheeler\_50, Wilkins\_49, Zeeculate\_47, Zephyr\_49, Zeuska\_48,

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

- BillKnuckles\_50, Lamina13\_50, Ringer\_50,

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

- 20ES\_57, 40AC\_55, A6\_45, AN3\_57, AN9\_57, ANI8\_57, AbbyPaige\_56, Acolyte\_49, Adzzy\_55, Aeneas\_51, Agaliana\_45, Agape74\_56, Altman\_52, Aneem\_54, AnnaL29\_56, Anon\_56, Anselm\_55, Applejack\_45, ArcherNM\_49, BK1\_45, Bachome\_55, BaconJack\_52, Bactobuster\_53, Baehexic\_53, BeesKnees\_51, BengiVuitton\_56, Benvolio\_51, BiancaTri92\_54, Bircsak\_48, BobSwaget\_50, Bowtie\_54, Briton15\_52, Bruns\_48, Bud\_53, Buggy\_56, Bxb1\_45, C3\_52, CRB1\_58, Caraxes\_54, Centaur\_55, Changeling\_53, Chargerpower\_52, Che12\_55, ChipMunk\_56, Colin\_54, Crispicous1\_47, Crucio\_54, D29\_53, D32\_55, DBQu4n\_56, DD5\_48, Dalmatian\_55, DarthPhader\_50, Deloris\_55, Dignity\_56, Drake55\_56, DudeLittle\_53, Duplo\_56, EZMoney23\_52, EagleEye\_56, Ebony\_53, Echild\_54, Equemioh13\_55, Et2Brutus\_52, EvilGenius\_56, Eyeball\_51, Fameo\_54, Fibonacci\_53, FiringLine\_54, First\_0056, Flare16\_54, Flaverint\_54, Forsytheast\_49, Francis47\_48, Gail\_58, Georgie2\_55, Gilberta\_54, Gompeii16\_48, HanShotFirst\_49, HarryHoudini\_55, Heffalump\_53, Homines\_42, Hutc2\_53, Insomnia\_53, IronMan\_54, Iwokeuplikedis\_57, Jaan\_54, Jabith\_54, JackSparrow\_50, Jeeves\_58, Jerm\_56, Joselito\_54, JoshKayV\_56, Journey13\_48, Jsquared\_52, JuliaChild\_50, Kalpine\_52, Kanely\_51, Kerberos\_56, Killigrew\_49, KingCyrus\_56, Koduck\_55, Kykar\_49, L5\_53, LadyBird\_59, Landor\_55, Larenn\_53, Leogania\_54, Lesedi\_46, Leviathan\_56, LilTurb\_55, Lockley\_48, Lökk\_51, Loser\_56, Luchador\_58, Lucivia\_54, Lucyedi\_55, MaCh\_54, Mabel\_53, Malec\_54, MiculUcigas\_54, Miko\_51, MissWhite\_53, Molly\_50, Moose\_49, MrGordo\_49, Mulciber\_53, Mule\_46, Munch\_54, NEHalo\_47, NaSiaTalie\_54, Naji\_56, Nedarya\_55, Nerujay\_52, NicoleTera\_53, NothingSpecial\_52, Odin\_52, Ohno789\_51, Oogway\_48, Orange\_53, PSullivan\_49, PacerPaul\_49, PainterBoy\_55, Perseus\_49, Petersenfast\_52, Petp2012\_50, Ph8s\_55, Phaded\_55, Pharaoh\_49, PhrostyMug\_48, PinkPlastic\_49, Piro94\_54, Pita2\_52, Pomar16\_56, Power\_53, Pukovnik\_53, QueenB2\_53, QueenBeesly\_54, Rachaly\_53, RedRock\_56, Refuge\_52, Retro23\_55, RidgeCB\_49, Salz\_52, Seanderson\_51, SemperFi\_55, Serenity\_54, Sham4\_53, Sibs6\_50, Smairt\_51, Smeagan\_57, SnapTap\_54, Snape\_53, SororFago\_56, StarStuff\_56, Steamy\_50, Sunshine924\_50, Superchunk\_52, SweetiePie\_54, SwirlSquare\_59, SwissCheese\_51, Swole\_50, TarsusIV\_53, Timothy\_53, TinyTimmy\_52, TipsytheTRex\_50, Tomathan\_56, Tote\_45, Trixie\_52, Trooper\_55, Trouble\_52, Turbido\_55, TwoPeat\_49, Updawn\_55, VA6\_55, VC3\_57, WeiHuaDA\_56, Whabigail7\_55, WideWale\_55, XianYue\_53, Yecey3\_55, Zimmer\_51,

### Summary by start number:

Start 12:

- Found in 8 of 358 ( 2.2% ) of genes in pham
- Manual Annotations of this start: 1 of 329
- Called 12.5% of time when present



- Phage (with cluster) where this start called: DD5\_48 (A1),

#### Start 13:

- Found in 156 of 358 ( 43.6% ) of genes in pham
- Manual Annotations of this start: 143 of 329
- Called 98.1% of time when present
- Phage (with cluster) where this start called: AFIS\_47 (A1), Abbyshoes\_52 (A1), Abrogate\_480 (A1), Acme\_51 (A1), Adahisdi\_49 (A1), Ajay\_51 (A1), Alsfro\_53 (A1), Alvin\_49 (A1), Anglerfish\_51 (A1), Arcanine\_50 (A1), Arlo\_47 (A1), Ashballer\_51 (A1), Atkinbua\_52 (A1), BPBiebs31\_50 (A1), Barriga\_50 (A1), Beatrix\_49 (A1), Bethlehem\_50 (A1), Bexan\_48 (A1), Big3\_49 (A1), BigMau\_50 (A1), BigPaolini\_49 (A1), Bigfoot\_45 (A1), BluSpix\_49 (A1), Blue\_49 (A1), Bob3\_47 (A1), Bones\_50 (A1), Burton\_49 (A1), Buttons\_48 (A1), CactusRose\_47 (A1), Carlyle\_48 (A1), Chanagan\_46 (A1), Ciao\_49 (A1), ConceptII\_51 (A1), Corvo\_50 (A1), Cueyllyss\_51 (A1), Dexes\_50 (A1), Doom\_49 (A1), DrFeelGood\_47 (A1), DreamCatcher\_53 (A1), Dreamboat\_51 (A1), Dulcie\_50 (A1), Dussy\_51 (A1), Dynamix\_51 (A1), Edtherson\_49 (A1), Espresso\_49 (A1), Euphoria\_47 (A1), Fajezeel\_51 (A1), Fascinus\_45 (A1), Fenn\_52 (A1), Froghopper\_47 (A1), Fushigi\_48 (A1), GageAP\_50 (A1), Gandalf20\_52 (A1), Graduation\_53 (A1), GrecoEtereo\_50 (A1), Greg\_51 (A1), Gwendoluna\_54 (A1), Gyzlar\_45 (A1), HarryOW\_48 (A1), Hermia\_49 (A1), HermioneGrange\_49 (A1), Hope4ever\_52 (A1), ILeeKay\_53 (A1), Ichabod\_52 (A1), IgnatiusPatJac\_50 (A1), JC27\_51 (A1), Jasper\_51 (A1), Jerm2\_50 (A1), Jorgensen\_51 (A1), KBG\_51 (A1), KSSJEB\_49 (A1), Kenmech\_53 (A1), Kugel\_50 (A1), KyMonks1A\_51 (A1), Licorice\_52 (A1), LilBib\_50 (A1), Lopton\_50 (A1), MPlant7149\_48 (A1), Magnar\_49 (A1), Magnito\_48 (A1), Makemake\_49 (A1), Manatee\_51 (A1), Marcell\_47 (A1), Marge\_49 (A1), Maroc7\_47 (A1), Marsha\_49 (A1), MaryBeth\_49 (A1), McGuire\_51 (A1), MetalQZJ\_48 (A1), Michley\_49 (A1), Monet\_52 (A1), Mryolo\_47 (A1), Museum\_50 (A1), Naira\_52 (A1), Nhonho\_50 (A1), Niza\_52 (A1), Norz\_50 (A1), Papez\_52 (A1), Paphu\_47 (A1), Paraselene\_47 (A1), Pari\_51 (A1), Parliament\_49 (A1), PascalRango\_50 (A1), PattyP\_50 (A1), Pelly\_49 (A1), Pepe\_46 (A1), Peterson\_54 (A1), Petruccio\_49 (A1), PherrisBueller\_49 (A1), Pinto\_49 (A1), Pippin\_51 (A1), QTRlifeCrisis\_53 (A1), Rajelicia\_50 (A1), Rhynn\_48 (A1), Rohr\_50 (A1), Rubeus\_49 (A1), Rufus\_50 (A1), Ruotula\_52 (A1), Rutherford\_51 (A1), STLscum\_52 (A1), Sagefire\_52 (A1), SarFire\_47 (A1), Scowl\_50 (A1), Seabiscuit\_52 (A1), SkiPole\_54 (A1), Slagathor\_51 (A1), Smeagol\_51 (A1), Snazzy\_48 (A1), Solon\_48 (A1), SpikeBT\_49 (A1), Squee\_50 (A1), StewieG\_48 (A1), StrongArm\_49 (A1), Sumter\_46 (A1), Switzer\_51 (A1), Target\_50 (A1), Tasp14\_51 (A1), Teodoridan\_48 (A1), TheloniousMonk\_50 (A1), Thor\_47 (A1), Topgun\_49 (A1), Traft412\_52 (A1), Treddle\_50 (A1), Tripl3t\_49 (A1), Turj99\_48 (A1), U2\_49 (A1), Violet\_47 (A1), Watermelon\_50 (A1), Wheeler\_50 (A1), Wilkins\_49 (A1), Zeeculate\_47 (A1), Zephyr\_49 (A1), Zeuska\_48 (A1),

#### Start 14:

- Found in 52 of 358 ( 14.5% ) of genes in pham
- Manual Annotations of this start: 46 of 329
- Called 98.1% of time when present
- Phage (with cluster) where this start called: A6\_45 (A1), Aeneas\_51 (A1), Agaliana\_45 (A1), Altman\_52 (A1), Applejack\_45 (A1), BK1\_45 (A1), BaconJack\_52 (A1), BeesKnees\_51 (A1), Bircsak\_48 (A1), Briton15\_52 (A1), Bruns\_48 (A1), Bxb1\_45 (A1), Crispicous1\_47 (A1), Eyeball\_51 (A1), Forsytheast\_49 (A1), Francis47\_48 (A1), Gompeii16\_48 (A1), HanShotFirst\_49 (A1), Homines\_42 (A1), JackSparrow\_50 (A1), JuliaChild\_50 (A1), Kanely\_51 (A1), Killigrew\_49 (A1), Kykar\_49 (A1), Lesedi\_46 (A1), Lockley\_48 (A1), Molly\_50 (A1), Moose\_49 (A1),

MrGordo\_49 (A1), Mule\_46 (A1), NEHalo\_47 (A1), Nerujay\_52 (A1), Ohno789\_51 (A1), Oogway\_48 (A1), PSullivan\_49 (A1), PacerPaul\_49 (A1), Perseus\_49 (A1), Petp2012\_50 (A1), PhrostyMug\_48 (A1), PinkPlastic\_49 (A1), Pita2\_52 (A1), RidgeCB\_49 (A1), Seanderson\_51 (A1), Sibs6\_50 (A1), Smairt\_51 (A1), Sunshine924\_50 (A1), SwissCheese\_51 (A1), Swole\_50 (A1), Tote\_45 (A1), Trouble\_52 (A1), TwoPeat\_49 (A1),

Start 15:

- Found in 116 of 358 ( 32.4% ) of genes in pham
- Manual Annotations of this start: 102 of 329
- Called 96.6% of time when present
- Phage (with cluster) where this start called: 20ES\_57 (A2), 40AC\_55 (A17), AN3\_57 (A2), AN9\_57 (A2), ANI8\_57 (A2), AbbyPaige\_56 (A2), Acolyte\_49 (A2), Adzzy\_55 (A2), Agape74\_56 (A2), Aneem\_54 (A11), AnnaL29\_56 (A2), Anselm\_55 (A2), ArcherNM\_49 (A2), Bachome\_55 (A11), Baehexic\_53 (A2), BengiVuitton\_56 (A2), Benvolio\_51 (A2), Bowtie\_54 (A11), Bud\_53 (A11), Buggy\_56 (A2), C3\_52 (A2), CRB1\_58 (A2), Caraxes\_54 (A2), Centaur\_55 (A2), Changeling\_53 (A2), Che12\_55 (A2), Crucio\_54 (A2), D29\_53 (A2), D32\_55 (A2), DBQu4n\_56 (A2), Dalmatian\_55 (A2), Deloris\_55 (A2), Dignity\_56 (A2), Drake55\_56 (A2), DudeLittle\_53 (A2), Duplo\_56 (A2), Ebony\_53 (A11), Echild\_54 (A2), Equemioh13\_55 (A2), Et2Brutus\_52 (A11), Fameo\_54 (A2), Fibonacci\_53 (A11), FiringLine\_54 (A2), First\_0056 (A2), Flare16\_54 (A2), Flaverint\_54 (A11), Georgie2\_55 (A2), Gilberta\_54 (A11), HarryHoudini\_55 (A2), Heffalump\_53 (A2), Hutc2\_53 (A11), Insomnia\_53 (A11), Iwokeuplikedis\_57 (A2), Jaan\_54 (A2), Jabith\_54 (A11), Jerm\_56 (A2), Joselito\_54 (A11), Journey13\_48 (A2), Jsquared\_52 (A2), Kerberos\_56 (A2), Koduck\_55 (A2), L5\_53 (A2), LadyBird\_59 (A2), Larenn\_53 (A2), Leviathan\_56 (A2), LiITurb\_55 (A2), Loser\_56 (A2), Lucivia\_54 (A11), MaCh\_54 (A11), Mabel\_53 (A11), Malec\_54 (A2), MiculUcigas\_54 (A2), Mulciber\_53 (A11), Munch\_54 (A11), NaSiaTalie\_54 (A2), Naji\_56 (A2), Nedarya\_55 (A15), NicoleTera\_53 (A2), Odin\_52 (A2), Orange\_53 (A11), Petersenfast\_52 (A11), Ph8s\_55 (A2), Piro94\_54 (A2), Pomar16\_56 (A2), Power\_53 (A2), QueenB2\_53 (A2), QueenBeesly\_54 (A2), RedRock\_56 (A2), Retro23\_55 (A2), Salz\_52 (A11), SemperFi\_55 (A2), Serenity\_54 (A2), Sham4\_53 (A11), Smeagan\_57 (A2), SnapTap\_54 (A2), Snape\_53 (A11), StarStuff\_56 (A2), Superchunk\_52 (A2), SweetiePie\_54 (A2), SwirlSquare\_59 (A2), Timothy\_53 (A11), TinyTimmy\_52 (A11), TipsytheTRex\_50 (A2), Tomathan\_56 (A2), Trooper\_55 (A2), Turbido\_55 (A2), Updawg\_55 (A2), VA6\_55 (A2), VC3\_57 (A2), Whabigail7\_55 (A2), WideWale\_55 (A2), XianYue\_53 (A2),

Start 16:

- Found in 97 of 358 ( 27.1% ) of genes in pham
- Manual Annotations of this start: 34 of 329
- Called 39.2% of time when present
- Phage (with cluster) where this start called: Bactobuster\_53 (A2), BiancaTri92\_54 (A2), BillKnuckles\_50 (A1), BobSwaget\_50 (A2), Chargerpower\_52 (A), ChipMunk\_56 (A2), Colin\_54 (A2), DarthPhader\_50 (A12), EZMoney23\_52 (A2), EagleEye\_56 (A16), EvilGenius\_56 (A2), Gail\_58 (A14), IronMan\_54 (A2), Jeeves\_58 (A14), JoshKayV\_56 (A2), Kalpine\_52 (A2), KingCyrus\_56 (A2), Lamina13\_50 (A1), Landor\_55 (A2), Leogania\_54 (A2), Lokk\_51 (A2), Luchador\_58 (A14), Lucyedi\_55 (A16), Miko\_51 (A2), NothingSpecial\_52 (A2), PainterBoy\_55 (A16), Phaded\_55 (A2), Pharaoh\_49 (A12), Pukovnik\_53 (A2), Rachaly\_53 (A2), Refuge\_52 (A12), SororFago\_56 (A14), Steamy\_50 (A12), TarsusIV\_53 (A2), Trixie\_52 (A2), WeiHuaDA\_56 (A2), Yecey3\_55 (A9), Zimmer\_51 (A12),

Start 18:

- Found in 1 of 358 ( 0.3% ) of genes in pham
- Manual Annotations of this start: 1 of 329
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MissWhite\_53 (A2),

Start 22:

- Found in 3 of 358 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 329
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Anon\_56 (A15),

Start 24:

- Found in 137 of 358 ( 38.3% ) of genes in pham
- Manual Annotations of this start: 1 of 329
- Called 0.7% of time when present
- Phage (with cluster) where this start called: Ringer\_50 (A1),

**Summary by clusters:**

There are 10 clusters represented in this pham: A, A14, A17, A16, A11, A12, A15, A1, A2, A9,

Info for manual annotations of cluster A:

- Start number 16 was manually annotated 1 time for cluster A.

Info for manual annotations of cluster A1:

- Start number 12 was manually annotated 1 time for cluster A1.
- Start number 13 was manually annotated 143 times for cluster A1.
- Start number 14 was manually annotated 46 times for cluster A1.
- Start number 16 was manually annotated 2 times for cluster A1.
- Start number 24 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster A11:

- Start number 15 was manually annotated 22 times for cluster A11.

Info for manual annotations of cluster A12:

- Start number 16 was manually annotated 5 times for cluster A12.

Info for manual annotations of cluster A14:

- Start number 16 was manually annotated 4 times for cluster A14.

Info for manual annotations of cluster A15:

- Start number 15 was manually annotated 1 time for cluster A15.
- Start number 22 was manually annotated 1 time for cluster A15.

Info for manual annotations of cluster A16:

- Start number 16 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A2:

- Start number 15 was manually annotated 79 times for cluster A2.
- Start number 16 was manually annotated 18 times for cluster A2.

- Start number 18 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A9:

- Start number 16 was manually annotated 1 time for cluster A9.

### **Gene Information:**

Gene: 20ES\_57 Start: 37404, Stop: 36643, Start Num: 15

Candidate Starts for 20ES\_57:

(10, 37569), (Start: 15 @37404 has 102 MA's), (Start: 24 @37350 has 1 MA's), (32, 37269), (64, 37083), (65, 37077), (104, 36771), (115, 36690), (117, 36651),

Gene: 40AC\_55 Start: 38040, Stop: 37369, Start Num: 15

Candidate Starts for 40AC\_55:

(Start: 15 @38040 has 102 MA's), (35, 37908), (49, 37851), (93, 37515), (98, 37449),

Gene: A6\_45 Start: 35301, Stop: 34516, Start Num: 14

Candidate Starts for A6\_45:

(Start: 14 @35301 has 46 MA's), (30, 35199), (34, 35166), (36, 35163), (45, 35121), (59, 35007), (61, 34998), (62, 34992), (67, 34965), (72, 34911), (92, 34788), (95, 34734), (108, 34641), (112, 34602), (114, 34587),

Gene: AFIS\_47 Start: 36105, Stop: 35314, Start Num: 13

Candidate Starts for AFIS\_47:

(Start: 13 @36105 has 143 MA's), (Start: 16 @36090 has 34 MA's), (Start: 24 @36051 has 1 MA's), (33, 35970), (59, 35805), (61, 35796), (62, 35790), (67, 35763), (72, 35709), (75, 35682), (79, 35679), (92, 35586), (95, 35532), (108, 35439), (112, 35400), (114, 35385),

Gene: AN3\_57 Start: 36089, Stop: 35328, Start Num: 15

Candidate Starts for AN3\_57:

(10, 36254), (Start: 15 @36089 has 102 MA's), (Start: 24 @36035 has 1 MA's), (32, 35954), (64, 35768), (65, 35762), (80, 35672), (104, 35456), (115, 35375), (117, 35336),

Gene: AN9\_57 Start: 37029, Stop: 36343, Start Num: 15

Candidate Starts for AN9\_57:

(Start: 15 @37029 has 102 MA's), (35, 36897), (45, 36855), (48, 36846), (49, 36840), (55, 36774), (64, 36717), (65, 36711), (93, 36504),

Gene: ANI8\_57 Start: 37029, Stop: 36343, Start Num: 15

Candidate Starts for ANI8\_57:

(Start: 15 @37029 has 102 MA's), (35, 36897), (45, 36855), (48, 36846), (49, 36840), (55, 36774), (64, 36717), (65, 36711), (93, 36504),

Gene: AbbyPaige\_56 Start: 37263, Stop: 36577, Start Num: 15

Candidate Starts for AbbyPaige\_56:

(Start: 15 @37263 has 102 MA's), (42, 37092), (45, 37080), (47, 37074), (64, 36942), (73, 36873),

Gene: Abbysshoes\_52 Start: 36747, Stop: 35956, Start Num: 13

Candidate Starts for Abbysshoes\_52:

(Start: 13 @36747 has 143 MA's), (Start: 16 @36732 has 34 MA's), (Start: 24 @36693 has 1 MA's), (33, 36612), (59, 36447), (61, 36438), (62, 36432), (67, 36405), (72, 36351), (83, 36297), (92, 36228),

(108, 36081), (112, 36042), (114, 36027),

Gene: Abrogate\_480 Start: 36762, Stop: 35971, Start Num: 13

Candidate Starts for Abrogate\_480:

(Start: 13 @36762 has 143 MA's), (Start: 24 @36708 has 1 MA's), (33, 36627), (59, 36462), (61, 36453), (62, 36447), (67, 36420), (72, 36366), (83, 36312), (92, 36243), (95, 36189), (108, 36096), (112, 36057), (114, 36042),

Gene: Acme\_51 Start: 36648, Stop: 35833, Start Num: 13

Candidate Starts for Acme\_51:

(Start: 13 @36648 has 143 MA's), (Start: 16 @36633 has 34 MA's), (Start: 24 @36594 has 1 MA's), (33, 36513), (59, 36348), (61, 36339), (62, 36333), (69, 36255), (80, 36195), (84, 36153), (87, 36141), (92, 36105), (108, 35958), (112, 35919), (114, 35904),

Gene: Acolyte\_49 Start: 36109, Stop: 35363, Start Num: 15

Candidate Starts for Acolyte\_49:

(Start: 15 @36109 has 102 MA's), (41, 35944), (47, 35923), (64, 35791), (65, 35785), (93, 35563), (96, 35506), (104, 35467),

Gene: Adahisdi\_49 Start: 36498, Stop: 35707, Start Num: 13

Candidate Starts for Adahisdi\_49:

(Start: 13 @36498 has 143 MA's), (Start: 24 @36444 has 1 MA's), (33, 36363), (59, 36198), (61, 36189), (62, 36183), (72, 36102), (75, 36075), (79, 36072), (92, 35979), (95, 35925), (108, 35832), (114, 35778),

Gene: Adzzy\_55 Start: 35570, Stop: 34869, Start Num: 15

Candidate Starts for Adzzy\_55:

(3, 35903), (Start: 15 @35570 has 102 MA's), (41, 35408), (43, 35399), (63, 35261), (65, 35249), (73, 35180), (82, 35138), (83, 35129), (94, 35009), (97, 34967),

Gene: Aeneas\_51 Start: 36709, Stop: 35924, Start Num: 14

Candidate Starts for Aeneas\_51:

(Start: 14 @36709 has 46 MA's), (30, 36607), (34, 36574), (36, 36571), (45, 36529), (59, 36415), (61, 36406), (62, 36400), (67, 36373), (72, 36319), (75, 36292), (79, 36289), (92, 36196), (95, 36142), (108, 36049), (112, 36010), (114, 35995),

Gene: Agaliana\_45 Start: 33356, Stop: 32571, Start Num: 14

Candidate Starts for Agaliana\_45:

(Start: 14 @33356 has 46 MA's), (30, 33254), (34, 33221), (36, 33218), (45, 33176), (59, 33062), (61, 33053), (62, 33047), (67, 33020), (72, 32966), (83, 32912), (92, 32843), (95, 32789), (108, 32696), (112, 32657), (114, 32642),

Gene: Agape74\_56 Start: 37257, Stop: 36571, Start Num: 15

Candidate Starts for Agape74\_56:

(Start: 15 @37257 has 102 MA's), (23, 37206), (42, 37086), (45, 37074), (47, 37068), (64, 36936), (73, 36867), (98, 36651),

Gene: Ajay\_51 Start: 36816, Stop: 36025, Start Num: 13

Candidate Starts for Ajay\_51:

(Start: 13 @36816 has 143 MA's), (Start: 16 @36801 has 34 MA's), (Start: 24 @36762 has 1 MA's), (33, 36681), (59, 36516), (61, 36507), (62, 36501), (67, 36474), (72, 36420), (83, 36366), (92, 36297), (108, 36150), (112, 36111), (114, 36096),

Gene: Alsfro\_53 Start: 36822, Stop: 36031, Start Num: 13

Candidate Starts for Alsfro\_53:

(Start: 13 @36822 has 143 MA's), (Start: 24 @36768 has 1 MA's), (33, 36687), (59, 36522), (61, 36513), (62, 36507), (67, 36480), (72, 36426), (83, 36372), (92, 36303), (95, 36249), (108, 36156), (112, 36117), (114, 36102),

Gene: Altman\_52 Start: 37414, Stop: 36629, Start Num: 14

Candidate Starts for Altman\_52:

(Start: 14 @37414 has 46 MA's), (28, 37327), (30, 37312), (34, 37279), (36, 37276), (45, 37234), (59, 37120), (61, 37111), (62, 37105), (67, 37078), (72, 37024), (83, 36970), (92, 36901), (95, 36847), (108, 36754), (112, 36715), (114, 36700),

Gene: Alvin\_49 Start: 37098, Stop: 36283, Start Num: 13

Candidate Starts for Alvin\_49:

(Start: 13 @37098 has 143 MA's), (Start: 16 @37083 has 34 MA's), (Start: 24 @37044 has 1 MA's), (33, 36963), (59, 36798), (61, 36789), (62, 36783), (69, 36705), (80, 36645), (87, 36591), (92, 36555), (108, 36408), (112, 36369), (114, 36354),

Gene: Aneem\_54 Start: 36203, Stop: 35511, Start Num: 15

Candidate Starts for Aneem\_54:

(Start: 15 @36203 has 102 MA's), (19, 36194), (28, 36125), (40, 36053), (77, 35792), (93, 35666),

Gene: Anglerfish\_51 Start: 36970, Stop: 36179, Start Num: 13

Candidate Starts for Anglerfish\_51:

(Start: 13 @36970 has 143 MA's), (29, 36868), (30, 36862), (51, 36754), (61, 36661), (62, 36655), (84, 36499), (87, 36487), (92, 36451), (108, 36304), (112, 36265), (114, 36250),

Gene: AnnaL29\_56 Start: 37812, Stop: 37132, Start Num: 15

Candidate Starts for AnnaL29\_56:

(Start: 15 @37812 has 102 MA's), (19, 37794), (43, 37638), (55, 37551), (58, 37530), (65, 37488), (70, 37440), (79, 37389), (93, 37278),

Gene: Anon\_56 Start: 35373, Stop: 34744, Start Num: 22

Candidate Starts for Anon\_56:

(17, 35400), (Start: 22 @35373 has 1 MA's), (49, 35217), (58, 35130), (61, 35109), (80, 35001), (83, 34980), (85, 34956), (96, 34836), (113, 34755),

Gene: Anselm\_55 Start: 37167, Stop: 36496, Start Num: 15

Candidate Starts for Anselm\_55:

(10, 37329), (Start: 15 @37167 has 102 MA's), (35, 37035), (49, 36978), (53, 36957), (65, 36849), (79, 36750), (88, 36687), (93, 36639),

Gene: Applejack\_45 Start: 32978, Stop: 32193, Start Num: 14

Candidate Starts for Applejack\_45:

(Start: 14 @32978 has 46 MA's), (30, 32876), (34, 32843), (36, 32840), (45, 32798), (59, 32684), (61, 32675), (62, 32669), (67, 32642), (72, 32588), (75, 32561), (79, 32558), (92, 32465), (95, 32411), (108, 32318), (112, 32279), (114, 32264),

Gene: Arcanine\_50 Start: 36294, Stop: 35503, Start Num: 13

Candidate Starts for Arcanine\_50:

(Start: 13 @36294 has 143 MA's), (29, 36192), (30, 36186), (51, 36078), (61, 35985), (62, 35979), (72, 35898), (75, 35871), (79, 35868), (84, 35823), (87, 35811), (92, 35775), (108, 35628), (112, 35589), (114, 35574),

Gene: ArcherNM\_49 Start: 36822, Stop: 36085, Start Num: 15

Candidate Starts for ArcherNM\_49:

(Start: 15 @36822 has 102 MA's), (Start: 22 @36786 has 1 MA's), (25, 36756), (27, 36741), (32, 36699), (41, 36660), (65, 36501), (90, 36318), (91, 36315), (96, 36228), (103, 36192), (104, 36189), (116, 36093),

Gene: Arlo\_47 Start: 35951, Stop: 35160, Start Num: 13

Candidate Starts for Arlo\_47:

(Start: 13 @35951 has 143 MA's), (29, 35849), (30, 35843), (51, 35735), (61, 35642), (62, 35636), (84, 35480), (87, 35468), (92, 35432), (108, 35285), (112, 35246), (114, 35231),

Gene: Ashballer\_51 Start: 37447, Stop: 36656, Start Num: 13

Candidate Starts for Ashballer\_51:

(Start: 13 @37447 has 143 MA's), (Start: 16 @37432 has 34 MA's), (Start: 24 @37393 has 1 MA's), (33, 37312), (59, 37147), (61, 37138), (62, 37132), (67, 37105), (72, 37051), (83, 36997), (92, 36928), (95, 36874), (108, 36781), (112, 36742),

Gene: Atkinbua\_52 Start: 37074, Stop: 36283, Start Num: 13

Candidate Starts for Atkinbua\_52:

(Start: 13 @37074 has 143 MA's), (Start: 24 @37020 has 1 MA's), (26, 36993), (33, 36939), (59, 36774), (61, 36765), (62, 36759), (67, 36732), (72, 36678), (83, 36624), (92, 36555), (95, 36501), (108, 36408), (112, 36369), (114, 36354),

Gene: BK1\_45 Start: 35301, Stop: 34516, Start Num: 14

Candidate Starts for BK1\_45:

(Start: 14 @35301 has 46 MA's), (30, 35199), (34, 35166), (36, 35163), (45, 35121), (59, 35007), (61, 34998), (62, 34992), (67, 34965), (72, 34911), (92, 34788), (95, 34734), (108, 34641), (112, 34602), (114, 34587),

Gene: BPBiebs31\_50 Start: 36666, Stop: 35875, Start Num: 13

Candidate Starts for BPBiebs31\_50:

(Start: 13 @36666 has 143 MA's), (29, 36564), (30, 36558), (38, 36513), (51, 36450), (61, 36357), (80, 36237), (84, 36195), (87, 36183), (92, 36147), (108, 36000), (112, 35961),

Gene: Bachome\_55 Start: 36183, Stop: 35491, Start Num: 15

Candidate Starts for Bachome\_55:

(Start: 15 @36183 has 102 MA's), (19, 36174), (28, 36105), (40, 36033), (77, 35772), (93, 35646),

Gene: BaconJack\_52 Start: 37368, Stop: 36583, Start Num: 14

Candidate Starts for BaconJack\_52:

(Start: 14 @37368 has 46 MA's), (30, 37266), (34, 37233), (36, 37230), (45, 37188), (59, 37074), (61, 37065), (62, 37059), (67, 37032), (72, 36978), (92, 36855), (95, 36801), (108, 36708), (112, 36669), (114, 36654),

Gene: Bactobuster\_53 Start: 37762, Stop: 37037, Start Num: 16

Candidate Starts for Bactobuster\_53:

(6, 37996), (Start: 16 @37762 has 34 MA's), (28, 37684), (35, 37633), (42, 37603), (45, 37591), (50, 37573), (64, 37453), (65, 37447), (73, 37378), (79, 37348), (84, 37303), (89, 37267), (93, 37237), (96, 37180), (107, 37129),

Gene: Baehexic\_53 Start: 36934, Stop: 36239, Start Num: 15

Candidate Starts for Baehexic\_53:

(7, 37141), (Start: 15 @36934 has 102 MA's), (41, 36772), (54, 36712), (65, 36613), (73, 36544), (77, 36517), (82, 36499), (93, 36397),

Gene: Barriga\_50 Start: 36212, Stop: 35421, Start Num: 13

Candidate Starts for Barriga\_50:

(Start: 13 @36212 has 143 MA's), (Start: 24 @36158 has 1 MA's), (33, 36077), (59, 35912), (61, 35903), (62, 35897), (67, 35870), (72, 35816), (83, 35762), (92, 35693), (95, 35639), (108, 35546), (112, 35507), (114, 35492),

Gene: Beatrix\_49 Start: 37922, Stop: 37131, Start Num: 13

Candidate Starts for Beatrix\_49:

(Start: 13 @37922 has 143 MA's), (Start: 24 @37868 has 1 MA's), (33, 37787), (59, 37622), (61, 37613), (62, 37607), (67, 37580), (72, 37526), (83, 37472), (92, 37403), (95, 37349), (112, 37217), (114, 37202),

Gene: BeesKnees\_51 Start: 36776, Stop: 35991, Start Num: 14

Candidate Starts for BeesKnees\_51:

(Start: 12 @36782 has 1 MA's), (Start: 14 @36776 has 46 MA's), (30, 36674), (34, 36641), (36, 36638), (45, 36596), (59, 36482), (61, 36473), (62, 36467), (72, 36386), (75, 36359), (79, 36356), (92, 36263), (95, 36209), (108, 36116), (112, 36077), (114, 36062),

Gene: BengiVuitton\_56 Start: 37372, Stop: 36611, Start Num: 15

Candidate Starts for BengiVuitton\_56:

(10, 37537), (Start: 15 @37372 has 102 MA's), (Start: 24 @37318 has 1 MA's), (32, 37237), (64, 37051), (65, 37045), (104, 36739), (115, 36658), (117, 36619),

Gene: Benvolio\_51 Start: 36188, Stop: 35505, Start Num: 15

Candidate Starts for Benvolio\_51:

(10, 36353), (Start: 15 @36188 has 102 MA's), (35, 36056), (49, 35999), (65, 35870), (88, 35711), (93, 35663),

Gene: Bethlehem\_50 Start: 37439, Stop: 36648, Start Num: 13

Candidate Starts for Bethlehem\_50:

(Start: 13 @37439 has 143 MA's), (Start: 24 @37385 has 1 MA's), (33, 37304), (59, 37139), (61, 37130), (62, 37124), (67, 37097), (72, 37043), (83, 36989), (92, 36920), (108, 36773), (112, 36734), (114, 36719),

Gene: Bexan\_48 Start: 37600, Stop: 36809, Start Num: 13

Candidate Starts for Bexan\_48:

(Start: 13 @37600 has 143 MA's), (Start: 24 @37546 has 1 MA's), (33, 37465), (59, 37300), (61, 37291), (62, 37285), (67, 37258), (72, 37204), (83, 37150), (92, 37081), (95, 37027), (112, 36895), (114, 36880),

Gene: BiancaTri92\_54 Start: 37571, Stop: 36897, Start Num: 16

Candidate Starts for BiancaTri92\_54:

(10, 37739), (Start: 16 @37571 has 34 MA's), (23, 37535), (54, 37355), (58, 37298), (65, 37256), (66, 37247), (73, 37187), (79, 37157), (83, 37133), (88, 37094), (93, 37046),

Gene: Big3\_49 Start: 36839, Stop: 36048, Start Num: 13

Candidate Starts for Big3\_49:

(Start: 13 @36839 has 143 MA's), (Start: 16 @36824 has 34 MA's), (Start: 24 @36785 has 1 MA's), (33, 36704), (59, 36539), (61, 36530), (62, 36524), (67, 36497), (72, 36443), (83, 36389), (92, 36320), (108, 36173), (112, 36134), (114, 36119),



Gene: BigMau\_50 Start: 36205, Stop: 35390, Start Num: 13

Candidate Starts for BigMau\_50:

(Start: 13 @36205 has 143 MA's), (Start: 24 @36151 has 1 MA's), (33, 36070), (59, 35905), (61, 35896), (62, 35890), (69, 35812), (80, 35752), (84, 35710), (87, 35698), (92, 35662), (95, 35608), (108, 35515), (112, 35476), (114, 35461),

Gene: BigPaolini\_49 Start: 35364, Stop: 34573, Start Num: 13

Candidate Starts for BigPaolini\_49:

(Start: 13 @35364 has 143 MA's), (Start: 16 @35349 has 34 MA's), (Start: 24 @35310 has 1 MA's), (33, 35229), (59, 35064), (61, 35055), (62, 35049), (67, 35022), (72, 34968), (83, 34914), (92, 34845), (112, 34659), (114, 34644),

Gene: Bigfoot\_45 Start: 35585, Stop: 34794, Start Num: 13

Candidate Starts for Bigfoot\_45:

(Start: 13 @35585 has 143 MA's), (Start: 16 @35570 has 34 MA's), (Start: 24 @35531 has 1 MA's), (33, 35450), (59, 35285), (61, 35276), (62, 35270), (67, 35243), (72, 35189), (83, 35135), (92, 35066), (108, 34919), (112, 34880), (114, 34865),

Gene: BillKnuckles\_50 Start: 37476, Stop: 36700, Start Num: 16

Candidate Starts for BillKnuckles\_50:

(Start: 13 @37491 has 143 MA's), (Start: 16 @37476 has 34 MA's), (Start: 24 @37437 has 1 MA's), (33, 37356), (59, 37191), (61, 37182), (62, 37176), (67, 37149), (72, 37095), (83, 37041), (92, 36972), (95, 36918), (108, 36825), (112, 36786), (114, 36771),

Gene: Bircsak\_48 Start: 36932, Stop: 36147, Start Num: 14

Candidate Starts for Bircsak\_48:

(Start: 14 @36932 has 46 MA's), (30, 36830), (34, 36797), (36, 36794), (45, 36752), (59, 36638), (61, 36629), (62, 36623), (67, 36596), (72, 36542), (83, 36488), (92, 36419), (95, 36365), (108, 36272), (112, 36233), (114, 36218),

Gene: BluSpix\_49 Start: 33150, Stop: 32359, Start Num: 13

Candidate Starts for BluSpix\_49:

(Start: 13 @33150 has 143 MA's), (Start: 24 @33096 has 1 MA's), (33, 33015), (59, 32850), (61, 32841), (62, 32835), (72, 32754), (83, 32700), (92, 32631), (108, 32484), (112, 32445), (114, 32430),

Gene: Blue\_49 Start: 36851, Stop: 36060, Start Num: 13

Candidate Starts for Blue\_49:

(Start: 13 @36851 has 143 MA's), (Start: 24 @36797 has 1 MA's), (33, 36716), (59, 36551), (61, 36542), (62, 36536), (67, 36509), (72, 36455), (83, 36401), (92, 36332), (95, 36278), (108, 36185), (112, 36146), (114, 36131),

Gene: Bob3\_47 Start: 35555, Stop: 34740, Start Num: 13

Candidate Starts for Bob3\_47:

(Start: 13 @35555 has 143 MA's), (Start: 24 @35501 has 1 MA's), (33, 35420), (59, 35255), (61, 35246), (62, 35240), (69, 35162), (80, 35102), (84, 35060), (87, 35048), (92, 35012), (95, 34958), (108, 34865), (112, 34826), (114, 34811),

Gene: BobSwaget\_50 Start: 35667, Stop: 34924, Start Num: 16

Candidate Starts for BobSwaget\_50:

(Start: 15 @35670 has 102 MA's), (Start: 16 @35667 has 34 MA's), (26, 35601), (51, 35466), (55, 35415), (61, 35373), (71, 35295), (93, 35148), (96, 35091), (106, 35040), (113, 35010), (115, 34971), (117, 34932),

Gene: Bones\_50 Start: 37251, Stop: 36436, Start Num: 13

Candidate Starts for Bones\_50:

(Start: 13 @37251 has 143 MA's), (Start: 24 @37197 has 1 MA's), (33, 37116), (59, 36951), (61, 36942), (62, 36936), (69, 36858), (80, 36798), (84, 36756), (87, 36744), (92, 36708), (95, 36654), (108, 36561), (112, 36522), (114, 36507),

Gene: Bowtie\_54 Start: 36210, Stop: 35518, Start Num: 15

Candidate Starts for Bowtie\_54:

(Start: 15 @36210 has 102 MA's), (19, 36201), (28, 36132), (40, 36060), (77, 35799), (93, 35673),

Gene: Briton15\_52 Start: 37002, Stop: 36217, Start Num: 14

Candidate Starts for Briton15\_52:

(Start: 12 @37008 has 1 MA's), (Start: 14 @37002 has 46 MA's), (28, 36915), (30, 36900), (34, 36867), (36, 36864), (45, 36822), (59, 36708), (61, 36699), (62, 36693), (67, 36666), (72, 36612), (83, 36558), (92, 36489), (95, 36435), (108, 36342), (112, 36303), (114, 36288),

Gene: Bruns\_48 Start: 36137, Stop: 35352, Start Num: 14

Candidate Starts for Bruns\_48:

(Start: 14 @36137 has 46 MA's), (28, 36050), (30, 36035), (34, 36002), (36, 35999), (45, 35957), (59, 35843), (61, 35834), (62, 35828), (67, 35801), (72, 35747), (83, 35693), (92, 35624), (95, 35570), (108, 35477), (112, 35438), (114, 35423),

Gene: Bud\_53 Start: 35757, Stop: 35065, Start Num: 15

Candidate Starts for Bud\_53:

(Start: 15 @35757 has 102 MA's), (19, 35748), (28, 35679), (40, 35607), (77, 35346), (93, 35220),

Gene: Buggy\_56 Start: 37314, Stop: 36628, Start Num: 15

Candidate Starts for Buggy\_56:

(1, 37815), (10, 37476), (Start: 15 @37314 has 102 MA's), (23, 37263), (42, 37143), (45, 37131), (47, 37125), (64, 36993), (73, 36924),

Gene: Burton\_49 Start: 36103, Stop: 35288, Start Num: 13

Candidate Starts for Burton\_49:

(Start: 13 @36103 has 143 MA's), (Start: 24 @36049 has 1 MA's), (33, 35968), (61, 35794), (62, 35788), (69, 35710), (80, 35650), (84, 35608), (87, 35596), (92, 35560), (108, 35413), (112, 35374), (114, 35359),

Gene: Buttons\_48 Start: 35073, Stop: 34282, Start Num: 13

Candidate Starts for Buttons\_48:

(Start: 13 @35073 has 143 MA's), (Start: 16 @35058 has 34 MA's), (Start: 24 @35019 has 1 MA's), (33, 34938), (59, 34773), (61, 34764), (62, 34758), (67, 34731), (72, 34677), (83, 34623), (92, 34554), (108, 34407), (112, 34368), (114, 34353),

Gene: Bxb1\_45 Start: 35882, Stop: 35097, Start Num: 14

Candidate Starts for Bxb1\_45:

(Start: 14 @35882 has 46 MA's), (30, 35780), (34, 35747), (36, 35744), (45, 35702), (59, 35588), (61, 35579), (62, 35573), (67, 35546), (72, 35492), (83, 35438), (92, 35369), (95, 35315), (108, 35222), (112, 35183), (114, 35168),

Gene: C3\_52 Start: 37029, Stop: 36343, Start Num: 15

Candidate Starts for C3\_52:

(Start: 15 @37029 has 102 MA's), (35, 36897), (45, 36855), (48, 36846), (49, 36840), (55, 36774), (64, 36717), (65, 36711), (93, 36504),

Gene: CRB1\_58 Start: 37747, Stop: 36983, Start Num: 15

Candidate Starts for CRB1\_58:

(Start: 15 @37747 has 102 MA's), (Start: 24 @37693 has 1 MA's), (32, 37612), (64, 37426), (65, 37420), (86, 37279), (104, 37114), (115, 37033), (117, 36994),

Gene: CactusRose\_47 Start: 36080, Stop: 35289, Start Num: 13

Candidate Starts for CactusRose\_47:

(Start: 13 @36080 has 143 MA's), (Start: 24 @36026 has 1 MA's), (33, 35945), (59, 35780), (61, 35771), (62, 35765), (67, 35738), (72, 35684), (83, 35630), (92, 35561), (108, 35414), (112, 35375), (114, 35360),

Gene: Caraxes\_54 Start: 35279, Stop: 34578, Start Num: 15

Candidate Starts for Caraxes\_54:

(3, 35612), (Start: 15 @35279 has 102 MA's), (19, 35261), (23, 35234), (25, 35213), (41, 35117), (43, 35108), (57, 35006), (65, 34958), (80, 34859), (97, 34676),

Gene: Carlyle\_48 Start: 34577, Stop: 33786, Start Num: 13

Candidate Starts for Carlyle\_48:

(Start: 13 @34577 has 143 MA's), (Start: 24 @34523 has 1 MA's), (33, 34442), (59, 34277), (61, 34268), (62, 34262), (67, 34235), (72, 34181), (83, 34127), (92, 34058), (95, 34004), (108, 33911), (112, 33872),

Gene: Centaur\_55 Start: 37151, Stop: 36456, Start Num: 15

Candidate Starts for Centaur\_55:

(7, 37358), (Start: 15 @37151 has 102 MA's), (41, 36989), (54, 36929), (65, 36830), (73, 36761), (77, 36734), (82, 36716), (93, 36614),

Gene: Chanagan\_46 Start: 35380, Stop: 34589, Start Num: 13

Candidate Starts for Chanagan\_46:

(Start: 13 @35380 has 143 MA's), (Start: 16 @35365 has 34 MA's), (Start: 24 @35326 has 1 MA's), (33, 35245), (59, 35080), (61, 35071), (62, 35065), (72, 34984), (83, 34930), (92, 34861), (95, 34807), (112, 34675), (114, 34660),

Gene: Changeling\_53 Start: 37417, Stop: 36680, Start Num: 15

Candidate Starts for Changeling\_53:

(Start: 15 @37417 has 102 MA's), (Start: 22 @37381 has 1 MA's), (25, 37351), (27, 37336), (32, 37294), (41, 37255), (65, 37096), (90, 36913), (91, 36910), (96, 36823), (103, 36787), (104, 36784), (116, 36688),

Gene: Chargerpower\_52 Start: 35532, Stop: 34852, Start Num: 16

Candidate Starts for Chargerpower\_52:

(Start: 16 @35532 has 34 MA's), (31, 35430), (43, 35367), (49, 35346), (66, 35208), (76, 35121), (89, 35037), (93, 35007), (111, 34881),

Gene: Che12\_55 Start: 35711, Stop: 35010, Start Num: 15

Candidate Starts for Che12\_55:

(Start: 15 @35711 has 102 MA's), (23, 35666), (41, 35549), (43, 35540), (50, 35516), (57, 35438), (63, 35402), (65, 35390), (73, 35321), (82, 35279), (83, 35270), (94, 35150), (97, 35108),

Gene: ChipMunk\_56 Start: 38514, Stop: 37846, Start Num: 16

Candidate Starts for ChipMunk\_56:

(1, 39018), (Start: 16 @38514 has 34 MA's), (43, 38349), (48, 38334), (49, 38328), (54, 38298), (73, 38130), (77, 38103), (93, 37989),

Gene: Ciao\_49 Start: 36531, Stop: 35740, Start Num: 13

Candidate Starts for Ciao\_49:

(Start: 13 @36531 has 143 MA's), (Start: 16 @36516 has 34 MA's), (Start: 24 @36477 has 1 MA's), (33, 36396), (59, 36231), (61, 36222), (62, 36216), (72, 36135), (83, 36081), (92, 36012), (108, 35865), (112, 35826), (114, 35811),

Gene: Colin\_54 Start: 37138, Stop: 36467, Start Num: 16

Candidate Starts for Colin\_54:

(Start: 16 @37138 has 34 MA's), (54, 36922), (56, 36874), (79, 36724), (83, 36700), (89, 36643), (93, 36613), (101, 36529),

Gene: Conceptll\_51 Start: 37247, Stop: 36432, Start Num: 13

Candidate Starts for Conceptll\_51:

(Start: 13 @37247 has 143 MA's), (Start: 16 @37232 has 34 MA's), (Start: 24 @37193 has 1 MA's), (33, 37112), (59, 36947), (61, 36938), (62, 36932), (69, 36854), (80, 36794), (84, 36752), (87, 36740), (92, 36704), (108, 36557), (112, 36518), (114, 36503),

Gene: Corvo\_50 Start: 37083, Stop: 36292, Start Num: 13

Candidate Starts for Corvo\_50:

(Start: 13 @37083 has 143 MA's), (Start: 24 @37029 has 1 MA's), (33, 36948), (59, 36783), (61, 36774), (62, 36768), (67, 36741), (72, 36687), (83, 36633), (92, 36564), (95, 36510), (112, 36378), (114, 36363),

Gene: Crispicous1\_47 Start: 35700, Stop: 34915, Start Num: 14

Candidate Starts for Crispicous1\_47:

(Start: 14 @35700 has 46 MA's), (28, 35613), (30, 35598), (34, 35565), (36, 35562), (45, 35520), (59, 35406), (61, 35397), (62, 35391), (67, 35364), (72, 35310), (83, 35256), (92, 35187), (95, 35133), (108, 35040), (112, 35001), (114, 34986),

Gene: Crucio\_54 Start: 36763, Stop: 36071, Start Num: 15

Candidate Starts for Crucio\_54:

(1, 37264), (Start: 15 @36763 has 102 MA's), (23, 36715), (41, 36598), (73, 36370), (78, 36340), (82, 36325), (83, 36316), (94, 36196),

Gene: Cueyllyss\_51 Start: 38384, Stop: 37569, Start Num: 13

Candidate Starts for Cueyllyss\_51:

(Start: 13 @38384 has 143 MA's), (Start: 24 @38330 has 1 MA's), (33, 38249), (59, 38084), (61, 38075), (62, 38069), (69, 37991), (80, 37931), (84, 37889), (87, 37877), (92, 37841), (95, 37787), (108, 37694), (112, 37655), (114, 37640),

Gene: D29\_53 Start: 36632, Stop: 35925, Start Num: 15

Candidate Starts for D29\_53:

(Start: 15 @36632 has 102 MA's), (20, 36605), (23, 36584), (41, 36467), (65, 36308), (79, 36209), (82, 36194), (94, 36065), (98, 36020),

Gene: D32\_55 Start: 36632, Stop: 35925, Start Num: 15

Candidate Starts for D32\_55:

(Start: 15 @36632 has 102 MA's), (20, 36605), (23, 36584), (41, 36467), (65, 36308), (79, 36209), (82, 36194), (94, 36065), (98, 36020),

Gene: DBQu4n\_56 Start: 36613, Stop: 35906, Start Num: 15

Candidate Starts for DBQu4n\_56:

(Start: 15 @36613 has 102 MA's), (20, 36586), (23, 36565), (41, 36448), (65, 36289), (79, 36190), (82, 36175), (94, 36046), (98, 36001),

Gene: DD5\_48 Start: 37089, Stop: 36298, Start Num: 12

Candidate Starts for DD5\_48:

(Start: 12 @37089 has 1 MA's), (Start: 14 @37083 has 46 MA's), (30, 36981), (34, 36948), (36, 36945), (45, 36903), (59, 36789), (61, 36780), (62, 36774), (72, 36693), (75, 36666), (79, 36663), (92, 36570), (95, 36516), (108, 36423), (112, 36384), (114, 36369),

Gene: Dalmatian\_55 Start: 37140, Stop: 36469, Start Num: 15

Candidate Starts for Dalmatian\_55:

(10, 37302), (Start: 15 @37140 has 102 MA's), (35, 37008), (49, 36951), (53, 36930), (65, 36822), (79, 36723), (88, 36660), (93, 36612),

Gene: DARTHPhader\_50 Start: 37443, Stop: 36769, Start Num: 16

Candidate Starts for DARTHPhader\_50:

(1, 37953), (3, 37785), (Start: 16 @37443 has 34 MA's), (44, 37272), (54, 37227), (63, 37140), (65, 37128), (72, 37059), (76, 37029), (93, 36915), (101, 36831), (111, 36789),

Gene: Deloris\_55 Start: 37041, Stop: 36280, Start Num: 15

Candidate Starts for Deloris\_55:

(10, 37206), (Start: 15 @37041 has 102 MA's), (Start: 24 @36987 has 1 MA's), (32, 36906), (64, 36720), (65, 36714), (104, 36408), (115, 36327), (117, 36288),

Gene: Dexes\_50 Start: 37436, Stop: 36645, Start Num: 13

Candidate Starts for Dexes\_50:

(Start: 13 @37436 has 143 MA's), (Start: 16 @37421 has 34 MA's), (Start: 24 @37382 has 1 MA's), (33, 37301), (59, 37136), (61, 37127), (62, 37121), (72, 37040), (75, 37013), (79, 37010), (92, 36917), (95, 36863), (112, 36731), (114, 36716),

Gene: Dignity\_56 Start: 37337, Stop: 36651, Start Num: 15

Candidate Starts for Dignity\_56:

(1, 37838), (10, 37499), (Start: 15 @37337 has 102 MA's), (42, 37166), (45, 37154), (47, 37148), (64, 37016), (73, 36947),

Gene: Doom\_49 Start: 36867, Stop: 36076, Start Num: 13

Candidate Starts for Doom\_49:

(Start: 13 @36867 has 143 MA's), (Start: 24 @36813 has 1 MA's), (33, 36732), (59, 36567), (61, 36558), (62, 36552), (67, 36525), (72, 36471), (83, 36417), (92, 36348), (112, 36162), (114, 36147),

Gene: DrFeelGood\_47 Start: 36551, Stop: 35760, Start Num: 13

Candidate Starts for DrFeelGood\_47:

(Start: 13 @36551 has 143 MA's), (Start: 24 @36497 has 1 MA's), (33, 36416), (59, 36251), (61, 36242), (62, 36236), (72, 36155), (83, 36101), (92, 36032), (108, 35885), (112, 35846), (114, 35831),

Gene: Drake55\_56 Start: 37230, Stop: 36535, Start Num: 15

Candidate Starts for Drake55\_56:

(6, 37461), (7, 37437), (Start: 15 @37230 has 102 MA's), (41, 37068), (54, 37008), (65, 36909), (73, 36840), (77, 36813), (82, 36795), (93, 36693),

Gene: DreamCatcher\_53 Start: 37957, Stop: 37166, Start Num: 13

Candidate Starts for DreamCatcher\_53:

(Start: 13 @37957 has 143 MA's), (29, 37855), (30, 37849), (51, 37741), (61, 37648), (80, 37528), (84, 37486), (87, 37474), (92, 37438), (95, 37384), (108, 37291), (112, 37252), (114, 37237),

Gene: Dreamboat\_51 Start: 36307, Stop: 35516, Start Num: 13

Candidate Starts for Dreamboat\_51:

(Start: 13 @36307 has 143 MA's), (Start: 24 @36253 has 1 MA's), (33, 36172), (59, 36007), (61, 35998), (62, 35992), (67, 35965), (72, 35911), (83, 35857), (92, 35788), (108, 35641), (112, 35602), (114, 35587),

Gene: DudeLittle\_53 Start: 36906, Stop: 36235, Start Num: 15

Candidate Starts for DudeLittle\_53:

(10, 37068), (Start: 15 @36906 has 102 MA's), (35, 36774), (49, 36717), (53, 36696), (65, 36588), (79, 36489), (88, 36426), (93, 36378),

Gene: Dulcie\_50 Start: 36755, Stop: 35964, Start Num: 13

Candidate Starts for Dulcie\_50:

(Start: 13 @36755 has 143 MA's), (Start: 16 @36740 has 34 MA's), (Start: 24 @36701 has 1 MA's), (33, 36620), (59, 36455), (61, 36446), (62, 36440), (67, 36413), (72, 36359), (83, 36305), (92, 36236), (95, 36182), (112, 36050),

Gene: Duplo\_56 Start: 36669, Stop: 35962, Start Num: 15

Candidate Starts for Duplo\_56:

(Start: 15 @36669 has 102 MA's), (20, 36642), (23, 36621), (41, 36504), (65, 36345), (79, 36246), (82, 36231), (94, 36102), (98, 36057),

Gene: Dussy\_51 Start: 36767, Stop: 35976, Start Num: 13

Candidate Starts for Dussy\_51:

(Start: 13 @36767 has 143 MA's), (Start: 16 @36752 has 34 MA's), (Start: 24 @36713 has 1 MA's), (33, 36632), (59, 36467), (61, 36458), (62, 36452), (67, 36425), (72, 36371), (83, 36317), (92, 36248), (108, 36101), (112, 36062), (114, 36047),

Gene: Dynamix\_51 Start: 36777, Stop: 35962, Start Num: 13

Candidate Starts for Dynamix\_51:

(Start: 13 @36777 has 143 MA's), (Start: 24 @36723 has 1 MA's), (33, 36642), (59, 36477), (61, 36468), (62, 36462), (69, 36384), (80, 36324), (84, 36282), (87, 36270), (92, 36234), (95, 36180), (112, 36048), (114, 36033),

Gene: EZMoney23\_52 Start: 36664, Stop: 35993, Start Num: 16

Candidate Starts for EZMoney23\_52:

(Start: 16 @36664 has 34 MA's), (43, 36499), (49, 36478), (51, 36463), (65, 36349), (66, 36340), (77, 36253), (93, 36139), (101, 36055),

Gene: EagleEye\_56 Start: 36467, Stop: 35742, Start Num: 16

Candidate Starts for EagleEye\_56:

(3, 36842), (Start: 16 @36467 has 34 MA's), (23, 36431), (27, 36392), (37, 36332), (41, 36311), (45, 36296), (49, 36281), (51, 36266), (52, 36263), (56, 36203), (64, 36158), (65, 36152), (66, 36143), (81, 36050), (96, 35888), (100, 35873),

Gene: Ebony\_53 Start: 35774, Stop: 35082, Start Num: 15

Candidate Starts for Ebony\_53:

(Start: 15 @35774 has 102 MA's), (19, 35765), (28, 35696), (77, 35363), (93, 35237),

Gene: Echild\_54 Start: 36212, Stop: 35529, Start Num: 15

Candidate Starts for Echild\_54:

(10, 36377), (Start: 15 @36212 has 102 MA's), (35, 36080), (49, 36023), (65, 35894), (88, 35735), (93, 35687),

Gene: Edtherson\_49 Start: 37031, Stop: 36240, Start Num: 13

Candidate Starts for Edtherson\_49:

(Start: 13 @37031 has 143 MA's), (Start: 16 @37016 has 34 MA's), (33, 36896), (59, 36731), (61, 36722), (62, 36716), (72, 36635), (83, 36581), (92, 36512), (108, 36365), (112, 36326), (114, 36311),

Gene: Equemioh13\_55 Start: 37053, Stop: 36358, Start Num: 15

Candidate Starts for Equemioh13\_55:

(7, 37260), (Start: 15 @37053 has 102 MA's), (41, 36891), (54, 36831), (65, 36732), (73, 36663), (77, 36636), (82, 36618), (93, 36516),

Gene: Espresso\_49 Start: 36636, Stop: 35845, Start Num: 13

Candidate Starts for Espresso\_49:

(Start: 13 @36636 has 143 MA's), (Start: 24 @36582 has 1 MA's), (33, 36501), (59, 36336), (61, 36327), (62, 36321), (67, 36294), (72, 36240), (83, 36186), (92, 36117), (95, 36063), (108, 35970), (112, 35931), (114, 35916),

Gene: Et2Brutus\_52 Start: 35737, Stop: 35045, Start Num: 15

Candidate Starts for Et2Brutus\_52:

(Start: 15 @35737 has 102 MA's), (19, 35728), (28, 35659), (40, 35587), (77, 35326), (93, 35200),

Gene: Euphoria\_47 Start: 35887, Stop: 35096, Start Num: 13

Candidate Starts for Euphoria\_47:

(Start: 13 @35887 has 143 MA's), (Start: 16 @35872 has 34 MA's), (Start: 24 @35833 has 1 MA's), (33, 35752), (59, 35587), (61, 35578), (62, 35572), (67, 35545), (72, 35491), (83, 35437), (92, 35368), (102, 35248), (108, 35221), (112, 35182),

Gene: EvilGenius\_56 Start: 38515, Stop: 37847, Start Num: 16

Candidate Starts for EvilGenius\_56:

(1, 39019), (Start: 16 @38515 has 34 MA's), (43, 38350), (48, 38335), (49, 38329), (54, 38299), (73, 38131), (77, 38104), (93, 37990),

Gene: Eyeball\_51 Start: 37131, Stop: 36346, Start Num: 14

Candidate Starts for Eyeball\_51:

(Start: 14 @37131 has 46 MA's), (30, 37029), (34, 36996), (36, 36993), (45, 36951), (59, 36837), (61, 36828), (62, 36822), (67, 36795), (72, 36741), (83, 36687), (92, 36618), (95, 36564), (108, 36471), (112, 36432), (114, 36417),

Gene: Fajezeel\_51 Start: 36880, Stop: 36089, Start Num: 13

Candidate Starts for Fajezeel\_51:

(Start: 13 @36880 has 143 MA's), (Start: 16 @36865 has 34 MA's), (Start: 24 @36826 has 1 MA's), (33, 36745), (59, 36580), (61, 36571), (62, 36565), (72, 36484), (83, 36430), (92, 36361), (108, 36214), (112, 36175), (114, 36160),

Gene: Fameo\_54 Start: 37094, Stop: 36408, Start Num: 15

Candidate Starts for Fameo\_54:

(10, 37256), (Start: 15 @37094 has 102 MA's), (21, 37055), (42, 36923), (45, 36911), (47, 36905), (64, 36773), (73, 36704), (94, 36533), (97, 36491), (98, 36488), (101, 36467),

Gene: Fascinus\_45 Start: 35806, Stop: 34991, Start Num: 13

Candidate Starts for Fascinus\_45:

(Start: 13 @35806 has 143 MA's), (Start: 16 @35791 has 34 MA's), (Start: 24 @35752 has 1 MA's), (33, 35671), (59, 35506), (61, 35497), (62, 35491), (69, 35413), (80, 35353), (84, 35311), (87, 35299), (92, 35263), (95, 35209), (108, 35116), (112, 35077), (114, 35062),

Gene: Fenn\_52 Start: 38708, Stop: 37917, Start Num: 13

Candidate Starts for Fenn\_52:

(Start: 13 @38708 has 143 MA's), (Start: 24 @38654 has 1 MA's), (33, 38573), (59, 38408), (61, 38399), (62, 38393), (67, 38366), (72, 38312), (83, 38258), (92, 38189), (108, 38042), (112, 38003), (114, 37988),

Gene: Fibonacci\_53 Start: 35743, Stop: 35051, Start Num: 15

Candidate Starts for Fibonacci\_53:

(Start: 15 @35743 has 102 MA's), (19, 35734), (28, 35665), (40, 35593), (77, 35332), (93, 35206),

Gene: FiringLine\_54 Start: 36744, Stop: 36052, Start Num: 15

Candidate Starts for FiringLine\_54:

(Start: 15 @36744 has 102 MA's), (23, 36696), (41, 36579), (73, 36351), (78, 36321), (82, 36306), (83, 36297), (94, 36177),

Gene: First\_0056 Start: 37304, Stop: 36543, Start Num: 15

Candidate Starts for First\_0056:

(10, 37469), (Start: 15 @37304 has 102 MA's), (Start: 24 @37250 has 1 MA's), (32, 37169), (64, 36983), (65, 36977), (66, 36968), (104, 36671), (115, 36590), (117, 36551),

Gene: Flare16\_54 Start: 36812, Stop: 36117, Start Num: 15

Candidate Starts for Flare16\_54:

(6, 37043), (7, 37019), (8, 37004), (Start: 15 @36812 has 102 MA's), (41, 36650), (54, 36590), (65, 36491), (73, 36422), (77, 36395), (82, 36377), (93, 36275), (101, 36191),

Gene: Flaverint\_54 Start: 36201, Stop: 35509, Start Num: 15

Candidate Starts for Flaverint\_54:

(Start: 15 @36201 has 102 MA's), (19, 36192), (28, 36123), (40, 36051), (77, 35790), (93, 35664),

Gene: Forsytheast\_49 Start: 36355, Stop: 35570, Start Num: 14

Candidate Starts for Forsytheast\_49:

(Start: 14 @36355 has 46 MA's), (28, 36268), (30, 36253), (34, 36220), (36, 36217), (45, 36175), (59, 36061), (61, 36052), (62, 36046), (67, 36019), (72, 35965), (83, 35911), (92, 35842), (95, 35788), (108, 35695), (112, 35656), (114, 35641),

Gene: Francis47\_48 Start: 37200, Stop: 36415, Start Num: 14

Candidate Starts for Francis47\_48:

(Start: 14 @37200 has 46 MA's), (30, 37098), (34, 37065), (36, 37062), (45, 37020), (59, 36906), (61, 36897), (62, 36891), (67, 36864), (72, 36810), (83, 36756), (92, 36687), (95, 36633), (108, 36540), (112, 36501), (114, 36486),

Gene: Froghopper\_47 Start: 35876, Stop: 35085, Start Num: 13

Candidate Starts for Froghopper\_47:

(Start: 13 @35876 has 143 MA's), (Start: 16 @35861 has 34 MA's), (Start: 24 @35822 has 1 MA's), (33, 35741), (59, 35576), (61, 35567), (62, 35561), (67, 35534), (72, 35480), (83, 35426), (92, 35357), (112, 35171), (114, 35156),



Gene: Fushigi\_48 Start: 34837, Stop: 34046, Start Num: 13

Candidate Starts for Fushigi\_48:

(Start: 13 @34837 has 143 MA's), (Start: 16 @34822 has 34 MA's), (Start: 24 @34783 has 1 MA's), (33, 34702), (59, 34537), (61, 34528), (62, 34522), (67, 34495), (72, 34441), (83, 34387), (92, 34318), (102, 34198), (108, 34171), (112, 34132), (114, 34117),

Gene: GageAP\_50 Start: 36676, Stop: 35885, Start Num: 13

Candidate Starts for GageAP\_50:

(Start: 13 @36676 has 143 MA's), (Start: 16 @36661 has 34 MA's), (Start: 24 @36622 has 1 MA's), (33, 36541), (59, 36376), (61, 36367), (62, 36361), (67, 36334), (72, 36280), (75, 36253), (79, 36250), (92, 36157), (95, 36103), (108, 36010), (112, 35971), (114, 35956),

Gene: Gail\_58 Start: 37956, Stop: 37207, Start Num: 16

Candidate Starts for Gail\_58:

(Start: 16 @37956 has 34 MA's), (28, 37878), (35, 37827), (41, 37800), (49, 37770), (51, 37755), (64, 37647), (65, 37641), (72, 37575), (73, 37572), (93, 37434), (96, 37377),

Gene: Gandalf20\_52 Start: 37729, Stop: 36938, Start Num: 13

Candidate Starts for Gandalf20\_52:

(Start: 13 @37729 has 143 MA's), (Start: 24 @37675 has 1 MA's), (33, 37594), (59, 37429), (61, 37420), (62, 37414), (67, 37387), (72, 37333), (83, 37279), (92, 37210), (95, 37156), (108, 37063), (112, 37024), (114, 37009),

Gene: Georgie2\_55 Start: 36789, Stop: 36097, Start Num: 15

Candidate Starts for Georgie2\_55:

(1, 37290), (Start: 15 @36789 has 102 MA's), (23, 36741), (41, 36624), (73, 36396), (78, 36366), (82, 36351), (83, 36342), (94, 36222),

Gene: Gilberta\_54 Start: 36194, Stop: 35502, Start Num: 15

Candidate Starts for Gilberta\_54:

(Start: 15 @36194 has 102 MA's), (19, 36185), (28, 36116), (40, 36044), (77, 35783), (93, 35657),

Gene: Gompeii16\_48 Start: 36933, Stop: 36148, Start Num: 14

Candidate Starts for Gompeii16\_48:

(Start: 14 @36933 has 46 MA's), (30, 36831), (34, 36798), (36, 36795), (45, 36753), (59, 36639), (61, 36630), (62, 36624), (67, 36597), (72, 36543), (83, 36489), (92, 36420), (95, 36366), (108, 36273), (112, 36234), (114, 36219),

Gene: Graduation\_53 Start: 38456, Stop: 37665, Start Num: 13

Candidate Starts for Graduation\_53:

(Start: 13 @38456 has 143 MA's), (Start: 24 @38402 has 1 MA's), (33, 38321), (59, 38156), (61, 38147), (62, 38141), (67, 38114), (72, 38060), (83, 38006), (92, 37937), (95, 37883), (108, 37790), (112, 37751), (114, 37736),

Gene: GrecoEtereo\_50 Start: 36688, Stop: 35897, Start Num: 13

Candidate Starts for GrecoEtereo\_50:

(Start: 13 @36688 has 143 MA's), (29, 36586), (30, 36580), (51, 36472), (61, 36379), (62, 36373), (72, 36292), (75, 36265), (79, 36262), (84, 36217), (87, 36205), (92, 36169), (108, 36022), (112, 35983), (114, 35968),

Gene: Greg\_51 Start: 36880, Stop: 36089, Start Num: 13

Candidate Starts for Greg\_51:

(Start: 13 @36880 has 143 MA's), (Start: 16 @36865 has 34 MA's), (Start: 24 @36826 has 1 MA's), (33, 36745), (59, 36580), (61, 36571), (62, 36565), (72, 36484), (83, 36430), (92, 36361), (108, 36214), (112, 36175), (114, 36160),

Gene: Gwendoluna\_54 Start: 38892, Stop: 38101, Start Num: 13

Candidate Starts for Gwendoluna\_54:

(Start: 13 @38892 has 143 MA's), (Start: 24 @38838 has 1 MA's), (33, 38757), (51, 38676), (59, 38592), (61, 38583), (62, 38577), (67, 38550), (72, 38496), (83, 38442), (92, 38373), (108, 38226), (112, 38187), (114, 38172),

Gene: Gyzlar\_45 Start: 34602, Stop: 33811, Start Num: 13

Candidate Starts for Gyzlar\_45:

(Start: 13 @34602 has 143 MA's), (Start: 16 @34587 has 34 MA's), (Start: 24 @34548 has 1 MA's), (33, 34467), (59, 34302), (61, 34293), (62, 34287), (67, 34260), (72, 34206), (83, 34152), (92, 34083), (108, 33936), (112, 33897), (114, 33882),

Gene: HanShotFirst\_49 Start: 36074, Stop: 35289, Start Num: 14

Candidate Starts for HanShotFirst\_49:

(Start: 12 @36080 has 1 MA's), (Start: 14 @36074 has 46 MA's), (28, 35987), (30, 35972), (34, 35939), (36, 35936), (45, 35894), (59, 35780), (61, 35771), (62, 35765), (67, 35738), (72, 35684), (83, 35630), (92, 35561), (95, 35507), (108, 35414), (112, 35375), (114, 35360),

Gene: HarryHoudini\_55 Start: 37239, Stop: 36544, Start Num: 15

Candidate Starts for HarryHoudini\_55:

(6, 37470), (7, 37446), (Start: 15 @37239 has 102 MA's), (41, 37077), (54, 37017), (65, 36918), (73, 36849), (77, 36822), (82, 36804), (93, 36702),

Gene: HarryOW\_48 Start: 35860, Stop: 35069, Start Num: 13

Candidate Starts for HarryOW\_48:

(Start: 13 @35860 has 143 MA's), (29, 35758), (30, 35752), (51, 35644), (61, 35551), (62, 35545), (72, 35464), (75, 35437), (79, 35434), (84, 35389), (87, 35377), (92, 35341), (108, 35194), (112, 35155), (114, 35140),

Gene: Heffalump\_53 Start: 37562, Stop: 36876, Start Num: 15

Candidate Starts for Heffalump\_53:

(10, 37724), (Start: 15 @37562 has 102 MA's), (21, 37523), (42, 37391), (45, 37379), (47, 37373), (64, 37241), (73, 37172), (94, 37001), (97, 36959), (98, 36956),

Gene: Hermia\_49 Start: 37307, Stop: 36516, Start Num: 13

Candidate Starts for Hermia\_49:

(Start: 13 @37307 has 143 MA's), (29, 37205), (30, 37199), (51, 37091), (61, 36998), (62, 36992), (72, 36911), (75, 36884), (79, 36881), (84, 36836), (87, 36824), (92, 36788), (108, 36641), (112, 36602), (114, 36587),

Gene: HermioneGrange\_49 Start: 36699, Stop: 35884, Start Num: 13

Candidate Starts for HermioneGrange\_49:

(Start: 13 @36699 has 143 MA's), (Start: 24 @36645 has 1 MA's), (33, 36564), (59, 36399), (61, 36390), (62, 36384), (69, 36306), (80, 36246), (84, 36204), (87, 36192), (92, 36156), (95, 36102), (108, 36009), (112, 35970), (114, 35955),

Gene: Homines\_42 Start: 32873, Stop: 32088, Start Num: 14

Candidate Starts for Homines\_42:

(Start: 14 @32873 has 46 MA's), (30, 32771), (34, 32738), (36, 32735), (45, 32693), (59, 32579), (61, 32570), (62, 32564), (67, 32537), (72, 32483), (83, 32429), (92, 32360), (95, 32306), (108, 32213), (112, 32174), (114, 32159),

Gene: Hope4ever\_52 Start: 37516, Stop: 36701, Start Num: 13

Candidate Starts for Hope4ever\_52:

(Start: 13 @37516 has 143 MA's), (Start: 24 @37462 has 1 MA's), (33, 37381), (59, 37216), (61, 37207), (62, 37201), (69, 37123), (80, 37063), (84, 37021), (87, 37009), (92, 36973), (95, 36919), (108, 36826), (112, 36787),

Gene: Hutc2\_53 Start: 35743, Stop: 35051, Start Num: 15

Candidate Starts for Hutc2\_53:

(Start: 15 @35743 has 102 MA's), (19, 35734), (28, 35665), (40, 35593), (77, 35332), (93, 35206),

Gene: ILeeKay\_53 Start: 37469, Stop: 36678, Start Num: 13

Candidate Starts for ILeeKay\_53:

(Start: 13 @37469 has 143 MA's), (29, 37367), (30, 37361), (51, 37253), (61, 37160), (62, 37154), (84, 36998), (87, 36986), (92, 36950), (108, 36803), (112, 36764), (114, 36749),

Gene: Ichabod\_52 Start: 37098, Stop: 36307, Start Num: 13

Candidate Starts for Ichabod\_52:

(Start: 13 @37098 has 143 MA's), (29, 36996), (30, 36990), (38, 36945), (51, 36882), (61, 36789), (80, 36669), (84, 36627), (87, 36615), (92, 36579), (108, 36432), (112, 36393), (114, 36378),

Gene: IgnatiusPatJac\_50 Start: 37095, Stop: 36304, Start Num: 13

Candidate Starts for IgnatiusPatJac\_50:

(Start: 13 @37095 has 143 MA's), (Start: 24 @37041 has 1 MA's), (33, 36960), (59, 36795), (61, 36786), (62, 36780), (72, 36699), (83, 36645), (92, 36576), (108, 36429), (112, 36390), (114, 36375),

Gene: Insomnia\_53 Start: 36254, Stop: 35562, Start Num: 15

Candidate Starts for Insomnia\_53:

(Start: 15 @36254 has 102 MA's), (19, 36245), (28, 36176), (40, 36104), (77, 35843), (93, 35717),

Gene: IronMan\_54 Start: 37945, Stop: 37220, Start Num: 16

Candidate Starts for IronMan\_54:

(6, 38179), (Start: 16 @37945 has 34 MA's), (23, 37909), (28, 37867), (35, 37816), (42, 37786), (45, 37774), (49, 37759), (63, 37642), (65, 37630), (89, 37450), (93, 37420), (96, 37363), (107, 37312),

Gene: Iwokeuplikedis\_57 Start: 36868, Stop: 36170, Start Num: 15

Candidate Starts for Iwokeuplikedis\_57:

(10, 37033), (Start: 15 @36868 has 102 MA's), (54, 36637), (58, 36580), (65, 36538), (73, 36469), (77, 36442), (93, 36328),

Gene: JC27\_51 Start: 37136, Stop: 36345, Start Num: 13

Candidate Starts for JC27\_51:

(Start: 13 @37136 has 143 MA's), (Start: 16 @37121 has 34 MA's), (Start: 24 @37082 has 1 MA's), (33, 37001), (59, 36836), (61, 36827), (62, 36821), (67, 36794), (72, 36740), (83, 36686), (92, 36617), (95, 36563), (108, 36470), (112, 36431),

Gene: Jaan\_54 Start: 38114, Stop: 37392, Start Num: 15

Candidate Starts for Jaan\_54:

(6, 38345), (Start: 15 @38114 has 102 MA's), (35, 37985), (54, 37898), (65, 37799), (66, 37790), (73, 37730), (74, 37724), (79, 37703), (93, 37592), (96, 37535), (107, 37484),

Gene: Jabith\_54 Start: 36255, Stop: 35563, Start Num: 15

Candidate Starts for Jabith\_54:

(Start: 15 @36255 has 102 MA's), (19, 36246), (28, 36177), (40, 36105), (77, 35844), (93, 35718),

Gene: JackSparrow\_50 Start: 36905, Stop: 36120, Start Num: 14

Candidate Starts for JackSparrow\_50:

(Start: 12 @36911 has 1 MA's), (Start: 14 @36905 has 46 MA's), (30, 36803), (34, 36770), (36, 36767), (45, 36725), (59, 36611), (61, 36602), (62, 36596), (67, 36569), (72, 36515), (75, 36488), (79, 36485), (92, 36392), (95, 36338), (108, 36245), (112, 36206), (114, 36191),

Gene: Jasper\_51 Start: 36193, Stop: 35402, Start Num: 13

Candidate Starts for Jasper\_51:

(Start: 13 @36193 has 143 MA's), (Start: 24 @36139 has 1 MA's), (33, 36058), (59, 35893), (61, 35884), (62, 35878), (67, 35851), (72, 35797), (83, 35743), (92, 35674), (108, 35527), (112, 35488), (114, 35473),

Gene: Jeeves\_58 Start: 36728, Stop: 35979, Start Num: 16

Candidate Starts for Jeeves\_58:

(Start: 16 @36728 has 34 MA's), (43, 36563), (49, 36542), (58, 36455), (64, 36419), (65, 36413), (72, 36347), (77, 36317), (93, 36203), (96, 36146), (106, 36095), (107, 36089),

Gene: Jerm\_56 Start: 37329, Stop: 36643, Start Num: 15

Candidate Starts for Jerm\_56:

(Start: 15 @37329 has 102 MA's), (23, 37278), (42, 37158), (45, 37146), (47, 37140), (64, 37008), (73, 36939), (98, 36723),

Gene: Jerm2\_50 Start: 36954, Stop: 36139, Start Num: 13

Candidate Starts for Jerm2\_50:

(Start: 13 @36954 has 143 MA's), (Start: 24 @36900 has 1 MA's), (33, 36819), (59, 36654), (61, 36645), (62, 36639), (69, 36561), (80, 36501), (84, 36459), (87, 36447), (92, 36411), (95, 36357), (108, 36264), (112, 36225), (114, 36210),

Gene: Jorgensen\_51 Start: 36836, Stop: 36045, Start Num: 13

Candidate Starts for Jorgensen\_51:

(Start: 13 @36836 has 143 MA's), (Start: 24 @36782 has 1 MA's), (33, 36701), (59, 36536), (61, 36527), (62, 36521), (67, 36494), (72, 36440), (83, 36386), (92, 36317), (95, 36263), (112, 36131), (114, 36116),

Gene: Joselito\_54 Start: 36203, Stop: 35511, Start Num: 15

Candidate Starts for Joselito\_54:

(Start: 15 @36203 has 102 MA's), (19, 36194), (28, 36125), (40, 36053), (77, 35792), (93, 35666),

Gene: JoshKayV\_56 Start: 37405, Stop: 36737, Start Num: 16

Candidate Starts for JoshKayV\_56:

(1, 37909), (Start: 16 @37405 has 34 MA's), (43, 37240), (48, 37225), (49, 37219), (54, 37189), (93, 36880),

Gene: Journey13\_48 Start: 35135, Stop: 34443, Start Num: 15

Candidate Starts for Journey13\_48:

(5, 35369), (Start: 15 @35135 has 102 MA's), (Start: 24 @35087 has 1 MA's), (30, 35036), (41, 34973), (46, 34958), (58, 34856), (65, 34814), (73, 34745), (74, 34739), (93, 34604),

Gene: Jsquared\_52 Start: 35755, Stop: 35051, Start Num: 15

Candidate Starts for Jsquared\_52:

(3, 36088), (10, 35920), (Start: 15 @35755 has 102 MA's), (80, 35332), (88, 35272), (98, 35146), (111, 35083),

Gene: JuliaChild\_50 Start: 36549, Stop: 35764, Start Num: 14

Candidate Starts for JuliaChild\_50:

(Start: 14 @36549 has 46 MA's), (30, 36447), (34, 36414), (36, 36411), (45, 36369), (59, 36255), (61, 36246), (62, 36240), (67, 36213), (72, 36159), (83, 36105), (92, 36036), (95, 35982), (108, 35889), (112, 35850), (114, 35835),

Gene: KBG\_51 Start: 37876, Stop: 37085, Start Num: 13

Candidate Starts for KBG\_51:

(Start: 13 @37876 has 143 MA's), (29, 37774), (30, 37768), (51, 37660), (61, 37567), (62, 37561), (72, 37480), (75, 37453), (79, 37450), (84, 37405), (87, 37393), (92, 37357), (108, 37210), (112, 37171), (114, 37156),

Gene: KSSJEB\_49 Start: 36542, Stop: 35751, Start Num: 13

Candidate Starts for KSSJEB\_49:

(Start: 13 @36542 has 143 MA's), (29, 36440), (30, 36434), (51, 36326), (61, 36233), (84, 36071), (87, 36059), (92, 36023), (95, 35969), (108, 35876), (112, 35837), (114, 35822),

Gene: Kalpine\_52 Start: 37009, Stop: 36338, Start Num: 16

Candidate Starts for Kalpine\_52:

(Start: 16 @37009 has 34 MA's), (54, 36793), (56, 36745), (79, 36595), (93, 36484), (101, 36400),

Gene: Kanely\_51 Start: 37191, Stop: 36406, Start Num: 14

Candidate Starts for Kanely\_51:

(Start: 14 @37191 has 46 MA's), (28, 37104), (30, 37089), (34, 37056), (36, 37053), (45, 37011), (59, 36897), (61, 36888), (62, 36882), (67, 36855), (72, 36801), (83, 36747), (92, 36678), (95, 36624), (108, 36531), (112, 36492), (114, 36477),

Gene: Kenmech\_53 Start: 37893, Stop: 37102, Start Num: 13

Candidate Starts for Kenmech\_53:

(Start: 13 @37893 has 143 MA's), (Start: 24 @37839 has 1 MA's), (33, 37758), (59, 37593), (61, 37584), (62, 37578), (67, 37551), (72, 37497), (83, 37443), (92, 37374), (95, 37320), (108, 37227), (112, 37188), (114, 37173),

Gene: Kerberos\_56 Start: 36631, Stop: 35924, Start Num: 15

Candidate Starts for Kerberos\_56:

(Start: 15 @36631 has 102 MA's), (20, 36604), (23, 36583), (41, 36466), (65, 36307), (79, 36208), (82, 36193), (94, 36064), (98, 36019),

Gene: Killigrew\_49 Start: 36603, Stop: 35818, Start Num: 14

Candidate Starts for Killigrew\_49:

(Start: 14 @36603 has 46 MA's), (30, 36501), (34, 36468), (36, 36465), (45, 36423), (59, 36309), (61, 36300), (62, 36294), (67, 36267), (72, 36213), (92, 36090), (95, 36036), (108, 35943), (112, 35904), (114, 35889),

Gene: KingCyrus\_56 Start: 38510, Stop: 37842, Start Num: 16

Candidate Starts for KingCyrus\_56:

(1, 39014), (Start: 16 @38510 has 34 MA's), (43, 38345), (48, 38330), (49, 38324), (54, 38294), (73, 38126), (77, 38099), (93, 37985),

Gene: Koduck\_55 Start: 36040, Stop: 35336, Start Num: 15

Candidate Starts for Koduck\_55:

(Start: 15 @36040 has 102 MA's), (38, 35893), (54, 35815), (65, 35716), (80, 35617), (88, 35557), (98, 35431), (111, 35368),

Gene: Kugel\_50 Start: 36874, Stop: 36059, Start Num: 13

Candidate Starts for Kugel\_50:

(Start: 13 @36874 has 143 MA's), (Start: 16 @36859 has 34 MA's), (Start: 24 @36820 has 1 MA's), (33, 36739), (59, 36574), (61, 36565), (62, 36559), (69, 36481), (92, 36331), (95, 36277), (112, 36145), (114, 36130),

Gene: KyMonks1A\_51 Start: 36749, Stop: 35958, Start Num: 13

Candidate Starts for KyMonks1A\_51:

(Start: 13 @36749 has 143 MA's), (Start: 16 @36734 has 34 MA's), (Start: 24 @36695 has 1 MA's), (33, 36614), (59, 36449), (61, 36440), (62, 36434), (67, 36407), (72, 36353), (83, 36299), (92, 36230), (95, 36176), (108, 36083), (112, 36044),

Gene: Kykar\_49 Start: 36526, Stop: 35741, Start Num: 14

Candidate Starts for Kykar\_49:

(Start: 14 @36526 has 46 MA's), (28, 36439), (30, 36424), (34, 36391), (36, 36388), (45, 36346), (59, 36232), (61, 36223), (62, 36217), (67, 36190), (72, 36136), (83, 36082), (92, 36013), (108, 35866), (112, 35827), (114, 35812),

Gene: L5\_53 Start: 36115, Stop: 35411, Start Num: 15

Candidate Starts for L5\_53:

(Start: 15 @36115 has 102 MA's), (38, 35968), (54, 35890), (65, 35791), (80, 35692), (88, 35632), (98, 35506), (111, 35443),

Gene: LadyBird\_59 Start: 37733, Stop: 36972, Start Num: 15

Candidate Starts for LadyBird\_59:

(10, 37898), (Start: 15 @37733 has 102 MA's), (Start: 24 @37679 has 1 MA's), (32, 37598), (57, 37454), (64, 37412), (65, 37406), (104, 37100), (115, 37019), (117, 36980),

Gene: Lamina13\_50 Start: 36488, Stop: 35712, Start Num: 16

Candidate Starts for Lamina13\_50:

(Start: 13 @36503 has 143 MA's), (Start: 16 @36488 has 34 MA's), (Start: 24 @36449 has 1 MA's), (33, 36368), (59, 36203), (61, 36194), (62, 36188), (67, 36161), (72, 36107), (83, 36053), (92, 35984), (112, 35798), (114, 35783),

Gene: Landor\_55 Start: 38023, Stop: 37298, Start Num: 16

Candidate Starts for Landor\_55:

(6, 38257), (Start: 16 @38023 has 34 MA's), (28, 37945), (35, 37894), (42, 37864), (45, 37852), (50, 37834), (64, 37714), (65, 37708), (73, 37639), (79, 37609), (84, 37564), (89, 37528), (93, 37498), (96, 37441), (107, 37390),

Gene: Larenn\_53 Start: 36922, Stop: 36218, Start Num: 15

Candidate Starts for Larenn\_53:

(Start: 15 @36922 has 102 MA's), (32, 36793), (64, 36607), (65, 36601), (82, 36487),

Gene: Leogania\_54 Start: 37949, Stop: 37275, Start Num: 16

Candidate Starts for Leogania\_54:

(10, 38117), (Start: 16 @37949 has 34 MA's), (23, 37913), (54, 37733), (58, 37676), (65, 37634), (66, 37625), (73, 37565), (79, 37535), (83, 37511), (88, 37472), (93, 37424),

Gene: Lesedi\_46 Start: 35721, Stop: 34936, Start Num: 14

Candidate Starts for Lesedi\_46:

(Start: 14 @35721 has 46 MA's), (30, 35619), (34, 35586), (36, 35583), (45, 35541), (59, 35427), (61, 35418), (62, 35412), (67, 35385), (72, 35331), (83, 35277), (92, 35208), (95, 35154), (108, 35061), (112, 35022), (114, 35007),

Gene: Leviathan\_56 Start: 37386, Stop: 36700, Start Num: 15

Candidate Starts for Leviathan\_56:

(Start: 15 @37386 has 102 MA's), (23, 37335), (42, 37215), (45, 37203), (47, 37197), (64, 37065), (73, 36996), (98, 36780),

Gene: Licorice\_52 Start: 37966, Stop: 37175, Start Num: 13

Candidate Starts for Licorice\_52:

(Start: 13 @37966 has 143 MA's), (Start: 16 @37951 has 34 MA's), (Start: 24 @37912 has 1 MA's), (33, 37831), (59, 37666), (61, 37657), (62, 37651), (67, 37624), (72, 37570), (83, 37516), (92, 37447), (112, 37261), (114, 37246),

Gene: LilBib\_50 Start: 37024, Stop: 36233, Start Num: 13

Candidate Starts for LilBib\_50:

(Start: 13 @37024 has 143 MA's), (Start: 16 @37009 has 34 MA's), (Start: 24 @36970 has 1 MA's), (33, 36889), (61, 36715), (62, 36709), (67, 36682), (72, 36628), (83, 36574), (92, 36505), (112, 36319), (114, 36304),

Gene: LilTurb\_55 Start: 37210, Stop: 36524, Start Num: 15

Candidate Starts for LilTurb\_55:

(Start: 15 @37210 has 102 MA's), (23, 37159), (42, 37039), (45, 37027), (47, 37021), (64, 36889), (73, 36820), (98, 36604),

Gene: Lockley\_48 Start: 36245, Stop: 35460, Start Num: 14

Candidate Starts for Lockley\_48:

(Start: 12 @36251 has 1 MA's), (Start: 14 @36245 has 46 MA's), (30, 36143), (34, 36110), (36, 36107), (45, 36065), (59, 35951), (61, 35942), (62, 35936), (72, 35855), (75, 35828), (79, 35825), (92, 35732), (95, 35678), (108, 35585), (112, 35546), (114, 35531),

Gene: Lokk\_51 Start: 36207, Stop: 35464, Start Num: 16

Candidate Starts for Lokk\_51:

(2, 36612), (Start: 15 @36210 has 102 MA's), (Start: 16 @36207 has 34 MA's), (26, 36141), (51, 36006), (55, 35955), (61, 35913), (71, 35835), (93, 35688), (96, 35631), (106, 35580), (113, 35550), (115, 35511), (117, 35472),

Gene: Lopton\_50 Start: 37851, Stop: 37060, Start Num: 13

Candidate Starts for Lopton\_50:

(Start: 13 @37851 has 143 MA's), (29, 37749), (30, 37743), (51, 37635), (61, 37542), (84, 37380), (87, 37368), (92, 37332), (95, 37278), (108, 37185), (112, 37146), (114, 37131),

Gene: Loser\_56 Start: 37765, Stop: 37091, Start Num: 15

Candidate Starts for Loser\_56:

(Start: 15 @37765 has 102 MA's), (35, 37633), (41, 37606), (49, 37576), (61, 37468), (65, 37447), (72, 37381), (73, 37378), (79, 37348), (93, 37237), (101, 37153),

Gene: Luchador\_58 Start: 38522, Stop: 37764, Start Num: 16

Candidate Starts for Luchador\_58:

(Start: 16 @38522 has 34 MA's), (52, 38303), (54, 38291), (55, 38255), (63, 38204), (65, 38192), (66, 38183), (81, 38093), (89, 38012), (96, 37934), (99, 37922), (109, 37865),

Gene: Lucivia\_54 Start: 36252, Stop: 35560, Start Num: 15

Candidate Starts for Lucivia\_54:

(Start: 15 @36252 has 102 MA's), (19, 36243), (28, 36174), (40, 36102), (77, 35841), (93, 35715),

Gene: Lucyedi\_55 Start: 36663, Stop: 35938, Start Num: 16

Candidate Starts for Lucyedi\_55:

(3, 37038), (Start: 16 @36663 has 34 MA's), (23, 36627), (27, 36588), (37, 36528), (41, 36507), (45, 36492), (49, 36477), (51, 36462), (52, 36459), (56, 36399), (64, 36354), (65, 36348), (66, 36339), (81, 36246), (96, 36084), (100, 36069),

Gene: MPlant7149\_48 Start: 35817, Stop: 35002, Start Num: 13

Candidate Starts for MPlant7149\_48:

(Start: 13 @35817 has 143 MA's), (Start: 24 @35763 has 1 MA's), (33, 35682), (61, 35508), (62, 35502), (69, 35424), (80, 35364), (84, 35322), (87, 35310), (92, 35274), (95, 35220), (108, 35127), (112, 35088), (114, 35073),

Gene: MaCh\_54 Start: 36182, Stop: 35490, Start Num: 15

Candidate Starts for MaCh\_54:

(Start: 15 @36182 has 102 MA's), (19, 36173), (28, 36104), (40, 36032), (77, 35771), (93, 35645),

Gene: Mabel\_53 Start: 35784, Stop: 35092, Start Num: 15

Candidate Starts for Mabel\_53:

(Start: 15 @35784 has 102 MA's), (19, 35775), (28, 35706), (40, 35634), (77, 35373), (93, 35247),

Gene: Magnar\_49 Start: 37267, Stop: 36476, Start Num: 13

Candidate Starts for Magnar\_49:

(Start: 13 @37267 has 143 MA's), (Start: 16 @37252 has 34 MA's), (Start: 24 @37213 has 1 MA's), (33, 37132), (59, 36967), (61, 36958), (62, 36952), (67, 36925), (72, 36871), (83, 36817), (92, 36748), (95, 36694), (108, 36601), (112, 36562), (114, 36547),

Gene: Magnito\_48 Start: 35871, Stop: 35080, Start Num: 13

Candidate Starts for Magnito\_48:

(Start: 13 @35871 has 143 MA's), (Start: 24 @35817 has 1 MA's), (33, 35736), (59, 35571), (61, 35562), (62, 35556), (67, 35529), (72, 35475), (83, 35421), (92, 35352), (95, 35298), (108, 35205), (112, 35166), (114, 35151),

Gene: Makemake\_49 Start: 37321, Stop: 36530, Start Num: 13

Candidate Starts for Makemake\_49:

(Start: 13 @37321 has 143 MA's), (Start: 24 @37267 has 1 MA's), (33, 37186), (59, 37021), (61, 37012), (62, 37006), (67, 36979), (72, 36925), (83, 36871), (92, 36802), (95, 36748), (112, 36616), (114, 36601),

Gene: Malec\_54 Start: 37489, Stop: 36785, Start Num: 15

Candidate Starts for Malec\_54:

(Start: 15 @37489 has 102 MA's), (32, 37360), (64, 37174), (65, 37168), (82, 37054),

Gene: Manatee\_51 Start: 36397, Stop: 35606, Start Num: 13

Candidate Starts for Manatee\_51:



(Start: 13 @36397 has 143 MA's), (29, 36295), (30, 36289), (51, 36181), (61, 36088), (62, 36082), (84, 35926), (87, 35914), (92, 35878), (108, 35731), (112, 35692), (114, 35677),

Gene: Marcell\_47 Start: 36187, Stop: 35396, Start Num: 13

Candidate Starts for Marcell\_47:

(Start: 13 @36187 has 143 MA's), (Start: 16 @36172 has 34 MA's), (Start: 24 @36133 has 1 MA's), (31, 36070), (33, 36052), (59, 35887), (61, 35878), (62, 35872), (72, 35791), (75, 35764), (79, 35761), (92, 35668), (95, 35614), (108, 35521), (112, 35482), (114, 35467),

Gene: Marge\_49 Start: 36998, Stop: 36207, Start Num: 13

Candidate Starts for Marge\_49:

(Start: 13 @36998 has 143 MA's), (Start: 16 @36983 has 34 MA's), (Start: 24 @36944 has 1 MA's), (33, 36863), (59, 36698), (61, 36689), (62, 36683), (67, 36656), (72, 36602), (83, 36548), (92, 36479), (108, 36332), (112, 36293), (114, 36278),

Gene: Maroc7\_47 Start: 36115, Stop: 35300, Start Num: 13

Candidate Starts for Maroc7\_47:

(Start: 13 @36115 has 143 MA's), (Start: 16 @36100 has 34 MA's), (Start: 24 @36061 has 1 MA's), (33, 35980), (59, 35815), (61, 35806), (62, 35800), (69, 35722), (80, 35662), (84, 35620), (87, 35608), (92, 35572), (95, 35518), (108, 35425), (112, 35386), (114, 35371),

Gene: Marsha\_49 Start: 37554, Stop: 36763, Start Num: 13

Candidate Starts for Marsha\_49:

(Start: 13 @37554 has 143 MA's), (Start: 16 @37539 has 34 MA's), (Start: 24 @37500 has 1 MA's), (33, 37419), (59, 37254), (61, 37245), (62, 37239), (67, 37212), (72, 37158), (83, 37104), (92, 37035), (112, 36849), (114, 36834),

Gene: MaryBeth\_49 Start: 36460, Stop: 35669, Start Num: 13

Candidate Starts for MaryBeth\_49:

(Start: 13 @36460 has 143 MA's), (Start: 24 @36406 has 1 MA's), (33, 36325), (59, 36160), (61, 36151), (62, 36145), (67, 36118), (72, 36064), (83, 36010), (92, 35941), (95, 35887), (112, 35755), (114, 35740),

Gene: McGuire\_51 Start: 36646, Stop: 35855, Start Num: 13

Candidate Starts for McGuire\_51:

(Start: 13 @36646 has 143 MA's), (29, 36544), (30, 36538), (38, 36493), (51, 36430), (61, 36337), (80, 36217), (84, 36175), (87, 36163), (92, 36127), (108, 35980), (112, 35941), (114, 35926),

Gene: MetalQZJ\_48 Start: 36460, Stop: 35669, Start Num: 13

Candidate Starts for MetalQZJ\_48:

(Start: 13 @36460 has 143 MA's), (Start: 24 @36406 has 1 MA's), (33, 36325), (59, 36160), (61, 36151), (62, 36145), (67, 36118), (72, 36064), (83, 36010), (92, 35941), (95, 35887), (112, 35755), (114, 35740),

Gene: Michley\_49 Start: 36291, Stop: 35500, Start Num: 13

Candidate Starts for Michley\_49:

(Start: 13 @36291 has 143 MA's), (Start: 16 @36276 has 34 MA's), (Start: 24 @36237 has 1 MA's), (33, 36156), (59, 35991), (61, 35982), (62, 35976), (72, 35895), (83, 35841), (92, 35772), (108, 35625), (112, 35586), (114, 35571),

Gene: MiculUcigas\_54 Start: 36715, Stop: 36020, Start Num: 15

Candidate Starts for MiculUcigas\_54:

(7, 36922), (Start: 15 @36715 has 102 MA's), (41, 36553), (54, 36493), (65, 36394), (73, 36325), (77, 36298), (82, 36280), (93, 36178),

Gene: Miko\_51 Start: 36985, Stop: 36242, Start Num: 16

Candidate Starts for Miko\_51:

(Start: 15 @36988 has 102 MA's), (Start: 16 @36985 has 34 MA's), (26, 36919), (51, 36784), (52, 36781), (55, 36733), (61, 36691), (71, 36613), (93, 36466), (96, 36409), (106, 36358), (113, 36328), (115, 36289), (117, 36250),

Gene: MissWhite\_53 Start: 35277, Stop: 34594, Start Num: 18

Candidate Starts for MissWhite\_53:

(Start: 18 @35277 has 1 MA's), (23, 35241), (35, 35148), (42, 35118), (65, 34962), (68, 34935), (73, 34893), (74, 34887), (93, 34752),

Gene: Molly\_50 Start: 35861, Stop: 35076, Start Num: 14

Candidate Starts for Molly\_50:

(Start: 14 @35861 has 46 MA's), (30, 35759), (34, 35726), (36, 35723), (45, 35681), (59, 35567), (61, 35558), (62, 35552), (67, 35525), (72, 35471), (83, 35417), (92, 35348), (95, 35294), (108, 35201), (112, 35162), (114, 35147),

Gene: Monet\_52 Start: 37990, Stop: 37199, Start Num: 13

Candidate Starts for Monet\_52:

(Start: 13 @37990 has 143 MA's), (Start: 16 @37975 has 34 MA's), (33, 37855), (59, 37690), (61, 37681), (62, 37675), (72, 37594), (83, 37540), (92, 37471), (108, 37324), (112, 37285), (114, 37270),

Gene: Moose\_49 Start: 36355, Stop: 35570, Start Num: 14

Candidate Starts for Moose\_49:

(Start: 14 @36355 has 46 MA's), (28, 36268), (30, 36253), (34, 36220), (36, 36217), (45, 36175), (59, 36061), (61, 36052), (62, 36046), (67, 36019), (72, 35965), (83, 35911), (92, 35842), (95, 35788), (108, 35695), (112, 35656), (114, 35641),

Gene: MrGordo\_49 Start: 36079, Stop: 35294, Start Num: 14

Candidate Starts for MrGordo\_49:

(Start: 14 @36079 has 46 MA's), (30, 35977), (34, 35944), (36, 35941), (45, 35899), (59, 35785), (61, 35776), (62, 35770), (67, 35743), (72, 35689), (83, 35635), (92, 35566), (108, 35419), (112, 35380), (114, 35365),

Gene: Mryolo\_47 Start: 35863, Stop: 35048, Start Num: 13

Candidate Starts for Mryolo\_47:

(Start: 13 @35863 has 143 MA's), (Start: 16 @35848 has 34 MA's), (Start: 24 @35809 has 1 MA's), (33, 35728), (59, 35563), (61, 35554), (62, 35548), (69, 35470), (80, 35410), (84, 35368), (87, 35356), (92, 35320), (95, 35266), (108, 35173), (112, 35134), (114, 35119),

Gene: Mulciber\_53 Start: 35740, Stop: 35048, Start Num: 15

Candidate Starts for Mulciber\_53:

(Start: 15 @35740 has 102 MA's), (19, 35731), (28, 35662), (40, 35590), (77, 35329), (93, 35203),

Gene: Mule\_46 Start: 34004, Stop: 33219, Start Num: 14

Candidate Starts for Mule\_46:

(Start: 14 @34004 has 46 MA's), (30, 33902), (34, 33869), (36, 33866), (45, 33824), (59, 33710), (61, 33701), (62, 33695), (67, 33668), (72, 33614), (75, 33587), (79, 33584), (92, 33491), (95, 33437), (108, 33344), (112, 33305), (114, 33290),

Gene: Munch\_54 Start: 36203, Stop: 35511, Start Num: 15

Candidate Starts for Munch\_54:

(Start: 15 @36203 has 102 MA's), (19, 36194), (28, 36125), (40, 36053), (77, 35792), (93, 35666),

Gene: Museum\_50 Start: 36042, Stop: 35227, Start Num: 13

Candidate Starts for Museum\_50:

(Start: 13 @36042 has 143 MA's), (Start: 24 @35988 has 1 MA's), (33, 35907), (61, 35733), (62, 35727), (69, 35649), (80, 35589), (84, 35547), (87, 35535), (92, 35499), (108, 35352), (112, 35313), (114, 35298),

Gene: NEHalo\_47 Start: 35779, Stop: 34994, Start Num: 14

Candidate Starts for NEHalo\_47:

(Start: 14 @35779 has 46 MA's), (30, 35677), (34, 35644), (36, 35641), (45, 35599), (59, 35485), (61, 35476), (62, 35470), (67, 35443), (72, 35389), (92, 35266), (95, 35212), (108, 35119), (112, 35080), (114, 35065),

Gene: NaSiaTalie\_54 Start: 36809, Stop: 36114, Start Num: 15

Candidate Starts for NaSiaTalie\_54:

(6, 37040), (7, 37016), (8, 37001), (Start: 15 @36809 has 102 MA's), (41, 36647), (54, 36587), (65, 36488), (73, 36419), (77, 36392), (82, 36374), (93, 36272), (101, 36188),

Gene: Naira\_52 Start: 38755, Stop: 37964, Start Num: 13

Candidate Starts for Naira\_52:

(Start: 13 @38755 has 143 MA's), (Start: 24 @38701 has 1 MA's), (33, 38620), (59, 38455), (61, 38446), (62, 38440), (67, 38413), (72, 38359), (83, 38305), (92, 38236), (108, 38089), (112, 38050), (114, 38035),

Gene: Naji\_56 Start: 36632, Stop: 35925, Start Num: 15

Candidate Starts for Naji\_56:

(Start: 15 @36632 has 102 MA's), (20, 36605), (23, 36584), (41, 36467), (65, 36308), (79, 36209), (82, 36194), (94, 36065), (98, 36020),

Gene: Nedarya\_55 Start: 35344, Stop: 34664, Start Num: 15

Candidate Starts for Nedarya\_55:

(Start: 15 @35344 has 102 MA's), (17, 35335), (30, 35242), (40, 35185), (49, 35149), (52, 35131), (64, 35026), (65, 35020), (96, 34756), (102, 34723), (113, 34675),

Gene: Nerujay\_52 Start: 37444, Stop: 36659, Start Num: 14

Candidate Starts for Nerujay\_52:

(Start: 12 @37450 has 1 MA's), (Start: 14 @37444 has 46 MA's), (30, 37342), (34, 37309), (36, 37306), (45, 37264), (59, 37150), (61, 37141), (62, 37135), (67, 37108), (72, 37054), (75, 37027), (79, 37024), (92, 36931), (95, 36877), (108, 36784), (112, 36745), (114, 36730),

Gene: Nhonho\_50 Start: 36956, Stop: 36165, Start Num: 13

Candidate Starts for Nhonho\_50:

(Start: 13 @36956 has 143 MA's), (Start: 24 @36902 has 1 MA's), (33, 36821), (59, 36656), (61, 36647), (62, 36641), (67, 36614), (72, 36560), (83, 36506), (92, 36437), (95, 36383), (108, 36290), (112, 36251), (114, 36236),

Gene: NicoleTera\_53 Start: 37099, Stop: 36425, Start Num: 15

Candidate Starts for NicoleTera\_53:

(Start: 15 @37099 has 102 MA's), (35, 36967), (43, 36931), (48, 36916), (49, 36910), (58, 36823), (79, 36682), (93, 36571), (101, 36487),

Gene: Niza\_52 Start: 37862, Stop: 37071, Start Num: 13

Candidate Starts for Niza\_52:

(Start: 13 @37862 has 143 MA's), (Start: 24 @37808 has 1 MA's), (33, 37727), (59, 37562), (61, 37553), (62, 37547), (67, 37520), (72, 37466), (83, 37412), (92, 37343), (95, 37289), (108, 37196), (112, 37157), (114, 37142),

Gene: Norz\_50 Start: 37037, Stop: 36246, Start Num: 13

Candidate Starts for Norz\_50:

(Start: 13 @37037 has 143 MA's), (Start: 24 @36983 has 1 MA's), (33, 36902), (59, 36737), (61, 36728), (62, 36722), (67, 36695), (72, 36641), (83, 36587), (92, 36518), (95, 36464), (108, 36371), (112, 36332), (114, 36317),

Gene: NothingSpecial\_52 Start: 37316, Stop: 36636, Start Num: 16

Candidate Starts for NothingSpecial\_52:

(Start: 16 @37316 has 34 MA's), (41, 37160), (49, 37130), (65, 37001), (72, 36935), (81, 36899), (89, 36824), (93, 36794), (98, 36731), (111, 36668),

Gene: Odin\_52 Start: 35654, Stop: 34950, Start Num: 15

Candidate Starts for Odin\_52:

(Start: 15 @35654 has 102 MA's), (19, 35636), (23, 35609), (25, 35588), (41, 35492), (57, 35381), (65, 35333), (97, 35048),

Gene: Ohno789\_51 Start: 37546, Stop: 36761, Start Num: 14

Candidate Starts for Ohno789\_51:

(Start: 14 @37546 has 46 MA's), (30, 37444), (34, 37411), (36, 37408), (45, 37366), (59, 37252), (61, 37243), (62, 37237), (67, 37210), (72, 37156), (83, 37102), (92, 37033), (95, 36979), (112, 36847), (114, 36832),

Gene: Oogway\_48 Start: 35707, Stop: 34922, Start Num: 14

Candidate Starts for Oogway\_48:

(Start: 14 @35707 has 46 MA's), (30, 35605), (34, 35572), (36, 35569), (45, 35527), (59, 35413), (61, 35404), (62, 35398), (67, 35371), (72, 35317), (92, 35194), (108, 35047), (114, 34993),

Gene: Orange\_53 Start: 35752, Stop: 35060, Start Num: 15

Candidate Starts for Orange\_53:

(Start: 15 @35752 has 102 MA's), (19, 35743), (28, 35674), (40, 35602), (77, 35341), (93, 35215),

Gene: PSullivan\_49 Start: 35823, Stop: 35038, Start Num: 14

Candidate Starts for PSullivan\_49:

(Start: 14 @35823 has 46 MA's), (30, 35721), (34, 35688), (36, 35685), (45, 35643), (59, 35529), (61, 35520), (62, 35514), (67, 35487), (72, 35433), (83, 35379), (92, 35310), (95, 35256), (108, 35163), (112, 35124), (114, 35109),

Gene: PacerPaul\_49 Start: 36567, Stop: 35782, Start Num: 14

Candidate Starts for PacerPaul\_49:

(Start: 14 @36567 has 46 MA's), (30, 36465), (34, 36432), (36, 36429), (45, 36387), (59, 36273), (61, 36264), (62, 36258), (67, 36231), (72, 36177), (83, 36123), (92, 36054), (95, 36000), (108, 35907), (112, 35868), (114, 35853),

Gene: PainterBoy\_55 Start: 36600, Stop: 35875, Start Num: 16

Candidate Starts for PainterBoy\_55:

(3, 36975), (Start: 16 @36600 has 34 MA's), (23, 36564), (27, 36525), (37, 36465), (41, 36444), (45, 36429), (49, 36414), (51, 36399), (52, 36396), (56, 36336), (64, 36291), (65, 36285), (66, 36276), (81, 36183), (96, 36021), (100, 36006),

Gene: Papez\_52 Start: 38953, Stop: 38162, Start Num: 13

Candidate Starts for Papez\_52:

(Start: 13 @38953 has 143 MA's), (29, 38851), (30, 38845), (51, 38737), (61, 38644), (62, 38638), (72, 38557), (75, 38530), (79, 38527), (84, 38482), (87, 38470), (92, 38434), (108, 38287), (112, 38248), (114, 38233),

Gene: Paphu\_47 Start: 36087, Stop: 35296, Start Num: 13

Candidate Starts for Paphu\_47:

(Start: 13 @36087 has 143 MA's), (Start: 16 @36072 has 34 MA's), (Start: 24 @36033 has 1 MA's), (33, 35952), (61, 35778), (62, 35772), (67, 35745), (72, 35691), (83, 35637), (92, 35568), (108, 35421), (112, 35382), (114, 35367),

Gene: Paraselene\_47 Start: 36451, Stop: 35660, Start Num: 13

Candidate Starts for Paraselene\_47:

(Start: 13 @36451 has 143 MA's), (Start: 24 @36397 has 1 MA's), (33, 36316), (59, 36151), (61, 36142), (62, 36136), (67, 36109), (72, 36055), (83, 36001), (92, 35932), (95, 35878), (108, 35785), (112, 35746), (114, 35731),

Gene: Pari\_51 Start: 36488, Stop: 35673, Start Num: 13

Candidate Starts for Pari\_51:

(Start: 13 @36488 has 143 MA's), (Start: 24 @36434 has 1 MA's), (33, 36353), (59, 36188), (61, 36179), (62, 36173), (69, 36095), (80, 36035), (84, 35993), (87, 35981), (92, 35945), (95, 35891), (108, 35798), (112, 35759),

Gene: Parliament\_49 Start: 37001, Stop: 36210, Start Num: 13

Candidate Starts for Parliament\_49:

(Start: 13 @37001 has 143 MA's), (Start: 24 @36947 has 1 MA's), (33, 36866), (59, 36701), (61, 36692), (62, 36686), (67, 36659), (72, 36605), (83, 36551), (92, 36482), (95, 36428), (108, 36335), (112, 36296), (114, 36281),

Gene: PascalRango\_50 Start: 36346, Stop: 35555, Start Num: 13

Candidate Starts for PascalRango\_50:

(Start: 13 @36346 has 143 MA's), (29, 36244), (30, 36238), (38, 36193), (51, 36130), (61, 36037), (80, 35917), (84, 35875), (87, 35863), (92, 35827), (95, 35773), (108, 35680), (112, 35641), (114, 35626),

Gene: PattyP\_50 Start: 36211, Stop: 35420, Start Num: 13

Candidate Starts for PattyP\_50:

(Start: 13 @36211 has 143 MA's), (29, 36109), (30, 36103), (51, 35995), (61, 35902), (62, 35896), (72, 35815), (75, 35788), (79, 35785), (84, 35740), (87, 35728), (92, 35692), (108, 35545), (112, 35506), (114, 35491),

Gene: Pelly\_49 Start: 36925, Stop: 36134, Start Num: 13

Candidate Starts for Pelly\_49:

(Start: 13 @36925 has 143 MA's), (Start: 16 @36910 has 34 MA's), (Start: 24 @36871 has 1 MA's), (33, 36790), (59, 36625), (61, 36616), (62, 36610), (72, 36529), (75, 36502), (79, 36499), (92, 36406), (95, 36352), (112, 36220), (114, 36205),

Gene: Pepe\_46 Start: 34772, Stop: 33981, Start Num: 13

Candidate Starts for Pepe\_46:

(Start: 13 @34772 has 143 MA's), (Start: 24 @34718 has 1 MA's), (33, 34637), (59, 34472), (61, 34463), (62, 34457), (67, 34430), (72, 34376), (83, 34322), (92, 34253), (95, 34199), (108, 34106), (112, 34067), (114, 34052),

Gene: Perseus\_49 Start: 36890, Stop: 36105, Start Num: 14

Candidate Starts for Perseus\_49:

(Start: 14 @36890 has 46 MA's), (30, 36788), (34, 36755), (36, 36752), (45, 36710), (59, 36596), (61, 36587), (62, 36581), (67, 36554), (72, 36500), (75, 36473), (79, 36470), (92, 36377), (95, 36323), (108, 36230), (112, 36191), (114, 36176),

Gene: Petersenfast\_52 Start: 35751, Stop: 35059, Start Num: 15

Candidate Starts for Petersenfast\_52:

(Start: 15 @35751 has 102 MA's), (19, 35742), (28, 35673), (40, 35601), (77, 35340), (93, 35214),

Gene: Peterson\_54 Start: 39194, Stop: 38403, Start Num: 13

Candidate Starts for Peterson\_54:

(Start: 13 @39194 has 143 MA's), (Start: 16 @39179 has 34 MA's), (Start: 24 @39140 has 1 MA's), (33, 39059), (59, 38894), (61, 38885), (62, 38879), (67, 38852), (72, 38798), (83, 38744), (92, 38675), (95, 38621), (108, 38528), (112, 38489), (114, 38474),

Gene: Petp2012\_50 Start: 36820, Stop: 36035, Start Num: 14

Candidate Starts for Petp2012\_50:

(Start: 14 @36820 has 46 MA's), (30, 36718), (34, 36685), (36, 36682), (45, 36640), (59, 36526), (61, 36517), (62, 36511), (67, 36484), (72, 36430), (83, 36376), (92, 36307), (95, 36253), (108, 36160), (112, 36121), (114, 36106),

Gene: Petruccio\_49 Start: 36557, Stop: 35766, Start Num: 13

Candidate Starts for Petruccio\_49:

(Start: 13 @36557 has 143 MA's), (Start: 16 @36542 has 34 MA's), (Start: 24 @36503 has 1 MA's), (33, 36422), (59, 36257), (61, 36248), (62, 36242), (67, 36215), (72, 36161), (83, 36107), (92, 36038), (108, 35891), (112, 35852), (114, 35837),

Gene: Ph8s\_55 Start: 36008, Stop: 35307, Start Num: 15

Candidate Starts for Ph8s\_55:

(3, 36341), (Start: 15 @36008 has 102 MA's), (41, 35846), (43, 35837), (63, 35699), (65, 35687), (73, 35618), (82, 35576), (83, 35567), (94, 35447), (97, 35405),

Gene: Phaded\_55 Start: 38002, Stop: 37277, Start Num: 16

Candidate Starts for Phaded\_55:

(6, 38236), (Start: 16 @38002 has 34 MA's), (28, 37924), (35, 37873), (42, 37843), (45, 37831), (50, 37813), (64, 37693), (65, 37687), (73, 37618), (79, 37588), (84, 37543), (89, 37507), (93, 37477), (96, 37420), (107, 37369),

Gene: Pharaoh\_49 Start: 36570, Stop: 35899, Start Num: 16

Candidate Starts for Pharaoh\_49:

(Start: 16 @36570 has 34 MA's), (28, 36492), (43, 36405), (49, 36384), (65, 36255), (76, 36159), (93, 36045), (101, 35961),

Gene: PherrisBueller\_49 Start: 35826, Stop: 35035, Start Num: 13

Candidate Starts for PherrisBueller\_49:

(Start: 13 @35826 has 143 MA's), (Start: 24 @35772 has 1 MA's), (33, 35691), (59, 35526), (61, 35517), (62, 35511), (67, 35484), (72, 35430), (83, 35376), (92, 35307), (108, 35160), (112, 35121), (114, 35106),

Gene: PhrostyMug\_48 Start: 36169, Stop: 35384, Start Num: 14

Candidate Starts for PhrostyMug\_48:

(Start: 14 @36169 has 46 MA's), (30, 36067), (34, 36034), (36, 36031), (45, 35989), (59, 35875), (61, 35866), (62, 35860), (67, 35833), (72, 35779), (75, 35752), (79, 35749), (92, 35656), (95, 35602), (108, 35509), (112, 35470), (114, 35455),

Gene: PinkPlastic\_49 Start: 36394, Stop: 35609, Start Num: 14

Candidate Starts for PinkPlastic\_49:

(Start: 12 @36400 has 1 MA's), (Start: 14 @36394 has 46 MA's), (28, 36307), (30, 36292), (34, 36259), (36, 36256), (45, 36214), (59, 36100), (61, 36091), (62, 36085), (67, 36058), (72, 36004), (83, 35950), (92, 35881), (95, 35827), (108, 35734), (112, 35695), (114, 35680),

Gene: Pinto\_49 Start: 36038, Stop: 35223, Start Num: 13

Candidate Starts for Pinto\_49:

(Start: 13 @36038 has 143 MA's), (Start: 24 @35984 has 1 MA's), (33, 35903), (59, 35738), (61, 35729), (62, 35723), (69, 35645), (80, 35585), (84, 35543), (87, 35531), (92, 35495), (95, 35441), (112, 35309), (114, 35294),

Gene: Pippin\_51 Start: 36924, Stop: 36133, Start Num: 13

Candidate Starts for Pippin\_51:

(Start: 13 @36924 has 143 MA's), (Start: 16 @36909 has 34 MA's), (Start: 24 @36870 has 1 MA's), (33, 36789), (59, 36624), (61, 36615), (62, 36609), (72, 36528), (83, 36474), (92, 36405), (108, 36258), (112, 36219), (114, 36204),

Gene: Piro94\_54 Start: 37156, Stop: 36461, Start Num: 15

Candidate Starts for Piro94\_54:

(6, 37387), (7, 37363), (Start: 15 @37156 has 102 MA's), (41, 36994), (54, 36934), (65, 36835), (73, 36766), (77, 36739), (82, 36721), (93, 36619),

Gene: Pita2\_52 Start: 37320, Stop: 36535, Start Num: 14

Candidate Starts for Pita2\_52:

(Start: 14 @37320 has 46 MA's), (30, 37218), (34, 37185), (36, 37182), (45, 37140), (59, 37026), (61, 37017), (62, 37011), (67, 36984), (72, 36930), (83, 36876), (92, 36807), (95, 36753), (108, 36660), (112, 36621), (114, 36606),

Gene: Pomar16\_56 Start: 36672, Stop: 35965, Start Num: 15

Candidate Starts for Pomar16\_56:

(Start: 15 @36672 has 102 MA's), (20, 36645), (23, 36624), (41, 36507), (65, 36348), (79, 36249), (82, 36234), (94, 36105), (98, 36060),

Gene: Power\_53 Start: 36797, Stop: 36105, Start Num: 15

Candidate Starts for Power\_53:

(1, 37298), (Start: 15 @36797 has 102 MA's), (23, 36749), (41, 36632), (73, 36404), (78, 36374), (83, 36350), (94, 36230),

Gene: Pukovnik\_53 Start: 37659, Stop: 36934, Start Num: 16

Candidate Starts for Pukovnik\_53:

(Start: 16 @37659 has 34 MA's), (28, 37581), (35, 37530), (49, 37473), (58, 37386), (61, 37365), (63, 37356), (65, 37344), (73, 37275), (77, 37248), (89, 37164), (93, 37134), (96, 37077), (107, 37026),

Gene: QTRlifeCrisis\_53 Start: 37022, Stop: 36231, Start Num: 13

Candidate Starts for QTRlifeCrisis\_53:

(Start: 13 @37022 has 143 MA's), (Start: 16 @37007 has 34 MA's), (Start: 24 @36968 has 1 MA's), (33, 36887), (59, 36722), (61, 36713), (62, 36707), (72, 36626), (83, 36572), (92, 36503), (95, 36449), (108, 36356), (112, 36317), (114, 36302),

Gene: QueenB2\_53 Start: 36775, Stop: 36089, Start Num: 15

Candidate Starts for QueenB2\_53:

(10, 36937), (Start: 15 @36775 has 102 MA's), (21, 36736), (42, 36604), (45, 36592), (47, 36586), (64, 36454), (73, 36385), (94, 36214), (97, 36172), (98, 36169),

Gene: QueenBeesly\_54 Start: 36744, Stop: 36052, Start Num: 15

Candidate Starts for QueenBeesly\_54:

(Start: 15 @36744 has 102 MA's), (23, 36696), (41, 36579), (73, 36351), (78, 36321), (82, 36306), (83, 36297), (94, 36177),

Gene: Rachaly\_53 Start: 37130, Stop: 36387, Start Num: 16

Candidate Starts for Rachaly\_53:

(Start: 15 @37133 has 102 MA's), (Start: 16 @37130 has 34 MA's), (26, 37064), (51, 36929), (55, 36878), (61, 36836), (71, 36758), (93, 36611), (96, 36554), (106, 36503), (113, 36473), (115, 36434), (117, 36395),

Gene: Rajelicia\_50 Start: 36980, Stop: 36165, Start Num: 13

Candidate Starts for Rajelicia\_50:

(Start: 13 @36980 has 143 MA's), (Start: 24 @36926 has 1 MA's), (33, 36845), (59, 36680), (61, 36671), (62, 36665), (69, 36587), (80, 36527), (84, 36485), (87, 36473), (92, 36437), (95, 36383), (108, 36290), (112, 36251),

Gene: RedRock\_56 Start: 37992, Stop: 37312, Start Num: 15

Candidate Starts for RedRock\_56:

(Start: 15 @37992 has 102 MA's), (19, 37974), (43, 37818), (55, 37731), (58, 37710), (65, 37668), (70, 37620), (79, 37569), (93, 37458),

Gene: Refuge\_52 Start: 37802, Stop: 37131, Start Num: 16

Candidate Starts for Refuge\_52:

(3, 38144), (11, 37967), (Start: 16 @37802 has 34 MA's), (35, 37673), (48, 37622), (49, 37616), (65, 37487), (74, 37412), (93, 37277),

Gene: Retro23\_55 Start: 37160, Stop: 36489, Start Num: 15

Candidate Starts for Retro23\_55:

(10, 37322), (Start: 15 @37160 has 102 MA's), (35, 37028), (49, 36971), (53, 36950), (65, 36842), (79, 36743), (88, 36680), (93, 36632),

Gene: Rhynn\_48 Start: 36257, Stop: 35466, Start Num: 13

Candidate Starts for Rhynn\_48:

(Start: 13 @36257 has 143 MA's), (Start: 24 @36203 has 1 MA's), (33, 36122), (59, 35957), (61, 35948), (62, 35942), (67, 35915), (72, 35861), (83, 35807), (92, 35738), (95, 35684), (108, 35591), (112, 35552), (114, 35537),

Gene: RidgeCB\_49 Start: 36166, Stop: 35381, Start Num: 14

Candidate Starts for RidgeCB\_49:

(Start: 14 @36166 has 46 MA's), (28, 36079), (30, 36064), (34, 36031), (36, 36028), (45, 35986), (59, 35872), (61, 35863), (62, 35857), (67, 35830), (72, 35776), (83, 35722), (92, 35653), (95, 35599), (108, 35506), (112, 35467), (114, 35452),



Gene: Ringer\_50 Start: 37234, Stop: 36497, Start Num: 24

Candidate Starts for Ringer\_50:

(Start: 13 @37288 has 143 MA's), (Start: 16 @37273 has 34 MA's), (Start: 24 @37234 has 1 MA's), (33, 37153), (59, 36988), (61, 36979), (62, 36973), (67, 36946), (72, 36892), (83, 36838), (92, 36769), (95, 36715), (112, 36583), (114, 36568),

Gene: Rohr\_50 Start: 37000, Stop: 36185, Start Num: 13

Candidate Starts for Rohr\_50:

(Start: 13 @37000 has 143 MA's), (Start: 24 @36946 has 1 MA's), (33, 36865), (59, 36700), (61, 36691), (62, 36685), (69, 36607), (80, 36547), (84, 36505), (87, 36493), (92, 36457), (95, 36403), (108, 36310), (112, 36271), (114, 36256),

Gene: Rubeus\_49 Start: 34857, Stop: 34042, Start Num: 13

Candidate Starts for Rubeus\_49:

(Start: 13 @34857 has 143 MA's), (Start: 16 @34842 has 34 MA's), (Start: 24 @34803 has 1 MA's), (33, 34722), (61, 34548), (62, 34542), (69, 34464), (80, 34404), (84, 34362), (87, 34350), (92, 34314), (95, 34260), (112, 34128), (114, 34113),

Gene: Rufus\_50 Start: 36627, Stop: 35812, Start Num: 13

Candidate Starts for Rufus\_50:

(Start: 13 @36627 has 143 MA's), (Start: 16 @36612 has 34 MA's), (Start: 24 @36573 has 1 MA's), (33, 36492), (61, 36318), (62, 36312), (67, 36285), (69, 36234), (80, 36174), (84, 36132), (87, 36120), (92, 36084), (95, 36030), (112, 35898), (114, 35883),

Gene: Ruotula\_52 Start: 38093, Stop: 37302, Start Num: 13

Candidate Starts for Ruotula\_52:

(Start: 13 @38093 has 143 MA's), (29, 37991), (30, 37985), (51, 37877), (61, 37784), (62, 37778), (72, 37697), (75, 37670), (79, 37667), (84, 37622), (87, 37610), (92, 37574), (108, 37427), (114, 37373),

Gene: Rutherferd\_51 Start: 37473, Stop: 36682, Start Num: 13

Candidate Starts for Rutherferd\_51:

(Start: 13 @37473 has 143 MA's), (Start: 16 @37458 has 34 MA's), (Start: 24 @37419 has 1 MA's), (33, 37338), (59, 37173), (61, 37164), (62, 37158), (67, 37131), (72, 37077), (83, 37023), (92, 36954), (95, 36900), (112, 36768), (114, 36753),

Gene: STLscum\_52 Start: 37869, Stop: 37078, Start Num: 13

Candidate Starts for STLscum\_52:

(Start: 13 @37869 has 143 MA's), (Start: 24 @37815 has 1 MA's), (33, 37734), (59, 37569), (61, 37560), (62, 37554), (67, 37527), (72, 37473), (83, 37419), (92, 37350), (95, 37296), (108, 37203), (112, 37164), (114, 37149),

Gene: Sagefire\_52 Start: 37842, Stop: 37051, Start Num: 13

Candidate Starts for Sagefire\_52:

(Start: 13 @37842 has 143 MA's), (29, 37740), (30, 37734), (51, 37626), (61, 37533), (62, 37527), (72, 37446), (75, 37419), (79, 37416), (84, 37371), (87, 37359), (92, 37323), (112, 37137), (114, 37122),

Gene: Salz\_52 Start: 35722, Stop: 35030, Start Num: 15

Candidate Starts for Salz\_52:

(Start: 15 @35722 has 102 MA's), (19, 35713), (28, 35644), (40, 35572), (77, 35311), (93, 35185),

Gene: SarFire\_47 Start: 36194, Stop: 35403, Start Num: 13

Candidate Starts for SarFire\_47:

(Start: 13 @36194 has 143 MA's), (Start: 24 @36140 has 1 MA's), (33, 36059), (59, 35894), (61, 35885), (62, 35879), (67, 35852), (72, 35798), (83, 35744), (92, 35675), (95, 35621), (108, 35528), (112, 35489), (114, 35474),

Gene: Scowl\_50 Start: 37130, Stop: 36339, Start Num: 13

Candidate Starts for Scowl\_50:

(Start: 13 @37130 has 143 MA's), (Start: 24 @37076 has 1 MA's), (33, 36995), (59, 36830), (61, 36821), (62, 36815), (67, 36788), (72, 36734), (83, 36680), (92, 36611), (95, 36557), (108, 36464), (112, 36425), (114, 36410),

Gene: Seabiscuit\_52 Start: 36733, Stop: 35942, Start Num: 13

Candidate Starts for Seabiscuit\_52:

(Start: 13 @36733 has 143 MA's), (29, 36631), (30, 36625), (38, 36580), (51, 36517), (61, 36424), (80, 36304), (84, 36262), (87, 36250), (92, 36214), (108, 36067), (112, 36028), (114, 36013),

Gene: Seanderson\_51 Start: 37551, Stop: 36742, Start Num: 14

Candidate Starts for Seanderson\_51:

(Start: 14 @37551 has 46 MA's), (30, 37449), (34, 37416), (36, 37413), (45, 37371), (59, 37257), (61, 37248), (62, 37242), (69, 37164), (80, 37104), (84, 37062), (87, 37050), (92, 37014), (108, 36867), (112, 36828), (114, 36813),

Gene: SemperFi\_55 Start: 37012, Stop: 36320, Start Num: 15

Candidate Starts for SemperFi\_55:

(1, 37513), (Start: 15 @37012 has 102 MA's), (23, 36964), (41, 36847), (73, 36619), (78, 36589), (82, 36574), (83, 36565), (94, 36445),

Gene: Serenity\_54 Start: 35976, Stop: 35272, Start Num: 15

Candidate Starts for Serenity\_54:

(9, 36150), (Start: 15 @35976 has 102 MA's), (80, 35553), (88, 35493), (98, 35367), (111, 35304),

Gene: Sham4\_53 Start: 35750, Stop: 35058, Start Num: 15

Candidate Starts for Sham4\_53:

(Start: 15 @35750 has 102 MA's), (19, 35741), (28, 35672), (40, 35600), (77, 35339), (93, 35213),

Gene: Sibs6\_50 Start: 35458, Stop: 34673, Start Num: 14

Candidate Starts for Sibs6\_50:

(Start: 14 @35458 has 46 MA's), (30, 35356), (34, 35323), (36, 35320), (45, 35278), (59, 35164), (61, 35155), (67, 35122), (72, 35068), (92, 34945), (95, 34891), (108, 34798), (112, 34759), (114, 34744),

Gene: SkiPole\_54 Start: 37590, Stop: 36799, Start Num: 13

Candidate Starts for SkiPole\_54:

(Start: 13 @37590 has 143 MA's), (Start: 24 @37536 has 1 MA's), (33, 37455), (59, 37290), (61, 37281), (62, 37275), (67, 37248), (72, 37194), (83, 37140), (92, 37071), (95, 37017), (108, 36924), (112, 36885), (114, 36870),

Gene: Slagathor\_51 Start: 36881, Stop: 36090, Start Num: 13

Candidate Starts for Slagathor\_51:

(Start: 13 @36881 has 143 MA's), (29, 36779), (30, 36773), (51, 36665), (61, 36572), (62, 36566), (72, 36485), (75, 36458), (79, 36455), (84, 36410), (87, 36398), (92, 36362), (108, 36215), (112, 36176), (114, 36161),

Gene: Smairt\_51 Start: 37162, Stop: 36377, Start Num: 14

Candidate Starts for Smairt\_51:

(Start: 14 @37162 has 46 MA's), (30, 37060), (34, 37027), (36, 37024), (45, 36982), (59, 36868), (61, 36859), (62, 36853), (67, 36826), (72, 36772), (75, 36745), (79, 36742), (92, 36649), (95, 36595), (108, 36502), (112, 36463), (114, 36448),

Gene: Smeagan\_57 Start: 37473, Stop: 36787, Start Num: 15

Candidate Starts for Smeagan\_57:

(1, 37974), (10, 37635), (Start: 15 @37473 has 102 MA's), (42, 37302), (45, 37290), (47, 37284), (64, 37152), (73, 37083),

Gene: Smeagol\_51 Start: 38091, Stop: 37276, Start Num: 13

Candidate Starts for Smeagol\_51:

(Start: 13 @38091 has 143 MA's), (Start: 16 @38076 has 34 MA's), (Start: 24 @38037 has 1 MA's), (33, 37956), (61, 37782), (62, 37776), (69, 37698), (92, 37548), (108, 37401), (112, 37362), (114, 37347),

Gene: SnapTap\_54 Start: 36823, Stop: 36131, Start Num: 15

Candidate Starts for SnapTap\_54:

(1, 37324), (Start: 15 @36823 has 102 MA's), (23, 36775), (41, 36658), (73, 36430), (78, 36400), (82, 36385), (83, 36376), (94, 36256),

Gene: Snape\_53 Start: 35742, Stop: 35050, Start Num: 15

Candidate Starts for Snape\_53:

(Start: 15 @35742 has 102 MA's), (19, 35733), (28, 35664), (40, 35592), (77, 35331), (93, 35205),

Gene: Snazzy\_48 Start: 36267, Stop: 35476, Start Num: 13

Candidate Starts for Snazzy\_48:

(Start: 13 @36267 has 143 MA's), (Start: 24 @36213 has 1 MA's), (33, 36132), (59, 35967), (61, 35958), (62, 35952), (67, 35925), (72, 35871), (83, 35817), (92, 35748), (95, 35694), (108, 35601), (112, 35562), (114, 35547),

Gene: Solon\_48 Start: 36525, Stop: 35734, Start Num: 13

Candidate Starts for Solon\_48:

(Start: 13 @36525 has 143 MA's), (29, 36423), (30, 36417), (51, 36309), (61, 36216), (62, 36210), (84, 36054), (87, 36042), (92, 36006), (108, 35859), (112, 35820), (114, 35805),

Gene: SororFago\_56 Start: 37846, Stop: 37094, Start Num: 16

Candidate Starts for SororFago\_56:

(Start: 16 @37846 has 34 MA's), (28, 37768), (43, 37681), (49, 37660), (51, 37645), (64, 37537), (65, 37531), (79, 37432), (84, 37387), (93, 37321),

Gene: SpikeBT\_49 Start: 36885, Stop: 36094, Start Num: 13

Candidate Starts for SpikeBT\_49:

(Start: 13 @36885 has 143 MA's), (Start: 16 @36870 has 34 MA's), (Start: 24 @36831 has 1 MA's), (33, 36750), (59, 36585), (61, 36576), (62, 36570), (67, 36543), (72, 36489), (75, 36462), (79, 36459), (92, 36366), (95, 36312), (108, 36219), (112, 36180), (114, 36165),

Gene: Squee\_50 Start: 37222, Stop: 36431, Start Num: 13

Candidate Starts for Squee\_50:

(Start: 13 @37222 has 143 MA's), (Start: 24 @37168 has 1 MA's), (33, 37087), (59, 36922), (61, 36913), (62, 36907), (67, 36880), (72, 36826), (83, 36772), (92, 36703), (108, 36556), (112, 36517), (114, 36502),

Gene: StarStuff\_56 Start: 36634, Stop: 35927, Start Num: 15

Candidate Starts for StarStuff\_56:

(Start: 15 @36634 has 102 MA's), (20, 36607), (23, 36586), (41, 36469), (65, 36310), (79, 36211), (82, 36196), (94, 36067), (98, 36022),

Gene: Steamy\_50 Start: 36314, Stop: 35643, Start Num: 16

Candidate Starts for Steamy\_50:

(3, 36650), (Start: 16 @36314 has 34 MA's), (28, 36236), (35, 36185), (43, 36149), (60, 36023), (65, 35999), (76, 35903), (93, 35789), (101, 35705),

Gene: StewieG\_48 Start: 34045, Stop: 33254, Start Num: 13

Candidate Starts for StewieG\_48:

(Start: 13 @34045 has 143 MA's), (Start: 24 @33991 has 1 MA's), (33, 33910), (59, 33745), (61, 33736), (62, 33730), (67, 33703), (72, 33649), (83, 33595), (92, 33526), (95, 33472), (108, 33379), (112, 33340), (114, 33325),

Gene: StrongArm\_49 Start: 37728, Stop: 36937, Start Num: 13

Candidate Starts for StrongArm\_49:

(Start: 13 @37728 has 143 MA's), (Start: 24 @37674 has 1 MA's), (33, 37593), (59, 37428), (61, 37419), (62, 37413), (67, 37386), (72, 37332), (83, 37278), (92, 37209), (95, 37155), (112, 37023), (114, 37008),

Gene: Sumter\_46 Start: 36230, Stop: 35439, Start Num: 13

Candidate Starts for Sumter\_46:

(Start: 13 @36230 has 143 MA's), (Start: 24 @36176 has 1 MA's), (33, 36095), (59, 35930), (61, 35921), (62, 35915), (72, 35834), (83, 35780), (92, 35711), (112, 35525), (114, 35510),

Gene: Sunshine924\_50 Start: 36142, Stop: 35357, Start Num: 14

Candidate Starts for Sunshine924\_50:

(Start: 14 @36142 has 46 MA's), (30, 36040), (34, 36007), (36, 36004), (45, 35962), (61, 35839), (62, 35833), (67, 35806), (72, 35752), (75, 35725), (79, 35722), (92, 35629), (95, 35575), (108, 35482), (112, 35443), (114, 35428),

Gene: Superchunk\_52 Start: 35279, Stop: 34578, Start Num: 15

Candidate Starts for Superchunk\_52:

(3, 35612), (Start: 15 @35279 has 102 MA's), (19, 35261), (23, 35234), (25, 35213), (41, 35117), (43, 35108), (57, 35006), (65, 34958), (80, 34859), (97, 34676),

Gene: SweetiePie\_54 Start: 36955, Stop: 36263, Start Num: 15

Candidate Starts for SweetiePie\_54:

(1, 37456), (Start: 15 @36955 has 102 MA's), (23, 36907), (41, 36790), (73, 36562), (78, 36532), (82, 36517), (83, 36508), (94, 36388),

Gene: SwirlSquare\_59 Start: 36144, Stop: 35443, Start Num: 15

Candidate Starts for SwirlSquare\_59:

(Start: 15 @36144 has 102 MA's), (19, 36126), (23, 36099), (41, 35982), (56, 35874), (72, 35757), (80, 35724), (97, 35541), (111, 35475),

Gene: SwissCheese\_51 Start: 36855, Stop: 36070, Start Num: 14

Candidate Starts for SwissCheese\_51:

(Start: 14 @36855 has 46 MA's), (28, 36768), (30, 36753), (34, 36720), (36, 36717), (45, 36675), (59, 36561), (61, 36552), (62, 36546), (67, 36519), (72, 36465), (83, 36411), (92, 36342), (95, 36288), (108, 36195), (112, 36156), (114, 36141),

Gene: Switzer\_51 Start: 36802, Stop: 36011, Start Num: 13

Candidate Starts for Switzer\_51:

(Start: 13 @36802 has 143 MA's), (Start: 16 @36787 has 34 MA's), (33, 36667), (59, 36502), (61, 36493), (62, 36487), (67, 36460), (72, 36406), (83, 36352), (92, 36283), (95, 36229), (108, 36136), (112, 36097), (114, 36082),

Gene: Swole\_50 Start: 36024, Stop: 35239, Start Num: 14

Candidate Starts for Swole\_50:

(Start: 14 @36024 has 46 MA's), (30, 35922), (34, 35889), (36, 35886), (45, 35844), (59, 35730), (61, 35721), (62, 35715), (67, 35688), (72, 35634), (83, 35580), (92, 35511), (95, 35457), (108, 35364), (112, 35325), (114, 35310),

Gene: Target\_50 Start: 35434, Stop: 34643, Start Num: 13

Candidate Starts for Target\_50:

(Start: 13 @35434 has 143 MA's), (Start: 24 @35380 has 1 MA's), (33, 35299), (59, 35134), (61, 35125), (62, 35119), (67, 35092), (72, 35038), (83, 34984), (92, 34915), (95, 34861), (108, 34768), (112, 34729), (114, 34714),

Gene: TarsusIV\_53 Start: 36780, Stop: 36112, Start Num: 16

Candidate Starts for TarsusIV\_53:

(Start: 16 @36780 has 34 MA's), (23, 36744), (54, 36564), (65, 36465), (74, 36390), (88, 36303), (93, 36255),

Gene: Tasp14\_51 Start: 37127, Stop: 36336, Start Num: 13

Candidate Starts for Tasp14\_51:

(Start: 13 @37127 has 143 MA's), (Start: 16 @37112 has 34 MA's), (Start: 24 @37073 has 1 MA's), (33, 36992), (59, 36827), (61, 36818), (62, 36812), (67, 36785), (72, 36731), (83, 36677), (92, 36608), (112, 36422), (114, 36407),

Gene: Teodoridan\_48 Start: 36321, Stop: 35530, Start Num: 13

Candidate Starts for Teodoridan\_48:

(Start: 13 @36321 has 143 MA's), (Start: 24 @36267 has 1 MA's), (33, 36186), (59, 36021), (61, 36012), (62, 36006), (67, 35979), (72, 35925), (83, 35871), (92, 35802), (95, 35748), (108, 35655), (112, 35616), (114, 35601),

Gene: TheloniousMonk\_50 Start: 37889, Stop: 37098, Start Num: 13

Candidate Starts for TheloniousMonk\_50:

(Start: 13 @37889 has 143 MA's), (29, 37787), (30, 37781), (51, 37673), (61, 37580), (62, 37574), (84, 37418), (87, 37406), (92, 37370), (112, 37184), (114, 37169),

Gene: Thor\_47 Start: 35552, Stop: 34761, Start Num: 13

Candidate Starts for Thor\_47:

(Start: 13 @35552 has 143 MA's), (Start: 24 @35498 has 1 MA's), (33, 35417), (59, 35252), (61, 35243), (62, 35237), (67, 35210), (72, 35156), (83, 35102), (92, 35033), (95, 34979), (108, 34886), (112, 34847), (114, 34832),

Gene: Timothy\_53 Start: 35719, Stop: 35027, Start Num: 15

Candidate Starts for Timothy\_53:

(Start: 15 @35719 has 102 MA's), (19, 35710), (28, 35641), (40, 35569), (77, 35308), (93, 35182),

Gene: TinyTimmy\_52 Start: 35768, Stop: 35076, Start Num: 15

Candidate Starts for TinyTimmy\_52:

(Start: 15 @35768 has 102 MA's), (19, 35759), (28, 35690), (40, 35618), (77, 35357), (93, 35231),

Gene: TopsytheTRex\_50 Start: 36046, Stop: 35342, Start Num: 15

Candidate Starts for TopsytheTRex\_50:

(9, 36220), (Start: 15 @36046 has 102 MA's), (80, 35623), (88, 35563), (98, 35437), (111, 35374),

Gene: Tomathan\_56 Start: 36631, Stop: 35924, Start Num: 15

Candidate Starts for Tomathan\_56:

(4, 36916), (Start: 15 @36631 has 102 MA's), (20, 36604), (23, 36583), (41, 36466), (65, 36307), (79, 36208), (82, 36193), (94, 36064), (98, 36019),

Gene: Topgun\_49 Start: 36413, Stop: 35622, Start Num: 13

Candidate Starts for Topgun\_49:

(Start: 13 @36413 has 143 MA's), (Start: 24 @36359 has 1 MA's), (33, 36278), (59, 36113), (61, 36104), (62, 36098), (67, 36071), (72, 36017), (83, 35963), (92, 35894), (95, 35840), (108, 35747), (112, 35708), (114, 35693),

Gene: Tote\_45 Start: 33291, Stop: 32506, Start Num: 14

Candidate Starts for Tote\_45:

(Start: 14 @33291 has 46 MA's), (30, 33189), (34, 33156), (36, 33153), (45, 33111), (59, 32997), (61, 32988), (62, 32982), (67, 32955), (72, 32901), (83, 32847), (92, 32778), (95, 32724), (108, 32631), (112, 32592), (114, 32577),

Gene: Traft412\_52 Start: 37748, Stop: 36933, Start Num: 13

Candidate Starts for Traft412\_52:

(Start: 13 @37748 has 143 MA's), (Start: 16 @37733 has 34 MA's), (Start: 24 @37694 has 1 MA's), (33, 37613), (59, 37448), (61, 37439), (62, 37433), (69, 37355), (80, 37295), (84, 37253), (87, 37241), (92, 37205), (112, 37019), (114, 37004),

Gene: Treddle\_50 Start: 37502, Stop: 36711, Start Num: 13

Candidate Starts for Treddle\_50:

(Start: 13 @37502 has 143 MA's), (Start: 16 @37487 has 34 MA's), (33, 37367), (59, 37202), (61, 37193), (62, 37187), (72, 37106), (83, 37052), (92, 36983), (108, 36836), (112, 36797), (114, 36782),

Gene: Tripl3t\_49 Start: 37173, Stop: 36382, Start Num: 13

Candidate Starts for Tripl3t\_49:

(Start: 13 @37173 has 143 MA's), (Start: 16 @37158 has 34 MA's), (Start: 24 @37119 has 1 MA's), (33, 37038), (59, 36873), (61, 36864), (62, 36858), (67, 36831), (72, 36777), (83, 36723), (92, 36654), (108, 36507), (112, 36468), (114, 36453),

Gene: Trixie\_52 Start: 36877, Stop: 36206, Start Num: 16

Candidate Starts for Trixie\_52:

(Start: 16 @36877 has 34 MA's), (54, 36661), (79, 36463), (93, 36352),

Gene: Trooper\_55 Start: 37171, Stop: 36485, Start Num: 15

Candidate Starts for Trooper\_55:

(Start: 15 @37171 has 102 MA's), (19, 37153), (23, 37126), (Start: 24 @37123 has 1 MA's), (54, 36949), (65, 36850), (72, 36784), (73, 36781), (77, 36754), (93, 36634), (110, 36520),

Gene: Trouble\_52 Start: 38244, Stop: 37459, Start Num: 14

Candidate Starts for Trouble\_52:

(Start: 14 @38244 has 46 MA's), (30, 38142), (34, 38109), (36, 38106), (45, 38064), (59, 37950), (61, 37941), (62, 37935), (67, 37908), (72, 37854), (92, 37731), (95, 37677), (108, 37584), (112, 37545), (114, 37530),

Gene: Turbido\_55 Start: 37207, Stop: 36521, Start Num: 15

Candidate Starts for Turbido\_55:

(Start: 15 @37207 has 102 MA's), (42, 37036), (45, 37024), (47, 37018), (64, 36886), (73, 36817), (98, 36601),

Gene: Turj99\_48 Start: 36141, Stop: 35350, Start Num: 13

Candidate Starts for Turj99\_48:

(Start: 13 @36141 has 143 MA's), (Start: 24 @36087 has 1 MA's), (33, 36006), (59, 35841), (61, 35832), (62, 35826), (67, 35799), (72, 35745), (83, 35691), (92, 35622), (95, 35568), (108, 35475), (112, 35436), (114, 35421),

Gene: TwoPeat\_49 Start: 36615, Stop: 35830, Start Num: 14

Candidate Starts for TwoPeat\_49:

(Start: 14 @36615 has 46 MA's), (30, 36513), (34, 36480), (36, 36477), (45, 36435), (59, 36321), (61, 36312), (62, 36306), (67, 36279), (72, 36225), (83, 36171), (92, 36102), (95, 36048), (108, 35955), (112, 35916), (114, 35901),

Gene: U2\_49 Start: 36782, Stop: 35991, Start Num: 13

Candidate Starts for U2\_49:

(Start: 13 @36782 has 143 MA's), (29, 36680), (30, 36674), (38, 36629), (51, 36566), (61, 36473), (80, 36353), (84, 36311), (87, 36299), (92, 36263), (108, 36116), (112, 36077), (114, 36062),

Gene: Updawg\_55 Start: 37053, Stop: 36358, Start Num: 15

Candidate Starts for Updawg\_55:

(7, 37260), (Start: 15 @37053 has 102 MA's), (41, 36891), (54, 36831), (65, 36732), (73, 36663), (77, 36636), (82, 36618), (93, 36516),

Gene: VA6\_55 Start: 37267, Stop: 36506, Start Num: 15

Candidate Starts for VA6\_55:

(10, 37432), (Start: 15 @37267 has 102 MA's), (Start: 24 @37213 has 1 MA's), (32, 37132), (64, 36946), (65, 36940), (80, 36850), (104, 36634), (115, 36553), (117, 36514),

Gene: VC3\_57 Start: 37029, Stop: 36343, Start Num: 15

Candidate Starts for VC3\_57:

(Start: 15 @37029 has 102 MA's), (35, 36897), (45, 36855), (48, 36846), (49, 36840), (55, 36774), (64, 36717), (65, 36711), (93, 36504),

Gene: Violet\_47 Start: 36559, Stop: 35768, Start Num: 13

Candidate Starts for Violet\_47:

(Start: 13 @36559 has 143 MA's), (Start: 16 @36544 has 34 MA's), (Start: 24 @36505 has 1 MA's), (33, 36424), (59, 36259), (61, 36250), (62, 36244), (67, 36217), (72, 36163), (83, 36109), (92, 36040), (95, 35986), (108, 35893), (112, 35854), (114, 35839),

Gene: Watermelon\_50 Start: 36951, Stop: 36160, Start Num: 13

Candidate Starts for Watermelon\_50:

(Start: 13 @36951 has 143 MA's), (Start: 16 @36936 has 34 MA's), (Start: 24 @36897 has 1 MA's), (33, 36816), (59, 36651), (61, 36642), (62, 36636), (72, 36555), (83, 36501), (92, 36432), (95, 36378), (108, 36285), (112, 36246), (114, 36231),

Gene: WeiHuaDA\_56 Start: 37682, Stop: 37011, Start Num: 16

Candidate Starts for WeiHuaDA\_56:

(Start: 16 @37682 has 34 MA's), (54, 37466), (70, 37319), (79, 37268), (83, 37244), (89, 37187), (93, 37157), (101, 37073),

Gene: Whabigail7\_55 Start: 37192, Stop: 36506, Start Num: 15

Candidate Starts for Whabigail7\_55:

(Start: 15 @37192 has 102 MA's), (42, 37021), (45, 37009), (47, 37003), (50, 36991), (64, 36871), (73, 36802),

Gene: Wheeler\_50 Start: 36995, Stop: 36204, Start Num: 13

Candidate Starts for Wheeler\_50:

(Start: 13 @36995 has 143 MA's), (29, 36893), (30, 36887), (51, 36779), (61, 36686), (72, 36599), (75, 36572), (79, 36569), (84, 36524), (87, 36512), (92, 36476), (108, 36329), (112, 36290), (114, 36275),

Gene: WideWale\_55 Start: 37053, Stop: 36358, Start Num: 15

Candidate Starts for WideWale\_55:

(7, 37260), (Start: 15 @37053 has 102 MA's), (41, 36891), (54, 36831), (65, 36732), (73, 36663), (77, 36636), (82, 36618), (93, 36516),

Gene: Wilkins\_49 Start: 36343, Stop: 35552, Start Num: 13

Candidate Starts for Wilkins\_49:

(Start: 13 @36343 has 143 MA's), (Start: 24 @36289 has 1 MA's), (33, 36208), (59, 36043), (61, 36034), (62, 36028), (67, 36001), (72, 35947), (83, 35893), (92, 35824), (95, 35770), (108, 35677), (112, 35638), (114, 35623),

Gene: XianYue\_53 Start: 36548, Stop: 35871, Start Num: 15

Candidate Starts for XianYue\_53:

(10, 36713), (Start: 15 @36548 has 102 MA's), (Start: 24 @36506 has 1 MA's), (39, 36407), (41, 36392), (54, 36332), (65, 36233), (73, 36161), (77, 36134), (93, 36020),

Gene: Yecey3\_55 Start: 36455, Stop: 35679, Start Num: 16

Candidate Starts for Yecey3\_55:

(Start: 16 @36455 has 34 MA's), (26, 36389), (30, 36362), (43, 36290), (49, 36269), (51, 36254), (93, 35930), (96, 35873), (105, 35825), (107, 35810), (113, 35765), (117, 35687),

Gene: Zeeculate\_47 Start: 36604, Stop: 35813, Start Num: 13

Candidate Starts for Zeeculate\_47:

(Start: 13 @36604 has 143 MA's), (Start: 16 @36589 has 34 MA's), (Start: 24 @36550 has 1 MA's), (33, 36469), (59, 36304), (61, 36295), (62, 36289), (72, 36208), (83, 36154), (92, 36085), (108, 35938), (112, 35899), (114, 35884),

Gene: Zephyr\_49 Start: 36444, Stop: 35653, Start Num: 13

Candidate Starts for Zephyr\_49:

(Start: 13 @36444 has 143 MA's), (Start: 16 @36429 has 34 MA's), (Start: 24 @36390 has 1 MA's), (33, 36309), (59, 36144), (61, 36135), (62, 36129), (67, 36102), (72, 36048), (83, 35994), (92, 35925), (95, 35871), (108, 35778), (112, 35739), (114, 35724),

Gene: Zeuska\_48 Start: 36535, Stop: 35744, Start Num: 13

Candidate Starts for Zeuska\_48:

(Start: 13 @36535 has 143 MA's), (Start: 24 @36481 has 1 MA's), (33, 36400), (59, 36235), (61, 36226), (62, 36220), (67, 36193), (72, 36139), (83, 36085), (92, 36016), (95, 35962), (108, 35869), (112, 35830), (114, 35815),

Gene: Zimmer\_51 Start: 37492, Stop: 36821, Start Num: 16



Candidate Starts for Zimmer\_51:

(Start: 16 @37492 has 34 MA's), (43, 37327), (49, 37306), (51, 37291), (65, 37177), (72, 37111), (73, 37108), (79, 37078), (93, 36967),