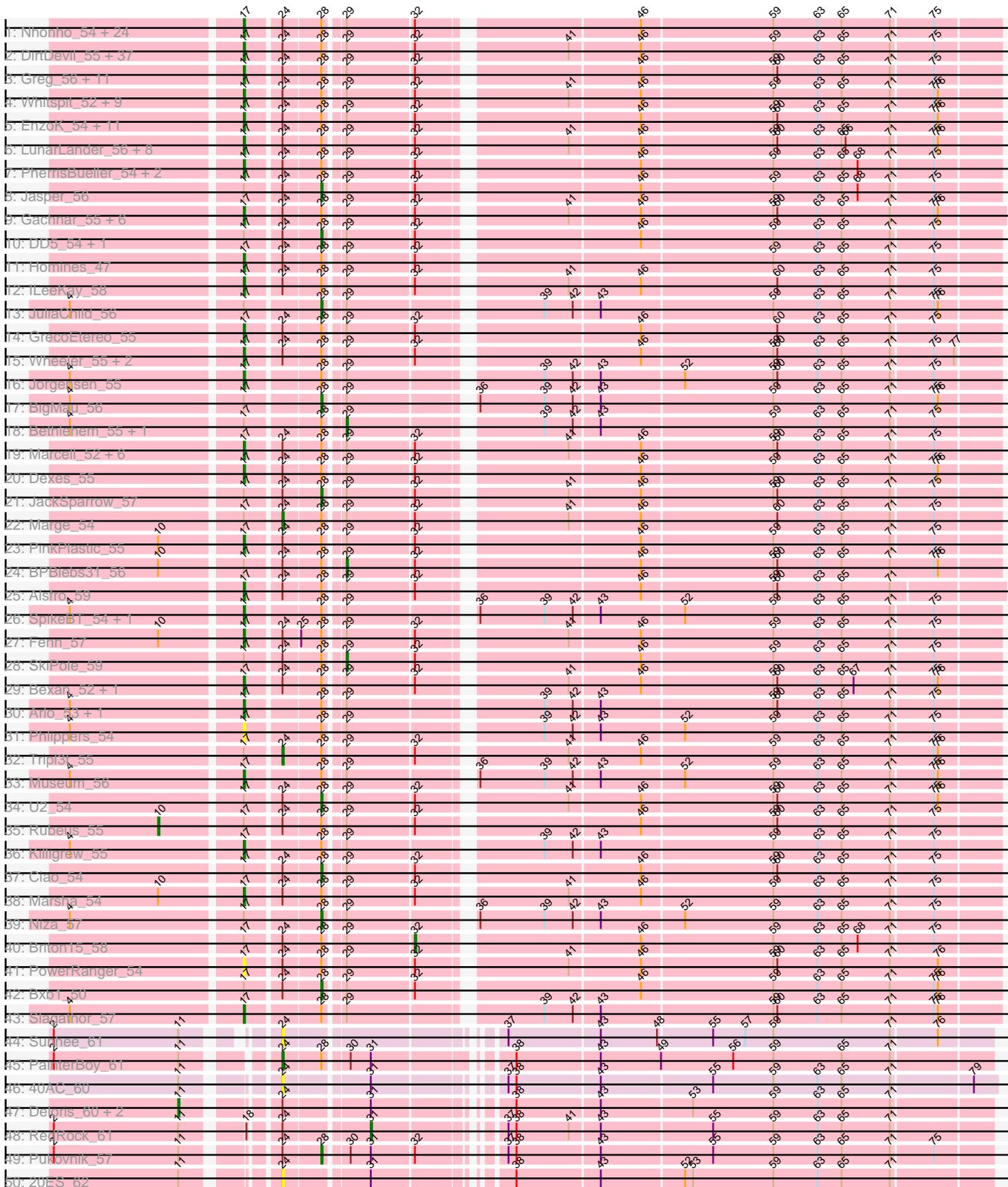
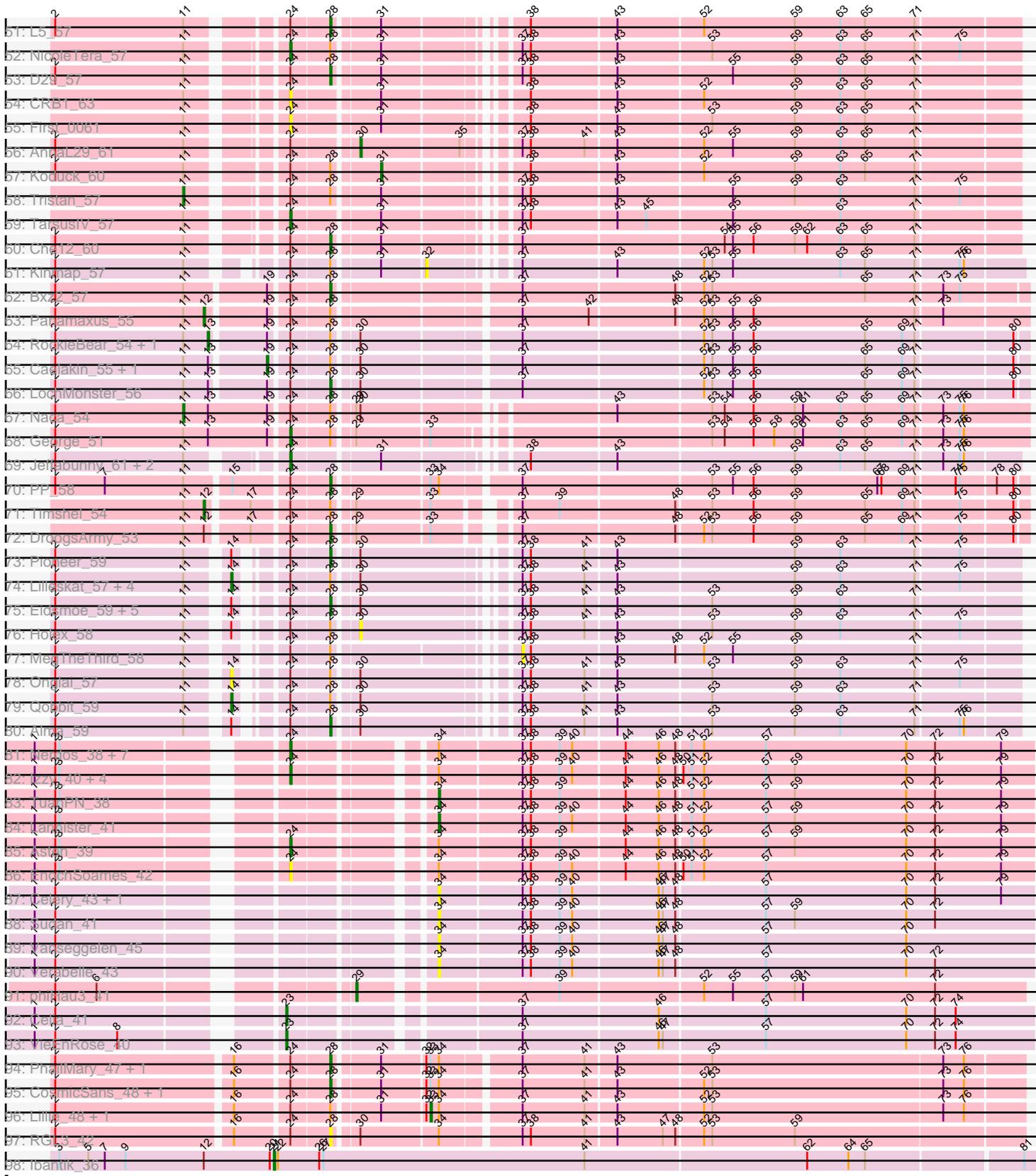


Pham 290805





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 290805 Report

This analysis was run 03/28/26 on database version 641.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 290805 has 249 members, 43 are drafts.

Phages represented in each track:

- Track 1 : Nhonho\_54, MetalQZJ\_53, ProMouse\_56, Corvo\_55, SarFire\_52, MaryBeth\_54, Rhynn\_53, Crispicous1\_52, Zeeculate\_53, BarrowTuph\_55, Levia\_52, BK1\_50, Hope4ever\_56, Barriga\_55, A6\_50, Pepe\_51, PhineBark\_54, Papez\_57, Teodoridan\_53, Bruns\_54, Lamina13\_55, STLscum\_57, Smeagol\_57, Thor\_52, Tasp14\_56
- Track 2 : DirtDevil\_55, Beatrix\_54, Hermia\_55, Nerujay\_57, McSinger\_55, Forsytheast\_54, Bircsak\_53, Licorice\_57, StewieG\_53, DreamCatcher\_58, BluSpix\_53, PascalRango\_55, Kanely\_57, Noxious\_54, Dulcie\_55, PacerPaul\_54, IgnatiusPatJac\_55, Parliament\_54, Edtherson\_54, KikiBouba\_55, Altman\_58, Francis47\_53, GroundGoblin\_55, Treddle\_55, Gompeii16\_53, Applejack\_49, CatBus\_54, Moose\_54, Aldrich\_54, Marchy\_49, Monet\_57, Seabiscuit\_57, SwissCheese\_56, ChristmasHams\_50, HarryOW\_54, Payneful\_54, Agaliana\_50, McGuire\_56
- Track 3 : Greg\_56, Froghopper\_52, Fajezeel\_56, Alvin\_54, Sandaddy\_53, MilleFeuille\_51, Hami1\_48, Pinto\_55, Ajay\_56, Pippin\_56, Doom\_53, Sorpresa\_53
- Track 4 : Whitspit\_52, Smairt\_57, Rutherferd\_56, Solon\_53, Adahisdi\_55, Ashballer\_57, Aeneas\_57, Mule\_52, PhrostyMug\_54, JC27\_57
- Track 5 : EnzoK\_54, Paphu\_53, Gyzlar\_51, Snazzy\_54, GMonster\_52, Makemake\_55, Peterson\_59, Pelly\_55, Marco3\_58, Kenmech\_58, Target\_55, LilBib\_55
- Track 6 : LunarLander\_56, Graduation\_58, Puppet\_55, Dynamix\_56, BeesKnees\_57, Wilkins\_54, Topgun\_54, Oogway\_54, Cueylyss\_56
- Track 7 : PherrisBueller\_54, Dreamboat\_56, Scowl\_55
- Track 8 : Jasper\_56
- Track 9 : Gachnar\_55, Dussy\_56, Bigchungu\_55, Paraselene\_52, Abbyshoes\_57, Sumter\_51, Ichabod\_58
- Track 10 : DD5\_54, Lockley\_53
- Track 11 : Homines\_47
- Track 12 : ILeeKay\_58
- Track 13 : JuliaChild\_56
- Track 14 : GrecoEtereo\_55
- Track 15 : Wheeler\_55, HanShotFirst\_55, Sanya\_52
- Track 16 : Jorgensen\_55

- Track 17 : BigMau\_56
- Track 18 : Bethlehem\_55, KSSJEB\_54
- Track 19 : Marcell\_52, CactusRose\_52, QTRlifeCrisis\_54, Blackflame\_53, Blesser\_53, CartmannCramer\_54, Mryolo\_52
- Track 20 : Dexes\_55
- Track 21 : JackSparrow\_57
- Track 22 : Marge\_54
- Track 23 : PinkPlastic\_55
- Track 24 : BPBiabs31\_56
- Track 25 : Alsfro\_59
- Track 26 : SpikeBT\_54, Ringer\_55
- Track 27 : Fenn\_57
- Track 28 : SkiPole\_59
- Track 29 : Bexan\_52, StrongArm\_53
- Track 30 : Arlo\_53, TwoPeat\_56
- Track 31 : Phlippers\_54
- Track 32 : Tripl3t\_55
- Track 33 : Museum\_56
- Track 34 : U2\_54
- Track 35 : Rubeus\_55
- Track 36 : Killigrew\_55
- Track 37 : Ciao\_54
- Track 38 : Marsha\_54
- Track 39 : Niza\_57
- Track 40 : Briton15\_58
- Track 41 : PowerRanger\_54
- Track 42 : Bxb1\_50
- Track 43 : Slagathor\_57
- Track 44 : Sunhee\_61
- Track 45 : PainterBoy\_61
- Track 46 : 40AC\_60
- Track 47 : Deloris\_60, VA6\_60, AN3\_62
- Track 48 : RedRock\_61
- Track 49 : Pukovnik\_57
- Track 50 : 20ES\_62
- Track 51 : L5\_57
- Track 52 : NicoleTera\_57
- Track 53 : D29\_57
- Track 54 : CRB1\_63
- Track 55 : First\_0061
- Track 56 : AnnaL29\_61
- Track 57 : Koduck\_60
- Track 58 : Tristan\_57
- Track 59 : TarsusIV\_57
- Track 60 : Che12\_60
- Track 61 : Kinmap\_57
- Track 62 : Bxz2\_57
- Track 63 : Panamaxus\_55
- Track 64 : RockieBear\_54, Skipitt\_54
- Track 65 : Caelakin\_55, Eagle\_55
- Track 66 : LochMonster\_56
- Track 67 : Naca\_54
- Track 68 : George\_51

- Track 69 : Jeffabunny\_61, Blue7\_62, Hammer\_61
- Track 70 : PP\_58
- Track 71 : Timshel\_54
- Track 72 : DroogsArmy\_53
- Track 73 : Pioneer\_59
- Track 74 : Lilleskat\_57, Beemo\_59, EdogawaKiddo\_57, Scherzo\_59, Sachima\_56
- Track 75 : Eidsmoe\_59, PackMan\_58, Myxus\_59, HortumSL17\_59, Conquerage\_59, Catalina\_60
- Track 76 : Horex\_58
- Track 77 : MegTheThird\_58
- Track 78 : Onglai\_57
- Track 79 : Qobbit\_59
- Track 80 : Alma\_59
- Track 81 : Nerdos\_38, Caliburn\_39, SunsetPointe\_39, Unstoppable\_39, Leviticus\_39, Legacy\_39, Aaronocolus\_39, Hydra\_41
- Track 82 : Izzy\_40, BryanRecycles\_40, Eddasa\_40, Rusticus\_40, Jash\_40
- Track 83 : TuanPN\_38
- Track 84 : Lannister\_41
- Track 85 : Asten\_39
- Track 86 : EnochSoames\_42
- Track 87 : Celery\_43, phiCAM\_38
- Track 88 : Sudan\_41
- Track 89 : Vanseggelen\_45
- Track 90 : Verabelle\_43
- Track 91 : phiHau3\_41
- Track 92 : Celia\_41
- Track 93 : VieEnRose\_40
- Track 94 : PhailMary\_47, BobbyDazzler\_48
- Track 95 : CosmicSans\_48, RER2\_41
- Track 96 : Lillie\_48, Rhodalysa\_48
- Track 97 : RGL3\_42
- Track 98 : Ibantik\_36

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

The start number called the most often in the published annotations is 17, it was called in 124 of the 206 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- A6\_50, Abbyshoes\_57, Adahisdi\_55, Aeneas\_57, Agaliana\_50, Ajay\_56, Aldrich\_54, AIsfro\_59, Altman\_58, Alvin\_54, Applejack\_49, Arlo\_53, Ashballer\_57, BK1\_50, Barriga\_55, BarrowTuph\_55, Beatrix\_54, BeesKnees\_57, Bexan\_52, Bigchungu\_55, Bircsak\_53, Blackflame\_53, Blesser\_53, BluSpix\_53, Bruns\_54, CactusRose\_52, CartmannCramer\_54, CatBus\_54, ChristmasHams\_50, Corvo\_55, Crispicous1\_52, Cueylyss\_56, Dexes\_55, DirtDevil\_55, Doom\_53, DreamCatcher\_58, Dreamboat\_56, Dulcie\_55, Dussy\_56, Dynamix\_56, Edtherson\_54, EnzoK\_54, Fajezeel\_56, Fenn\_57, Forsytheast\_54, Francis47\_53, Froghopper\_52, GMonster\_52, Gachnar\_55, Gompeii16\_53, Graduation\_58, GrecoEtereo\_55, Greg\_56, GroundGoblin\_55, Gyzlar\_51, Hami1\_48, HanShotFirst\_55, HarryOW\_54, Hermia\_55, Homines\_47, Hope4ever\_56,

ILeeKay\_58, Ichabod\_58, IgnatiusPatJac\_55, JC27\_57, Jorgensen\_55, Kanely\_57, Kenmech\_58, KikiBouba\_55, Killigrew\_55, Lamina13\_55, Levia\_52, Licorice\_57, LilBib\_55, LunarLander\_56, Makemake\_55, Marcell\_52, Marchy\_49, Marco3\_58, Marsha\_54, MaryBeth\_54, McGuire\_56, McSinger\_55, MetalQZJ\_53, MilleFeuille\_51, Monet\_57, Moose\_54, Mryolo\_52, Mule\_52, Museum\_56, Nerujay\_57, Nhonho\_54, Noxious\_54, Oogway\_54, PacerPaul\_54, Papez\_57, Paphu\_53, Paraselene\_52, Parliament\_54, PascalRango\_55, Payneful\_54, Pelly\_55, Pepe\_51, Peterson\_59, PherrisBueller\_54, PhineBark\_54, Phlippers\_54, PhrostyMug\_54, PinkPlastic\_55, Pinto\_55, Pippin\_56, PowerRanger\_54, ProMouse\_56, Puppet\_55, QTRlifeCrisis\_54, Rhynn\_53, Ringer\_55, Rutherford\_56, STLscum\_57, Sandaddy\_53, Sanya\_52, SarFire\_52, Scowl\_55, Seabiscuit\_57, Slagathor\_57, Smairt\_57, Smeagol\_57, Snazzy\_54, Solon\_53, Sorpresa\_53, SpikeBT\_54, StewieG\_53, StrongArm\_53, Sumter\_51, SwissCheese\_56, Target\_55, Tasp14\_56, Teodoridan\_53, Thor\_52, Topgun\_54, Treddle\_55, TwoPeat\_56, Wheeler\_55, Whitspit\_52, Wilkins\_54, Zeeculate\_53,

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

- BPBiebs31\_56, Bethlehem\_55, BigMau\_56, Briton15\_58, Bxb1\_50, Ciao\_54, DD5\_54, DroogsArmy\_53, JackSparrow\_57, Jasper\_56, JuliaChild\_56, KSSJEB\_54, Lockley\_53, Marge\_54, Niza\_57, Rubeus\_55, SkiPole\_59, Timshel\_54, Tripl3t\_55, U2\_54,

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

- 20ES\_62, 40AC\_60, AN3\_62, Aaronocolus\_39, Alma\_59, AnnaL29\_61, Asten\_39, Beemo\_59, Blue7\_62, BobbyDazzler\_48, BryanRecycles\_40, Bxz2\_57, CRB1\_63, Caelakin\_55, Caliburn\_39, Catalina\_60, Celery\_43, Celia\_41, Che12\_60, Conquerage\_59, CosmicSans\_48, D29\_57, Deloris\_60, Eagle\_55, Eddasa\_40, EdogawaKiddo\_57, Eidsmoe\_59, EnochSoames\_42, First\_0061, George\_51, Hammer\_61, Horex\_58, HortumSL17\_59, Hydra\_41, Ibantik\_36, Izzy\_40, Jash\_40, Jeffabunny\_61, Kinmap\_57, Koduck\_60, L5\_57, Lannister\_41, Legacy\_39, Leviticus\_39, Lilleskat\_57, Lillie\_48, LochMonster\_56, MegTheThird\_58, Myxus\_59, Naca\_54, Nerdos\_38, NicoleTera\_57, Onglai\_57, PP\_58, PackMan\_58, PainterBoy\_61, Panamaxus\_55, PhailMary\_47, Pioneer\_59, Pukovnik\_57, Qobbit\_59, RER2\_41, RGL3\_42, RedRock\_61, Rhodalysa\_48, RockieBear\_54, Rusticus\_40, Sachima\_56, Scherzo\_59, Skipitt\_54, Sudan\_41, Sunhee\_61, SunsetPointe\_39, TarsusIV\_57, Tristan\_57, TuanPN\_38, Unstoppable\_39, VA6\_60, Vanseggelen\_45, Verabelle\_43, VieEnRose\_40, phiCAM\_38, phiHau3\_41,

### Summary by start number:

Start 10:

- Found in 5 of 249 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 1 of 206
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Rubeus\_55 (A1),

Start 11:

- Found in 52 of 249 ( 20.9% ) of genes in pham
- Manual Annotations of this start: 5 of 206
- Called 9.6% of time when present
- Phage (with cluster) where this start called: AN3\_62 (A2), Deloris\_60 (A2), Naca\_54 (A5), Tristan\_57 (A2), VA6\_60 (A2),

Start 12:

- Found in 4 of 249 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 206
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Panamaxus\_55 (A3), Timshel\_54 (A7),

Start 13:

- Found in 7 of 249 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 1 of 206
- Called 28.6% of time when present
- Phage (with cluster) where this start called: RockieBear\_54 (A4), Skipitt\_54 (A4),

Start 14:

- Found in 16 of 249 ( 6.4% ) of genes in pham
- Manual Annotations of this start: 3 of 206
- Called 43.8% of time when present
- Phage (with cluster) where this start called: Beemo\_59 (A9), EdogawaKiddo\_57 (A9), Lilleskat\_57 (A9), Onglai\_57 (A9), Qobbit\_59 (A9), Sachima\_56 (A9), Scherzo\_59 (A9),

Start 17:

- Found in 166 of 249 ( 66.7% ) of genes in pham
- Manual Annotations of this start: 124 of 206
- Called 88.0% of time when present
- Phage (with cluster) where this start called: A6\_50 (A1), Abbyshoes\_57 (A1), Adahisdi\_55 (A1), Aeneas\_57 (A1), Agaliana\_50 (A1), Ajay\_56 (A1), Aldrich\_54 (A1), Alsfro\_59 (A1), Altman\_58 (A1), Alvin\_54 (A1), Applejack\_49 (A1), Arlo\_53 (A1), Ashballer\_57 (A1), BK1\_50 (A1), Barriga\_55 (A1), BarrowTuph\_55 (A1), Beatrix\_54 (A1), BeesKnees\_57 (A1), Bexan\_52 (A1), Bigchunggi\_55 (A1), Bircsak\_53 (A1), Blackflame\_53 (A1), Blesser\_53 (A1), BluSpix\_53 (A1), Bruns\_54 (A1), CactusRose\_52 (A1), CartmannCramer\_54 (A1), CatBus\_54 (A1), ChristmasHams\_50 (A1), Corvo\_55 (A1), Crispicous1\_52 (A1), Cueyllyss\_56 (A1), Dexes\_55 (A1), DirtDevil\_55 (A1), Doom\_53 (A1), DreamCatcher\_58 (A1), Dreamboat\_56 (A1), Dulcie\_55 (A1), Dussy\_56 (A1), Dynamix\_56 (A1), Edtherson\_54 (A1), EnzoK\_54 (A1), Fajezeel\_56 (A1), Fenn\_57 (A1), Forsytheast\_54 (A1), Francis47\_53 (A1), Froghopper\_52 (A1), GMonster\_52 (A1), Gachnar\_55 (A1), Gompeii16\_53 (A1), Graduation\_58 (A1), GrecoEtereo\_55 (A1), Greg\_56 (A1), GroundGoblin\_55 (A1), Gyzzlar\_51 (A1), Hami1\_48 (A1), HanShotFirst\_55 (A1), HarryOW\_54 (A1), Hermia\_55 (A1), Homines\_47 (A1), Hope4ever\_56 (A1), ILeekay\_58 (A1), Ichabod\_58 (A1), IgnatiusPatJac\_55 (A1), JC27\_57 (A1), Jorgensen\_55 (A1), Kanely\_57 (A1), Kenmech\_58 (A1), KikiBouba\_55 (A1), Killigrew\_55 (A1), Lamina13\_55 (A1), Levia\_52 (A1), Licorice\_57 (A1), LilBib\_55 (A1), LunarLander\_56 (A1), Makemake\_55 (A1), Marcell\_52 (A1), Marchy\_49 (A1), Marco3\_58 (A1), Marsha\_54 (A1), MaryBeth\_54 (A1), McGuire\_56 (A1), McSinger\_55 (A1), MetaQZJ\_53 (A1), MilleFeuille\_51 (A1), Monet\_57 (A1), Moose\_54 (A1), Mryolo\_52 (A1), Mule\_52 (A1), Museum\_56 (A1), Nerujay\_57 (A1), Nhonho\_54 (A1), Noxious\_54 (A1), Oogway\_54 (A1), PacerPaul\_54 (A1), Papez\_57 (A1), Paphu\_53 (A1), Paraselene\_52 (A1), Parliament\_54 (A1), PascalRango\_55 (A1), Payneful\_54 (A1), Pelly\_55 (A1), Pepe\_51 (A1), Peterson\_59 (A1), PherrisBueller\_54 (A1), PhineBark\_54 (A1), Phlippers\_54 (A1), PhrostyMug\_54 (A1), PinkPlastic\_55 (A1), Pinto\_55 (A1), Pippin\_56 (A1), PowerRanger\_54 (A1), ProMouse\_56 (A1), Puppet\_55 (A1), QTRlifeCrisis\_54 (A1), Rhynn\_53 (A1), Ringer\_55 (A1), Rutherford\_56 (A1), STLscum\_57 (A1), Sandaddy\_53 (A1),

Sanya\_52 (A1), SarFire\_52 (A1), Scowl\_55 (A1), Seabiscuit\_57 (A1), Slagathor\_57 (A1), Smairt\_57 (A1), Smeagol\_57 (A1), Snazzy\_54 (A1), Solon\_53 (A1), Sorpresa\_53 (A1), SpikeBT\_54 (A1), StewieG\_53 (A1), StrongArm\_53 (A1), Sumter\_51 (A1), SwissCheese\_56 (A1), Target\_55 (A1), Tasp14\_56 (A1), Teodoridan\_53 (A1), Thor\_52 (A1), Topgun\_54 (A1), Treddle\_55 (A1), TwoPeat\_56 (A1), Wheeler\_55 (A1), Whitspit\_52 (A1), Wilkins\_54 (A1), Zeeculate\_53 (A1),

Start 19:

- Found in 9 of 249 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 2 of 206
- Called 22.2% of time when present
- Phage (with cluster) where this start called: Caelakin\_55 (A4), Eagle\_55 (A4),

Start 21:

- Found in 1 of 249 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 206
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ibantik\_36 (singleton),

Start 23:

- Found in 2 of 249 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 206
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Celia\_41 (BD6), VieEnRose\_40 (BD6),

Start 24:

- Found in 224 of 249 ( 90.0% ) of genes in pham
- Manual Annotations of this start: 23 of 206
- Called 12.9% of time when present
- Phage (with cluster) where this start called: 20ES\_62 (A2), 40AC\_60 (A17), Aaronocolus\_39 (BD1), Asten\_39 (BD1), Blue7\_62 (A6), BryanRecycles\_40 (BD1), CRB1\_63 (A2), Caliburn\_39 (BD1), Eddasa\_40 (BD1), EnochSoames\_42 (BD1), First\_0061 (A2), George\_51 (A5), Hammer\_61 (A6), Hydra\_41 (BD1), Izzy\_40 (BD1), Jash\_40 (BD1), Jeffabunny\_61 (A6), Legacy\_39 (BD1), Leviticus\_39 (BD1), Marge\_54 (A1), Nerdos\_38 (BD1), NicoleTera\_57 (A2), PainterBoy\_61 (A16), Rusticus\_40 (BD1), Sunhee\_61 (A14), SunsetPointe\_39 (BD1), TarsusIV\_57 (A2), Tripl3t\_55 (A1), Unstoppable\_39 (BD1),

Start 28:

- Found in 209 of 249 ( 83.9% ) of genes in pham
- Manual Annotations of this start: 29 of 206
- Called 14.8% of time when present
- Phage (with cluster) where this start called: Alma\_59 (A9), BigMau\_56 (A1), BobbyDazzler\_48 (CA), Bxb1\_50 (A1), Bxz2\_57 (A3), Catalina\_60 (A9), Che12\_60 (A2), Ciao\_54 (A1), Conquerage\_59 (A9), CosmicSans\_48 (CA), D29\_57 (A2), DD5\_54 (A1), DroogsArmy\_53 (A7), Eidsmoe\_59 (A9), HortumSL17\_59 (A9), JackSparrow\_57 (A1), Jasper\_56 (A1), JuliaChild\_56 (A1), L5\_57 (A2), LochMonster\_56 (A4), Lockley\_53 (A1), Myxus\_59 (A9), Niza\_57 (A1), PP\_58 (A7), PackMan\_58 (A9), PhailMary\_47 (CA), Pioneer\_59 (A9), Pukovnik\_57 (A2), RER2\_41 (CA), RGL3\_42 (CA), U2\_54 (A1),

Start 29:

- Found in 169 of 249 ( 67.9% ) of genes in pham

- Manual Annotations of this start: 5 of 206
- Called 3.0% of time when present
- Phage (with cluster) where this start called: BPBiEbs31\_56 (A1), Bethlehem\_55 (A1), KSSJEB\_54 (A1), SkiPole\_59 (A1), phiHau3\_41 (BD4),

#### Start 30:

- Found in 26 of 249 ( 10.4% ) of genes in pham
- Manual Annotations of this start: 1 of 206
- Called 7.7% of time when present
- Phage (with cluster) where this start called: AnnaL29\_61 (A2), Holecx\_58 (A9),

#### Start 31:

- Found in 27 of 249 ( 10.8% ) of genes in pham
- Manual Annotations of this start: 2 of 206
- Called 7.4% of time when present
- Phage (with cluster) where this start called: Koduck\_60 (A2), RedRock\_61 (A2),

#### Start 32:

- Found in 158 of 249 ( 63.5% ) of genes in pham
- Manual Annotations of this start: 1 of 206
- Called 1.3% of time when present
- Phage (with cluster) where this start called: Briton15\_58 (A1), Kinmap\_57 (A21),

#### Start 33:

- Found in 10 of 249 ( 4.0% ) of genes in pham
- Manual Annotations of this start: 2 of 206
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Lillie\_48 (CA), Rhodalysa\_48 (CA),

#### Start 34:

- Found in 30 of 249 ( 12.0% ) of genes in pham
- Manual Annotations of this start: 2 of 206
- Called 23.3% of time when present
- Phage (with cluster) where this start called: Celery\_43 (BD3), Lannister\_41 (BD1), Sudan\_41 (BD3), TuanPN\_38 (BD1), Vanseggelen\_45 (BD3), Verabelle\_43 (BD3), phiCAM\_38 (BD3),

#### Start 37:

- Found in 69 of 249 ( 27.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.4% of time when present
- Phage (with cluster) where this start called: MegTheThird\_58 (A9),

### Summary by clusters:

There are 18 clusters represented in this pham: A21, singleton, A16, A7, A14, CA, A17, A1, BD4, A3, A2, BD1, A4, BD3, A6, A9, BD6, A5,

#### Info for manual annotations of cluster A1:

- Start number 10 was manually annotated 1 time for cluster A1.
- Start number 17 was manually annotated 124 times for cluster A1.
- Start number 24 was manually annotated 2 times for cluster A1.
- Start number 28 was manually annotated 10 times for cluster A1.

- Start number 29 was manually annotated 4 times for cluster A1.
- Start number 32 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster A16:

- Start number 24 was manually annotated 1 time for cluster A16.

Info for manual annotations of cluster A2:

- Start number 11 was manually annotated 4 times for cluster A2.
- Start number 24 was manually annotated 2 times for cluster A2.
- Start number 28 was manually annotated 4 times for cluster A2.
- Start number 30 was manually annotated 1 time for cluster A2.
- Start number 31 was manually annotated 2 times for cluster A2.

Info for manual annotations of cluster A3:

- Start number 12 was manually annotated 1 time for cluster A3.
- Start number 28 was manually annotated 1 time for cluster A3.

Info for manual annotations of cluster A4:

- Start number 13 was manually annotated 1 time for cluster A4.
- Start number 19 was manually annotated 2 times for cluster A4.
- Start number 28 was manually annotated 1 time for cluster A4.

Info for manual annotations of cluster A5:

- Start number 11 was manually annotated 1 time for cluster A5.
- Start number 24 was manually annotated 1 time for cluster A5.

Info for manual annotations of cluster A6:

- Start number 24 was manually annotated 3 times for cluster A6.

Info for manual annotations of cluster A7:

- Start number 12 was manually annotated 1 time for cluster A7.
- Start number 28 was manually annotated 2 times for cluster A7.

Info for manual annotations of cluster A9:

- Start number 14 was manually annotated 3 times for cluster A9.
- Start number 28 was manually annotated 8 times for cluster A9.

Info for manual annotations of cluster BD1:

- Start number 24 was manually annotated 14 times for cluster BD1.
- Start number 34 was manually annotated 2 times for cluster BD1.

Info for manual annotations of cluster BD4:

- Start number 29 was manually annotated 1 time for cluster BD4.

Info for manual annotations of cluster BD6:

- Start number 23 was manually annotated 2 times for cluster BD6.

Info for manual annotations of cluster CA:

- Start number 28 was manually annotated 3 times for cluster CA.

- Start number 33 was manually annotated 2 times for cluster CA.

### **Gene Information:**

Gene: 20ES\_62 Start: 39206, Stop: 38721, Start Num: 24

Candidate Starts for 20ES\_62:

(Start: 11 @39260 has 5 MA's), (Start: 24 @39206 has 23 MA's), (Start: 31 @39149 has 2 MA's), (38, 39065), (43, 39005), (52, 38945), (53, 38939), (59, 38879), (63, 38846), (65, 38828), (71, 38792),

Gene: 40AC\_60 Start: 40016, Stop: 39528, Start Num: 24

Candidate Starts for 40AC\_60:

(Start: 11 @40070 has 5 MA's), (Start: 24 @40016 has 23 MA's), (Start: 31 @39959 has 2 MA's), (37, 39881), (38, 39875), (43, 39815), (55, 39734), (59, 39689), (63, 39656), (65, 39638), (71, 39602), (79, 39545),

Gene: A6\_50 Start: 37463, Stop: 36942, Start Num: 17

Candidate Starts for A6\_50:

(Start: 17 @37463 has 124 MA's), (Start: 24 @37439 has 23 MA's), (Start: 28 @37412 has 29 MA's), (Start: 29 @37400 has 5 MA's), (Start: 32 @37352 has 1 MA's), (46, 37202), (59, 37106), (63, 37073), (65, 37055), (71, 37019), (75, 36989),

Gene: AN3\_62 Start: 37975, Stop: 37436, Start Num: 11

Candidate Starts for AN3\_62:

(Start: 11 @37975 has 5 MA's), (Start: 24 @37921 has 23 MA's), (Start: 31 @37864 has 2 MA's), (38, 37780), (43, 37720), (53, 37654), (59, 37594), (63, 37561), (65, 37543), (71, 37507),

Gene: Aaronocolus\_39 Start: 27976, Stop: 28482, Start Num: 24

Candidate Starts for Aaronocolus\_39:

(1, 27817), (2, 27832), (3, 27835), (Start: 24 @27976 has 23 MA's), (Start: 34 @28060 has 2 MA's), (37, 28117), (38, 28123), (39, 28144), (40, 28153), (44, 28189), (46, 28213), (48, 28225), (51, 28234), (52, 28243), (57, 28288), (70, 28390), (72, 28411), (79, 28459),

Gene: Abbyshoes\_57 Start: 39710, Stop: 39186, Start Num: 17

Candidate Starts for Abbyshoes\_57:

(Start: 17 @39710 has 124 MA's), (Start: 24 @39686 has 23 MA's), (Start: 28 @39659 has 29 MA's), (Start: 29 @39647 has 5 MA's), (Start: 32 @39599 has 1 MA's), (41, 39500), (46, 39449), (59, 39353), (60, 39350), (63, 39320), (65, 39302), (71, 39266), (75, 39233), (76, 39230),

Gene: Adahisdi\_55 Start: 39766, Stop: 39242, Start Num: 17

Candidate Starts for Adahisdi\_55:

(Start: 17 @39766 has 124 MA's), (Start: 24 @39742 has 23 MA's), (Start: 28 @39715 has 29 MA's), (Start: 29 @39703 has 5 MA's), (Start: 32 @39655 has 1 MA's), (41, 39556), (46, 39505), (59, 39409), (63, 39376), (65, 39358), (71, 39322), (75, 39289), (76, 39286),

Gene: Aeneas\_57 Start: 39983, Stop: 39459, Start Num: 17

Candidate Starts for Aeneas\_57:

(Start: 17 @39983 has 124 MA's), (Start: 24 @39959 has 23 MA's), (Start: 28 @39932 has 29 MA's), (Start: 29 @39920 has 5 MA's), (Start: 32 @39872 has 1 MA's), (41, 39773), (46, 39722), (59, 39626), (63, 39593), (65, 39575), (71, 39539), (75, 39506), (76, 39503),

Gene: Agaliana\_50 Start: 36301, Stop: 35780, Start Num: 17

Candidate Starts for Agaliana\_50:

(Start: 17 @36301 has 124 MA's), (Start: 24 @36277 has 23 MA's), (Start: 28 @36250 has 29 MA's), (Start: 29 @36238 has 5 MA's), (Start: 32 @36190 has 1 MA's), (41, 36091), (46, 36040), (59, 35944), (63, 35911), (65, 35893), (71, 35857), (75, 35827),

Gene: Ajay\_56 Start: 39761, Stop: 39240, Start Num: 17

Candidate Starts for Ajay\_56:

(Start: 17 @39761 has 124 MA's), (Start: 24 @39737 has 23 MA's), (Start: 28 @39710 has 29 MA's), (Start: 29 @39698 has 5 MA's), (Start: 32 @39650 has 1 MA's), (46, 39500), (59, 39404), (60, 39401), (63, 39371), (65, 39353), (71, 39317), (75, 39287),

Gene: Aldrich\_54 Start: 39331, Stop: 38810, Start Num: 17

Candidate Starts for Aldrich\_54:

(Start: 17 @39331 has 124 MA's), (Start: 24 @39307 has 23 MA's), (Start: 28 @39280 has 29 MA's), (Start: 29 @39268 has 5 MA's), (Start: 32 @39220 has 1 MA's), (41, 39121), (46, 39070), (59, 38974), (63, 38941), (65, 38923), (71, 38887), (75, 38857),

Gene: Alma\_59 Start: 38989, Stop: 38528, Start Num: 28

Candidate Starts for Alma\_59:

(2, 39157), (Start: 11 @39064 has 5 MA's), (Start: 14 @39040 has 3 MA's), (Start: 24 @39016 has 23 MA's), (Start: 28 @38989 has 29 MA's), (Start: 30 @38974 has 1 MA's), (37, 38878), (38, 38872), (41, 38833), (43, 38812), (53, 38746), (59, 38686), (63, 38653), (71, 38599), (75, 38569), (76, 38566),

Gene: Alsfro\_59 Start: 39337, Stop: 38813, Start Num: 17

Candidate Starts for Alsfro\_59:

(Start: 17 @39337 has 124 MA's), (Start: 24 @39313 has 23 MA's), (Start: 28 @39286 has 29 MA's), (Start: 29 @39274 has 5 MA's), (Start: 32 @39226 has 1 MA's), (46, 39076), (59, 38980), (60, 38977), (63, 38947), (65, 38929), (71, 38893),

Gene: Altman\_58 Start: 39953, Stop: 39432, Start Num: 17

Candidate Starts for Altman\_58:

(Start: 17 @39953 has 124 MA's), (Start: 24 @39929 has 23 MA's), (Start: 28 @39902 has 29 MA's), (Start: 29 @39890 has 5 MA's), (Start: 32 @39842 has 1 MA's), (41, 39743), (46, 39692), (59, 39596), (63, 39563), (65, 39545), (71, 39509), (75, 39479),

Gene: Alvin\_54 Start: 39086, Stop: 38565, Start Num: 17

Candidate Starts for Alvin\_54:

(Start: 17 @39086 has 124 MA's), (Start: 24 @39062 has 23 MA's), (Start: 28 @39035 has 29 MA's), (Start: 29 @39023 has 5 MA's), (Start: 32 @38975 has 1 MA's), (46, 38825), (59, 38729), (60, 38726), (63, 38696), (65, 38678), (71, 38642), (75, 38612),

Gene: AnnaL29\_61 Start: 39576, Stop: 39133, Start Num: 30

Candidate Starts for AnnaL29\_61:

(2, 39765), (Start: 11 @39672 has 5 MA's), (Start: 24 @39618 has 23 MA's), (Start: 30 @39576 has 1 MA's), (35, 39507), (37, 39483), (38, 39477), (41, 39438), (43, 39417), (52, 39357), (55, 39336), (59, 39291), (63, 39258), (65, 39240), (71, 39204),

Gene: Applejack\_49 Start: 35923, Stop: 35402, Start Num: 17

Candidate Starts for Applejack\_49:

(Start: 17 @35923 has 124 MA's), (Start: 24 @35899 has 23 MA's), (Start: 28 @35872 has 29 MA's), (Start: 29 @35860 has 5 MA's), (Start: 32 @35812 has 1 MA's), (41, 35713), (46, 35662), (59, 35566), (63, 35533), (65, 35515), (71, 35479), (75, 35449),

Gene: Arlo\_53 Start: 38163, Stop: 37642, Start Num: 17

Candidate Starts for Arlo\_53:

(4, 38286), (Start: 17 @38163 has 124 MA's), (Start: 28 @38112 has 29 MA's), (Start: 29 @38100 has 5 MA's), (39, 37971), (42, 37950), (43, 37932), (59, 37806), (60, 37803), (63, 37773), (65, 37755), (71, 37719), (75, 37689),

Gene: Ashballer\_57 Start: 39846, Stop: 39322, Start Num: 17

Candidate Starts for Ashballer\_57:

(Start: 17 @39846 has 124 MA's), (Start: 24 @39822 has 23 MA's), (Start: 28 @39795 has 29 MA's), (Start: 29 @39783 has 5 MA's), (Start: 32 @39735 has 1 MA's), (41, 39636), (46, 39585), (59, 39489), (63, 39456), (65, 39438), (71, 39402), (75, 39369), (76, 39366),

Gene: Asten\_39 Start: 28338, Stop: 28844, Start Num: 24

Candidate Starts for Asten\_39:

(1, 28179), (2, 28194), (3, 28197), (Start: 24 @28338 has 23 MA's), (Start: 34 @28422 has 2 MA's), (37, 28479), (38, 28485), (39, 28506), (44, 28551), (46, 28575), (48, 28587), (51, 28596), (52, 28605), (57, 28650), (59, 28671), (70, 28752), (72, 28773), (79, 28821),

Gene: BK1\_50 Start: 37463, Stop: 36942, Start Num: 17

Candidate Starts for BK1\_50:

(Start: 17 @37463 has 124 MA's), (Start: 24 @37439 has 23 MA's), (Start: 28 @37412 has 29 MA's), (Start: 29 @37400 has 5 MA's), (Start: 32 @37352 has 1 MA's), (46, 37202), (59, 37106), (63, 37073), (65, 37055), (71, 37019), (75, 36989),

Gene: BPBiebs31\_56 Start: 39985, Stop: 39524, Start Num: 29

Candidate Starts for BPBiebs31\_56:

(Start: 10 @40105 has 1 MA's), (Start: 17 @40048 has 124 MA's), (Start: 24 @40024 has 23 MA's), (Start: 28 @39997 has 29 MA's), (Start: 29 @39985 has 5 MA's), (Start: 32 @39937 has 1 MA's), (46, 39787), (59, 39691), (60, 39688), (63, 39658), (65, 39640), (71, 39604), (75, 39571), (76, 39568),

Gene: Barriga\_55 Start: 38273, Stop: 37752, Start Num: 17

Candidate Starts for Barriga\_55:

(Start: 17 @38273 has 124 MA's), (Start: 24 @38249 has 23 MA's), (Start: 28 @38222 has 29 MA's), (Start: 29 @38210 has 5 MA's), (Start: 32 @38162 has 1 MA's), (46, 38012), (59, 37916), (63, 37883), (65, 37865), (71, 37829), (75, 37799),

Gene: BarrowTuph\_55 Start: 39099, Stop: 38578, Start Num: 17

Candidate Starts for BarrowTuph\_55:

(Start: 17 @39099 has 124 MA's), (Start: 24 @39075 has 23 MA's), (Start: 28 @39048 has 29 MA's), (Start: 29 @39036 has 5 MA's), (Start: 32 @38988 has 1 MA's), (46, 38838), (59, 38742), (63, 38709), (65, 38691), (71, 38655), (75, 38625),

Gene: Beatrix\_54 Start: 39979, Stop: 39458, Start Num: 17

Candidate Starts for Beatrix\_54:

(Start: 17 @39979 has 124 MA's), (Start: 24 @39955 has 23 MA's), (Start: 28 @39928 has 29 MA's), (Start: 29 @39916 has 5 MA's), (Start: 32 @39868 has 1 MA's), (41, 39769), (46, 39718), (59, 39622), (63, 39589), (65, 39571), (71, 39535), (75, 39505),

Gene: Beemo\_59 Start: 38835, Stop: 38323, Start Num: 14

Candidate Starts for Beemo\_59:

(2, 38952), (Start: 11 @38859 has 5 MA's), (Start: 14 @38835 has 3 MA's), (Start: 24 @38811 has 23 MA's), (Start: 28 @38784 has 29 MA's), (Start: 30 @38769 has 1 MA's), (37, 38673), (38, 38667), (41, 38628), (43, 38607), (59, 38481), (63, 38448), (71, 38394), (75, 38364),

Gene: BeesKnees\_57 Start: 39132, Stop: 38611, Start Num: 17

Candidate Starts for BeesKnees\_57:

(Start: 17 @39132 has 124 MA's), (Start: 24 @39108 has 23 MA's), (Start: 28 @39081 has 29 MA's), (Start: 29 @39069 has 5 MA's), (Start: 32 @39021 has 1 MA's), (41, 38922), (46, 38871), (59, 38775), (60, 38772), (63, 38742), (65, 38724), (66, 38721), (71, 38688), (75, 38658), (76, 38655),

Gene: Bethlehem\_55 Start: 40567, Stop: 40109, Start Num: 29

Candidate Starts for Bethlehem\_55:

(4, 40753), (Start: 17 @40630 has 124 MA's), (Start: 28 @40579 has 29 MA's), (Start: 29 @40567 has 5 MA's), (39, 40438), (42, 40417), (43, 40399), (59, 40273), (63, 40240), (65, 40222), (71, 40186), (75, 40156),

Gene: Bexan\_52 Start: 39758, Stop: 39237, Start Num: 17

Candidate Starts for Bexan\_52:

(Start: 17 @39758 has 124 MA's), (Start: 24 @39734 has 23 MA's), (Start: 28 @39707 has 29 MA's), (Start: 29 @39695 has 5 MA's), (Start: 32 @39647 has 1 MA's), (41, 39548), (46, 39497), (59, 39401), (60, 39398), (63, 39368), (65, 39350), (67, 39341), (71, 39314), (75, 39284), (76, 39281),

Gene: BigMau\_56 Start: 38450, Stop: 37977, Start Num: 28

Candidate Starts for BigMau\_56:

(4, 38624), (Start: 17 @38501 has 124 MA's), (Start: 28 @38450 has 29 MA's), (Start: 29 @38438 has 5 MA's), (36, 38357), (39, 38309), (42, 38288), (43, 38270), (59, 38144), (63, 38111), (65, 38093), (71, 38057), (75, 38024), (76, 38021),

Gene: Bigchungji\_55 Start: 38517, Stop: 37993, Start Num: 17

Candidate Starts for Bigchungji\_55:

(Start: 17 @38517 has 124 MA's), (Start: 24 @38493 has 23 MA's), (Start: 28 @38466 has 29 MA's), (Start: 29 @38454 has 5 MA's), (Start: 32 @38406 has 1 MA's), (41, 38307), (46, 38256), (59, 38160), (60, 38157), (63, 38127), (65, 38109), (71, 38073), (75, 38040), (76, 38037),

Gene: Bircsak\_53 Start: 39877, Stop: 39356, Start Num: 17

Candidate Starts for Bircsak\_53:

(Start: 17 @39877 has 124 MA's), (Start: 24 @39853 has 23 MA's), (Start: 28 @39826 has 29 MA's), (Start: 29 @39814 has 5 MA's), (Start: 32 @39766 has 1 MA's), (41, 39667), (46, 39616), (59, 39520), (63, 39487), (65, 39469), (71, 39433), (75, 39403),

Gene: Blackflame\_53 Start: 38839, Stop: 38318, Start Num: 17

Candidate Starts for Blackflame\_53:

(Start: 17 @38839 has 124 MA's), (Start: 24 @38815 has 23 MA's), (Start: 28 @38788 has 29 MA's), (Start: 29 @38776 has 5 MA's), (Start: 32 @38728 has 1 MA's), (41, 38629), (46, 38578), (59, 38482), (60, 38479), (63, 38449), (65, 38431), (71, 38395), (75, 38365),

Gene: Blesser\_53 Start: 38744, Stop: 38223, Start Num: 17

Candidate Starts for Blesser\_53:

(Start: 17 @38744 has 124 MA's), (Start: 24 @38720 has 23 MA's), (Start: 28 @38693 has 29 MA's), (Start: 29 @38681 has 5 MA's), (Start: 32 @38633 has 1 MA's), (41, 38534), (46, 38483), (59, 38387), (60, 38384), (63, 38354), (65, 38336), (71, 38300), (75, 38270),

Gene: BluSpix\_53 Start: 35139, Stop: 34618, Start Num: 17

Candidate Starts for BluSpix\_53:

(Start: 17 @35139 has 124 MA's), (Start: 24 @35115 has 23 MA's), (Start: 28 @35088 has 29 MA's), (Start: 29 @35076 has 5 MA's), (Start: 32 @35028 has 1 MA's), (41, 34929), (46, 34878), (59, 34782),

(63, 34749), (65, 34731), (71, 34695), (75, 34665),

Gene: Blue7\_62 Start: 37782, Stop: 37297, Start Num: 24

Candidate Starts for Blue7\_62:

(2, 37929), (Start: 11 @37836 has 5 MA's), (Start: 24 @37782 has 23 MA's), (Start: 31 @37725 has 2 MA's), (38, 37641), (43, 37581), (59, 37455), (63, 37422), (65, 37404), (71, 37368), (73, 37350), (75, 37338), (76, 37335),

Gene: BobbyDazzler\_48 Start: 35140, Stop: 34667, Start Num: 28

Candidate Starts for BobbyDazzler\_48:

(2, 35326), (16, 35203), (Start: 24 @35167 has 23 MA's), (Start: 28 @35140 has 29 MA's), (Start: 31 @35110 has 2 MA's), (Start: 32 @35080 has 1 MA's), (Start: 33 @35077 has 2 MA's), (Start: 34 @35071 has 2 MA's), (37, 35020), (41, 34975), (43, 34954), (53, 34888), (73, 34723), (76, 34708),

Gene: Briton15\_58 Start: 39343, Stop: 38933, Start Num: 32

Candidate Starts for Briton15\_58:

(Start: 17 @39454 has 124 MA's), (Start: 24 @39430 has 23 MA's), (Start: 28 @39403 has 29 MA's), (Start: 29 @39391 has 5 MA's), (Start: 32 @39343 has 1 MA's), (46, 39193), (59, 39097), (63, 39064), (65, 39046), (68, 39034), (71, 39010), (75, 38980),

Gene: Bruns\_54 Start: 38335, Stop: 37814, Start Num: 17

Candidate Starts for Bruns\_54:

(Start: 17 @38335 has 124 MA's), (Start: 24 @38311 has 23 MA's), (Start: 28 @38284 has 29 MA's), (Start: 29 @38272 has 5 MA's), (Start: 32 @38224 has 1 MA's), (46, 38074), (59, 37978), (63, 37945), (65, 37927), (71, 37891), (75, 37861),

Gene: BryanRecycles\_40 Start: 28336, Stop: 28842, Start Num: 24

Candidate Starts for BryanRecycles\_40:

(1, 28177), (2, 28192), (3, 28195), (Start: 24 @28336 has 23 MA's), (Start: 34 @28420 has 2 MA's), (37, 28477), (38, 28483), (39, 28504), (40, 28513), (44, 28549), (46, 28573), (48, 28585), (50, 28588), (51, 28594), (52, 28603), (57, 28648), (59, 28669), (70, 28750), (72, 28771), (79, 28819),

Gene: Bxb1\_50 Start: 37984, Stop: 37511, Start Num: 28

Candidate Starts for Bxb1\_50:

(Start: 17 @38035 has 124 MA's), (Start: 24 @38011 has 23 MA's), (Start: 28 @37984 has 29 MA's), (Start: 29 @37972 has 5 MA's), (Start: 32 @37924 has 1 MA's), (46, 37774), (59, 37678), (63, 37645), (65, 37627), (71, 37591), (75, 37558), (76, 37555),

Gene: Bxz2\_57 Start: 38747, Stop: 38274, Start Num: 28

Candidate Starts for Bxz2\_57:

(2, 38933), (Start: 11 @38840 has 5 MA's), (Start: 19 @38786 has 2 MA's), (Start: 24 @38774 has 23 MA's), (Start: 28 @38747 has 29 MA's), (37, 38627), (48, 38519), (52, 38501), (53, 38495), (65, 38384), (71, 38348), (73, 38330), (75, 38318),

Gene: CRB1\_63 Start: 39723, Stop: 39238, Start Num: 24

Candidate Starts for CRB1\_63:

(Start: 11 @39777 has 5 MA's), (Start: 24 @39723 has 23 MA's), (Start: 31 @39666 has 2 MA's), (38, 39582), (43, 39522), (52, 39462), (59, 39396), (63, 39363), (65, 39345), (71, 39309),

Gene: CactusRose\_52 Start: 38569, Stop: 38048, Start Num: 17

Candidate Starts for CactusRose\_52:

(Start: 17 @38569 has 124 MA's), (Start: 24 @38545 has 23 MA's), (Start: 28 @38518 has 29 MA's), (Start: 29 @38506 has 5 MA's), (Start: 32 @38458 has 1 MA's), (41, 38359), (46, 38308), (59, 38212),

(60, 38209), (63, 38179), (65, 38161), (71, 38125), (75, 38095),

Gene: Caelakin\_55 Start: 37992, Stop: 37480, Start Num: 19

Candidate Starts for Caelakin\_55:

(2, 38139), (Start: 11 @38046 has 5 MA's), (Start: 13 @38028 has 1 MA's), (Start: 19 @37992 has 2 MA's), (Start: 24 @37980 has 23 MA's), (Start: 28 @37953 has 29 MA's), (Start: 30 @37938 has 1 MA's), (37, 37833), (52, 37707), (53, 37701), (55, 37686), (56, 37671), (65, 37590), (69, 37563), (71, 37554), (80, 37488),

Gene: Caliburn\_39 Start: 27959, Stop: 28465, Start Num: 24

Candidate Starts for Caliburn\_39:

(1, 27800), (2, 27815), (3, 27818), (Start: 24 @27959 has 23 MA's), (Start: 34 @28043 has 2 MA's), (37, 28100), (38, 28106), (39, 28127), (40, 28136), (44, 28172), (46, 28196), (48, 28208), (51, 28217), (52, 28226), (57, 28271), (70, 28373), (72, 28394), (79, 28442),

Gene: CartmannCramer\_54 Start: 40916, Stop: 40395, Start Num: 17

Candidate Starts for CartmannCramer\_54:

(Start: 17 @40916 has 124 MA's), (Start: 24 @40892 has 23 MA's), (Start: 28 @40865 has 29 MA's), (Start: 29 @40853 has 5 MA's), (Start: 32 @40805 has 1 MA's), (41, 40706), (46, 40655), (59, 40559), (60, 40556), (63, 40526), (65, 40508), (71, 40472), (75, 40442),

Gene: CatBus\_54 Start: 39523, Stop: 39002, Start Num: 17

Candidate Starts for CatBus\_54:

(Start: 17 @39523 has 124 MA's), (Start: 24 @39499 has 23 MA's), (Start: 28 @39472 has 29 MA's), (Start: 29 @39460 has 5 MA's), (Start: 32 @39412 has 1 MA's), (41, 39313), (46, 39262), (59, 39166), (63, 39133), (65, 39115), (71, 39079), (75, 39049),

Gene: Catalina\_60 Start: 38687, Stop: 38226, Start Num: 28

Candidate Starts for Catalina\_60:

(2, 38855), (Start: 11 @38762 has 5 MA's), (Start: 14 @38738 has 3 MA's), (Start: 24 @38714 has 23 MA's), (Start: 28 @38687 has 29 MA's), (Start: 30 @38672 has 1 MA's), (37, 38576), (38, 38570), (41, 38531), (43, 38510), (53, 38444), (59, 38384), (63, 38351), (71, 38297),

Gene: Celery\_43 Start: 29883, Stop: 30305, Start Num: 34

Candidate Starts for Celery\_43:

(1, 29640), (2, 29655), (Start: 34 @29883 has 2 MA's), (37, 29940), (38, 29946), (39, 29967), (40, 29976), (46, 30036), (47, 30039), (48, 30048), (57, 30111), (70, 30213), (72, 30234), (79, 30282),

Gene: Celia\_41 Start: 28888, Stop: 29397, Start Num: 23

Candidate Starts for Celia\_41:

(1, 28732), (2, 28747), (Start: 23 @28888 has 2 MA's), (37, 29032), (46, 29128), (57, 29203), (70, 29305), (72, 29326), (74, 29341),

Gene: Che12\_60 Start: 37843, Stop: 37385, Start Num: 28

Candidate Starts for Che12\_60:

(2, 38017), (Start: 11 @37924 has 5 MA's), (Start: 24 @37870 has 23 MA's), (Start: 28 @37843 has 29 MA's), (Start: 31 @37813 has 2 MA's), (37, 37735), (54, 37594), (55, 37588), (56, 37573), (59, 37543), (62, 37534), (63, 37510), (65, 37492), (71, 37456),

Gene: ChristmasHams\_50 Start: 36775, Stop: 36254, Start Num: 17

Candidate Starts for ChristmasHams\_50:

(Start: 17 @36775 has 124 MA's), (Start: 24 @36751 has 23 MA's), (Start: 28 @36724 has 29 MA's), (Start: 29 @36712 has 5 MA's), (Start: 32 @36664 has 1 MA's), (41, 36565), (46, 36514), (59, 36418),

(63, 36385), (65, 36367), (71, 36331), (75, 36301),

Gene: Ciao\_54 Start: 38691, Stop: 38221, Start Num: 28

Candidate Starts for Ciao\_54:

(Start: 17 @38742 has 124 MA's), (Start: 24 @38718 has 23 MA's), (Start: 28 @38691 has 29 MA's), (Start: 29 @38679 has 5 MA's), (Start: 32 @38631 has 1 MA's), (46, 38481), (59, 38385), (60, 38382), (63, 38352), (65, 38334), (71, 38298), (75, 38268),

Gene: Conquerage\_59 Start: 38758, Stop: 38297, Start Num: 28

Candidate Starts for Conquerage\_59:

(2, 38926), (Start: 11 @38833 has 5 MA's), (Start: 14 @38809 has 3 MA's), (Start: 24 @38785 has 23 MA's), (Start: 28 @38758 has 29 MA's), (Start: 30 @38743 has 1 MA's), (37, 38647), (38, 38641), (41, 38602), (43, 38581), (53, 38515), (59, 38455), (63, 38422), (71, 38368),

Gene: Corvo\_55 Start: 40187, Stop: 39666, Start Num: 17

Candidate Starts for Corvo\_55:

(Start: 17 @40187 has 124 MA's), (Start: 24 @40163 has 23 MA's), (Start: 28 @40136 has 29 MA's), (Start: 29 @40124 has 5 MA's), (Start: 32 @40076 has 1 MA's), (46, 39926), (59, 39830), (63, 39797), (65, 39779), (71, 39743), (75, 39713),

Gene: CosmicSans\_48 Start: 35094, Stop: 34621, Start Num: 28

Candidate Starts for CosmicSans\_48:

(2, 35280), (16, 35157), (Start: 24 @35121 has 23 MA's), (Start: 28 @35094 has 29 MA's), (Start: 31 @35064 has 2 MA's), (Start: 32 @35034 has 1 MA's), (Start: 33 @35031 has 2 MA's), (Start: 34 @35025 has 2 MA's), (37, 34974), (41, 34929), (43, 34908), (52, 34848), (53, 34842), (73, 34677), (76, 34662),

Gene: Crispicous1\_52 Start: 37694, Stop: 37173, Start Num: 17

Candidate Starts for Crispicous1\_52:

(Start: 17 @37694 has 124 MA's), (Start: 24 @37670 has 23 MA's), (Start: 28 @37643 has 29 MA's), (Start: 29 @37631 has 5 MA's), (Start: 32 @37583 has 1 MA's), (46, 37433), (59, 37337), (63, 37304), (65, 37286), (71, 37250), (75, 37220),

Gene: Cueyllyss\_56 Start: 40373, Stop: 39852, Start Num: 17

Candidate Starts for Cueyllyss\_56:

(Start: 17 @40373 has 124 MA's), (Start: 24 @40349 has 23 MA's), (Start: 28 @40322 has 29 MA's), (Start: 29 @40310 has 5 MA's), (Start: 32 @40262 has 1 MA's), (41, 40163), (46, 40112), (59, 40016), (60, 40013), (63, 39983), (65, 39965), (66, 39962), (71, 39929), (75, 39899), (76, 39896),

Gene: D29\_57 Start: 38727, Stop: 38269, Start Num: 28

Candidate Starts for D29\_57:

(2, 38901), (Start: 11 @38808 has 5 MA's), (Start: 24 @38754 has 23 MA's), (Start: 28 @38727 has 29 MA's), (Start: 31 @38697 has 2 MA's), (37, 38619), (38, 38613), (43, 38553), (55, 38472), (59, 38427), (63, 38394), (65, 38376), (71, 38340),

Gene: DD5\_54 Start: 39472, Stop: 39002, Start Num: 28

Candidate Starts for DD5\_54:

(Start: 17 @39523 has 124 MA's), (Start: 24 @39499 has 23 MA's), (Start: 28 @39472 has 29 MA's), (Start: 29 @39460 has 5 MA's), (Start: 32 @39412 has 1 MA's), (46, 39262), (59, 39166), (63, 39133), (65, 39115), (71, 39079), (75, 39049),

Gene: Deloris\_60 Start: 38927, Stop: 38388, Start Num: 11

Candidate Starts for Deloris\_60:

(Start: 11 @38927 has 5 MA's), (Start: 24 @38873 has 23 MA's), (Start: 31 @38816 has 2 MA's), (38, 38732), (43, 38672), (53, 38606), (59, 38546), (63, 38513), (65, 38495), (71, 38459),

Gene: Dexes\_55 Start: 39646, Stop: 39122, Start Num: 17

Candidate Starts for Dexes\_55:

(Start: 17 @39646 has 124 MA's), (Start: 24 @39622 has 23 MA's), (Start: 28 @39595 has 29 MA's), (Start: 29 @39583 has 5 MA's), (Start: 32 @39535 has 1 MA's), (46, 39385), (59, 39289), (63, 39256), (65, 39238), (71, 39202), (75, 39169), (76, 39166),

Gene: DirtDevil\_55 Start: 39331, Stop: 38810, Start Num: 17

Candidate Starts for DirtDevil\_55:

(Start: 17 @39331 has 124 MA's), (Start: 24 @39307 has 23 MA's), (Start: 28 @39280 has 29 MA's), (Start: 29 @39268 has 5 MA's), (Start: 32 @39220 has 1 MA's), (41, 39121), (46, 39070), (59, 38974), (63, 38941), (65, 38923), (71, 38887), (75, 38857),

Gene: Doom\_53 Start: 39055, Stop: 38534, Start Num: 17

Candidate Starts for Doom\_53:

(Start: 17 @39055 has 124 MA's), (Start: 24 @39031 has 23 MA's), (Start: 28 @39004 has 29 MA's), (Start: 29 @38992 has 5 MA's), (Start: 32 @38944 has 1 MA's), (46, 38794), (59, 38698), (60, 38695), (63, 38665), (65, 38647), (71, 38611), (75, 38581),

Gene: DreamCatcher\_58 Start: 40191, Stop: 39670, Start Num: 17

Candidate Starts for DreamCatcher\_58:

(Start: 17 @40191 has 124 MA's), (Start: 24 @40167 has 23 MA's), (Start: 28 @40140 has 29 MA's), (Start: 29 @40128 has 5 MA's), (Start: 32 @40080 has 1 MA's), (41, 39981), (46, 39930), (59, 39834), (63, 39801), (65, 39783), (71, 39747), (75, 39717),

Gene: Dreamboat\_56 Start: 38344, Stop: 37823, Start Num: 17

Candidate Starts for Dreamboat\_56:

(Start: 17 @38344 has 124 MA's), (Start: 24 @38320 has 23 MA's), (Start: 28 @38293 has 29 MA's), (Start: 29 @38281 has 5 MA's), (Start: 32 @38233 has 1 MA's), (46, 38083), (59, 37987), (63, 37954), (65, 37936), (68, 37924), (71, 37900), (75, 37870),

Gene: DroogsArmy\_53 Start: 39870, Stop: 39409, Start Num: 28

Candidate Starts for DroogsArmy\_53:

(Start: 11 @39963 has 5 MA's), (Start: 12 @39948 has 2 MA's), (Start: 17 @39921 has 124 MA's), (Start: 24 @39897 has 23 MA's), (Start: 28 @39870 has 29 MA's), (Start: 29 @39858 has 5 MA's), (Start: 33 @39807 has 2 MA's), (37, 39762), (48, 39654), (52, 39636), (53, 39630), (56, 39600), (59, 39570), (65, 39519), (69, 39492), (71, 39483), (75, 39453), (80, 39417),

Gene: Dulcie\_55 Start: 38956, Stop: 38435, Start Num: 17

Candidate Starts for Dulcie\_55:

(Start: 17 @38956 has 124 MA's), (Start: 24 @38932 has 23 MA's), (Start: 28 @38905 has 29 MA's), (Start: 29 @38893 has 5 MA's), (Start: 32 @38845 has 1 MA's), (41, 38746), (46, 38695), (59, 38599), (63, 38566), (65, 38548), (71, 38512), (75, 38482),

Gene: Dussy\_56 Start: 39730, Stop: 39206, Start Num: 17

Candidate Starts for Dussy\_56:

(Start: 17 @39730 has 124 MA's), (Start: 24 @39706 has 23 MA's), (Start: 28 @39679 has 29 MA's), (Start: 29 @39667 has 5 MA's), (Start: 32 @39619 has 1 MA's), (41, 39520), (46, 39469), (59, 39373), (60, 39370), (63, 39340), (65, 39322), (71, 39286), (75, 39253), (76, 39250),

Gene: Dynamix\_56 Start: 38930, Stop: 38409, Start Num: 17

Candidate Starts for Dynamix\_56:

(Start: 17 @38930 has 124 MA's), (Start: 24 @38906 has 23 MA's), (Start: 28 @38879 has 29 MA's), (Start: 29 @38867 has 5 MA's), (Start: 32 @38819 has 1 MA's), (41, 38720), (46, 38669), (59, 38573), (60, 38570), (63, 38540), (65, 38522), (66, 38519), (71, 38486), (75, 38456), (76, 38453),

Gene: Eagle\_55 Start: 38017, Stop: 37505, Start Num: 19

Candidate Starts for Eagle\_55:

(2, 38164), (Start: 11 @38071 has 5 MA's), (Start: 13 @38053 has 1 MA's), (Start: 19 @38017 has 2 MA's), (Start: 24 @38005 has 23 MA's), (Start: 28 @37978 has 29 MA's), (Start: 30 @37963 has 1 MA's), (37, 37858), (52, 37732), (53, 37726), (55, 37711), (56, 37696), (65, 37615), (69, 37588), (71, 37579), (80, 37513),

Gene: Eddasa\_40 Start: 28336, Stop: 28842, Start Num: 24

Candidate Starts for Eddasa\_40:

(1, 28177), (2, 28192), (3, 28195), (Start: 24 @28336 has 23 MA's), (Start: 34 @28420 has 2 MA's), (37, 28477), (38, 28483), (39, 28504), (40, 28513), (44, 28549), (46, 28573), (48, 28585), (50, 28588), (51, 28594), (52, 28603), (57, 28648), (59, 28669), (70, 28750), (72, 28771), (79, 28819),

Gene: EdogawaKiddo\_57 Start: 38786, Stop: 38274, Start Num: 14

Candidate Starts for EdogawaKiddo\_57:

(2, 38903), (Start: 11 @38810 has 5 MA's), (Start: 14 @38786 has 3 MA's), (Start: 24 @38762 has 23 MA's), (Start: 28 @38735 has 29 MA's), (Start: 30 @38720 has 1 MA's), (37, 38624), (38, 38618), (41, 38579), (43, 38558), (59, 38432), (63, 38399), (71, 38345), (75, 38315),

Gene: Edtherson\_54 Start: 39025, Stop: 38504, Start Num: 17

Candidate Starts for Edtherson\_54:

(Start: 17 @39025 has 124 MA's), (Start: 24 @39001 has 23 MA's), (Start: 28 @38974 has 29 MA's), (Start: 29 @38962 has 5 MA's), (Start: 32 @38914 has 1 MA's), (41, 38815), (46, 38764), (59, 38668), (63, 38635), (65, 38617), (71, 38581), (75, 38551),

Gene: Eidsmoe\_59 Start: 38750, Stop: 38289, Start Num: 28

Candidate Starts for Eidsmoe\_59:

(2, 38918), (Start: 11 @38825 has 5 MA's), (Start: 14 @38801 has 3 MA's), (Start: 24 @38777 has 23 MA's), (Start: 28 @38750 has 29 MA's), (Start: 30 @38735 has 1 MA's), (37, 38639), (38, 38633), (41, 38594), (43, 38573), (53, 38507), (59, 38447), (63, 38414), (71, 38360),

Gene: EnochSoames\_42 Start: 28331, Stop: 28837, Start Num: 24

Candidate Starts for EnochSoames\_42:

(1, 28172), (2, 28187), (3, 28190), (Start: 24 @28331 has 23 MA's), (Start: 34 @28415 has 2 MA's), (37, 28472), (38, 28478), (39, 28499), (40, 28508), (44, 28544), (46, 28568), (48, 28580), (50, 28583), (51, 28589), (52, 28598), (57, 28643), (70, 28745), (72, 28766), (79, 28814),

Gene: EnzoK\_54 Start: 36780, Stop: 36256, Start Num: 17

Candidate Starts for EnzoK\_54:

(Start: 17 @36780 has 124 MA's), (Start: 24 @36756 has 23 MA's), (Start: 28 @36729 has 29 MA's), (Start: 29 @36717 has 5 MA's), (Start: 32 @36669 has 1 MA's), (46, 36519), (59, 36423), (60, 36420), (63, 36390), (65, 36372), (71, 36336), (75, 36303), (76, 36300),

Gene: Fajezeel\_56 Start: 39091, Stop: 38570, Start Num: 17

Candidate Starts for Fajezeel\_56:

(Start: 17 @39091 has 124 MA's), (Start: 24 @39067 has 23 MA's), (Start: 28 @39040 has 29 MA's), (Start: 29 @39028 has 5 MA's), (Start: 32 @38980 has 1 MA's), (46, 38830), (59, 38734), (60, 38731), (63, 38701), (65, 38683), (71, 38647), (75, 38617),

Gene: Fenn\_57 Start: 40876, Stop: 40355, Start Num: 17

Candidate Starts for Fenn\_57:

(Start: 10 @40933 has 1 MA's), (Start: 17 @40876 has 124 MA's), (Start: 24 @40852 has 23 MA's), (25, 40840), (Start: 28 @40825 has 29 MA's), (Start: 29 @40813 has 5 MA's), (Start: 32 @40765 has 1 MA's), (41, 40666), (46, 40615), (59, 40519), (63, 40486), (65, 40468), (71, 40432), (75, 40402),

Gene: First\_0061 Start: 39106, Stop: 38621, Start Num: 24

Candidate Starts for First\_0061:

(Start: 11 @39160 has 5 MA's), (Start: 24 @39106 has 23 MA's), (Start: 31 @39049 has 2 MA's), (38, 38965), (43, 38905), (53, 38839), (59, 38779), (63, 38746), (65, 38728), (71, 38692),

Gene: Forsytheast\_54 Start: 38503, Stop: 37982, Start Num: 17

Candidate Starts for Forsytheast\_54:

(Start: 17 @38503 has 124 MA's), (Start: 24 @38479 has 23 MA's), (Start: 28 @38452 has 29 MA's), (Start: 29 @38440 has 5 MA's), (Start: 32 @38392 has 1 MA's), (41, 38293), (46, 38242), (59, 38146), (63, 38113), (65, 38095), (71, 38059), (75, 38029),

Gene: Francis47\_53 Start: 40145, Stop: 39624, Start Num: 17

Candidate Starts for Francis47\_53:

(Start: 17 @40145 has 124 MA's), (Start: 24 @40121 has 23 MA's), (Start: 28 @40094 has 29 MA's), (Start: 29 @40082 has 5 MA's), (Start: 32 @40034 has 1 MA's), (41, 39935), (46, 39884), (59, 39788), (63, 39755), (65, 39737), (71, 39701), (75, 39671),

Gene: Froghopper\_52 Start: 37870, Stop: 37349, Start Num: 17

Candidate Starts for Froghopper\_52:

(Start: 17 @37870 has 124 MA's), (Start: 24 @37846 has 23 MA's), (Start: 28 @37819 has 29 MA's), (Start: 29 @37807 has 5 MA's), (Start: 32 @37759 has 1 MA's), (46, 37609), (59, 37513), (60, 37510), (63, 37480), (65, 37462), (71, 37426), (75, 37396),

Gene: GMonster\_52 Start: 37727, Stop: 37203, Start Num: 17

Candidate Starts for GMonster\_52:

(Start: 17 @37727 has 124 MA's), (Start: 24 @37703 has 23 MA's), (Start: 28 @37676 has 29 MA's), (Start: 29 @37664 has 5 MA's), (Start: 32 @37616 has 1 MA's), (46, 37466), (59, 37370), (60, 37367), (63, 37337), (65, 37319), (71, 37283), (75, 37253), (76, 37250),

Gene: Gachnar\_55 Start: 38498, Stop: 37971, Start Num: 17

Candidate Starts for Gachnar\_55:

(Start: 17 @38498 has 124 MA's), (Start: 24 @38474 has 23 MA's), (Start: 28 @38447 has 29 MA's), (Start: 29 @38435 has 5 MA's), (Start: 32 @38387 has 1 MA's), (41, 38288), (46, 38237), (59, 38141), (60, 38138), (63, 38108), (65, 38090), (71, 38054), (75, 38021), (76, 38018),

Gene: George\_51 Start: 38308, Stop: 37814, Start Num: 24

Candidate Starts for George\_51:

(2, 38473), (Start: 11 @38380 has 5 MA's), (Start: 13 @38362 has 1 MA's), (Start: 19 @38320 has 2 MA's), (Start: 24 @38308 has 23 MA's), (Start: 28 @38281 has 29 MA's), (Start: 29 @38269 has 5 MA's), (Start: 33 @38218 has 2 MA's), (53, 38041), (54, 38032), (56, 38011), (58, 37996), (59, 37981), (61, 37975), (63, 37948), (65, 37930), (69, 37903), (71, 37894), (73, 37876), (75, 37864), (76, 37861),

Gene: Gompeii16\_53 Start: 39878, Stop: 39357, Start Num: 17

Candidate Starts for Gompeii16\_53:

(Start: 17 @39878 has 124 MA's), (Start: 24 @39854 has 23 MA's), (Start: 28 @39827 has 29 MA's), (Start: 29 @39815 has 5 MA's), (Start: 32 @39767 has 1 MA's), (41, 39668), (46, 39617), (59, 39521),

(63, 39488), (65, 39470), (71, 39434), (75, 39404),

Gene: Graduation\_58 Start: 40445, Stop: 39924, Start Num: 17

Candidate Starts for Graduation\_58:

(Start: 17 @40445 has 124 MA's), (Start: 24 @40421 has 23 MA's), (Start: 28 @40394 has 29 MA's),  
(Start: 29 @40382 has 5 MA's), (Start: 32 @40334 has 1 MA's), (41, 40235), (46, 40184), (59, 40088),  
(60, 40085), (63, 40055), (65, 40037), (66, 40034), (71, 40001), (75, 39971), (76, 39968),

Gene: GrecoEtereo\_55 Start: 38850, Stop: 38329, Start Num: 17

Candidate Starts for GrecoEtereo\_55:

(Start: 17 @38850 has 124 MA's), (Start: 24 @38826 has 23 MA's), (Start: 28 @38799 has 29 MA's),  
(Start: 29 @38787 has 5 MA's), (Start: 32 @38739 has 1 MA's), (46, 38589), (60, 38490), (63, 38460),  
(65, 38442), (71, 38406), (75, 38376),

Gene: Greg\_56 Start: 39091, Stop: 38570, Start Num: 17

Candidate Starts for Greg\_56:

(Start: 17 @39091 has 124 MA's), (Start: 24 @39067 has 23 MA's), (Start: 28 @39040 has 29 MA's),  
(Start: 29 @39028 has 5 MA's), (Start: 32 @38980 has 1 MA's), (46, 38830), (59, 38734), (60, 38731),  
(63, 38701), (65, 38683), (71, 38647), (75, 38617),

Gene: GroundGoblin\_55 Start: 39473, Stop: 38952, Start Num: 17

Candidate Starts for GroundGoblin\_55:

(Start: 17 @39473 has 124 MA's), (Start: 24 @39449 has 23 MA's), (Start: 28 @39422 has 29 MA's),  
(Start: 29 @39410 has 5 MA's), (Start: 32 @39362 has 1 MA's), (41, 39263), (46, 39212), (59, 39116),  
(63, 39083), (65, 39065), (71, 39029), (75, 38999),

Gene: Gyzlar\_51 Start: 37093, Stop: 36569, Start Num: 17

Candidate Starts for Gyzlar\_51:

(Start: 17 @37093 has 124 MA's), (Start: 24 @37069 has 23 MA's), (Start: 28 @37042 has 29 MA's),  
(Start: 29 @37030 has 5 MA's), (Start: 32 @36982 has 1 MA's), (46, 36832), (59, 36736), (60, 36733),  
(63, 36703), (65, 36685), (71, 36649), (75, 36616), (76, 36613),

Gene: Hami1\_48 Start: 33928, Stop: 33407, Start Num: 17

Candidate Starts for Hami1\_48:

(Start: 17 @33928 has 124 MA's), (Start: 24 @33904 has 23 MA's), (Start: 28 @33877 has 29 MA's),  
(Start: 29 @33865 has 5 MA's), (Start: 32 @33817 has 1 MA's), (46, 33667), (59, 33571), (60, 33568),  
(63, 33538), (65, 33520), (71, 33484), (75, 33454),

Gene: Hammer\_61 Start: 37586, Stop: 37101, Start Num: 24

Candidate Starts for Hammer\_61:

(2, 37733), (Start: 11 @37640 has 5 MA's), (Start: 24 @37586 has 23 MA's), (Start: 31 @37529 has 2  
MA's), (38, 37445), (43, 37385), (59, 37259), (63, 37226), (65, 37208), (71, 37172), (73, 37154), (75,  
37142), (76, 37139),

Gene: HanShotFirst\_55 Start: 39390, Stop: 38869, Start Num: 17

Candidate Starts for HanShotFirst\_55:

(Start: 17 @39390 has 124 MA's), (Start: 24 @39366 has 23 MA's), (Start: 28 @39339 has 29 MA's),  
(Start: 29 @39327 has 5 MA's), (Start: 32 @39279 has 1 MA's), (46, 39129), (59, 39033), (60, 39030),  
(63, 39000), (65, 38982), (71, 38946), (75, 38916), (77, 38901),

Gene: HarryOW\_54 Start: 38348, Stop: 37827, Start Num: 17

Candidate Starts for HarryOW\_54:

(Start: 17 @38348 has 124 MA's), (Start: 24 @38324 has 23 MA's), (Start: 28 @38297 has 29 MA's), (Start: 29 @38285 has 5 MA's), (Start: 32 @38237 has 1 MA's), (41, 38138), (46, 38087), (59, 37991), (63, 37958), (65, 37940), (71, 37904), (75, 37874),

Gene: Hermia\_55 Start: 39523, Stop: 39002, Start Num: 17

Candidate Starts for Hermia\_55:

(Start: 17 @39523 has 124 MA's), (Start: 24 @39499 has 23 MA's), (Start: 28 @39472 has 29 MA's), (Start: 29 @39460 has 5 MA's), (Start: 32 @39412 has 1 MA's), (41, 39313), (46, 39262), (59, 39166), (63, 39133), (65, 39115), (71, 39079), (75, 39049),

Gene: Horex\_58 Start: 38740, Stop: 38294, Start Num: 30

Candidate Starts for Horex\_58:

(2, 38923), (Start: 11 @38830 has 5 MA's), (Start: 14 @38806 has 3 MA's), (Start: 24 @38782 has 23 MA's), (Start: 28 @38755 has 29 MA's), (Start: 30 @38740 has 1 MA's), (37, 38644), (38, 38638), (41, 38599), (43, 38578), (53, 38512), (59, 38452), (63, 38419), (71, 38365), (75, 38335),

Gene: Homines\_47 Start: 35032, Stop: 34511, Start Num: 17

Candidate Starts for Homines\_47:

(Start: 17 @35032 has 124 MA's), (Start: 24 @35008 has 23 MA's), (Start: 28 @34981 has 29 MA's), (Start: 29 @34969 has 5 MA's), (Start: 32 @34921 has 1 MA's), (59, 34675), (63, 34642), (65, 34624), (71, 34588), (75, 34558),

Gene: Hope4ever\_56 Start: 39755, Stop: 39234, Start Num: 17

Candidate Starts for Hope4ever\_56:

(Start: 17 @39755 has 124 MA's), (Start: 24 @39731 has 23 MA's), (Start: 28 @39704 has 29 MA's), (Start: 29 @39692 has 5 MA's), (Start: 32 @39644 has 1 MA's), (46, 39494), (59, 39398), (63, 39365), (65, 39347), (71, 39311), (75, 39281),

Gene: HortumSL17\_59 Start: 38686, Stop: 38225, Start Num: 28

Candidate Starts for HortumSL17\_59:

(2, 38854), (Start: 11 @38761 has 5 MA's), (Start: 14 @38737 has 3 MA's), (Start: 24 @38713 has 23 MA's), (Start: 28 @38686 has 29 MA's), (Start: 30 @38671 has 1 MA's), (37, 38575), (38, 38569), (41, 38530), (43, 38509), (53, 38443), (59, 38383), (63, 38350), (71, 38296),

Gene: Hydra\_41 Start: 28507, Stop: 29013, Start Num: 24

Candidate Starts for Hydra\_41:

(1, 28348), (2, 28363), (3, 28366), (Start: 24 @28507 has 23 MA's), (Start: 34 @28591 has 2 MA's), (37, 28648), (38, 28654), (39, 28675), (40, 28684), (44, 28720), (46, 28744), (48, 28756), (51, 28765), (52, 28774), (57, 28819), (70, 28921), (72, 28942), (79, 28990),

Gene: ILeeKay\_58 Start: 39619, Stop: 39098, Start Num: 17

Candidate Starts for ILeeKay\_58:

(Start: 17 @39619 has 124 MA's), (Start: 24 @39595 has 23 MA's), (Start: 28 @39568 has 29 MA's), (Start: 29 @39556 has 5 MA's), (Start: 32 @39508 has 1 MA's), (41, 39409), (46, 39358), (60, 39259), (63, 39229), (65, 39211), (71, 39175), (75, 39145),

Gene: Ibantik\_36 Start: 17326, Stop: 16781, Start Num: 21

Candidate Starts for Ibantik\_36:

(3, 17482), (5, 17461), (7, 17449), (9, 17434), (Start: 12 @17377 has 2 MA's), (20, 17329), (Start: 21 @17326 has 1 MA's), (22, 17323), (26, 17293), (27, 17290), (41, 17101), (62, 16942), (64, 16912), (65, 16900), (81, 16792),

Gene: Ichabod\_58 Start: 40432, Stop: 39908, Start Num: 17

Candidate Starts for Ichabod\_58:

(Start: 17 @40432 has 124 MA's), (Start: 24 @40408 has 23 MA's), (Start: 28 @40381 has 29 MA's), (Start: 29 @40369 has 5 MA's), (Start: 32 @40321 has 1 MA's), (41, 40222), (46, 40171), (59, 40075), (60, 40072), (63, 40042), (65, 40024), (71, 39988), (75, 39955), (76, 39952),

Gene: IgnatiusPatJac\_55 Start: 39084, Stop: 38563, Start Num: 17

Candidate Starts for IgnatiusPatJac\_55:

(Start: 17 @39084 has 124 MA's), (Start: 24 @39060 has 23 MA's), (Start: 28 @39033 has 29 MA's), (Start: 29 @39021 has 5 MA's), (Start: 32 @38973 has 1 MA's), (41, 38874), (46, 38823), (59, 38727), (63, 38694), (65, 38676), (71, 38640), (75, 38610),

Gene: Izzy\_40 Start: 28383, Stop: 28889, Start Num: 24

Candidate Starts for Izzy\_40:

(1, 28224), (2, 28239), (3, 28242), (Start: 24 @28383 has 23 MA's), (Start: 34 @28467 has 2 MA's), (37, 28524), (38, 28530), (39, 28551), (40, 28560), (44, 28596), (46, 28620), (48, 28632), (50, 28635), (51, 28641), (52, 28650), (57, 28695), (59, 28716), (70, 28797), (72, 28818), (79, 28866),

Gene: JC27\_57 Start: 39535, Stop: 39011, Start Num: 17

Candidate Starts for JC27\_57:

(Start: 17 @39535 has 124 MA's), (Start: 24 @39511 has 23 MA's), (Start: 28 @39484 has 29 MA's), (Start: 29 @39472 has 5 MA's), (Start: 32 @39424 has 1 MA's), (41, 39325), (46, 39274), (59, 39178), (63, 39145), (65, 39127), (71, 39091), (75, 39058), (76, 39055),

Gene: JackSparrow\_57 Start: 39548, Stop: 39078, Start Num: 28

Candidate Starts for JackSparrow\_57:

(Start: 17 @39599 has 124 MA's), (Start: 24 @39575 has 23 MA's), (Start: 28 @39548 has 29 MA's), (Start: 29 @39536 has 5 MA's), (Start: 32 @39488 has 1 MA's), (41, 39389), (46, 39338), (59, 39242), (60, 39239), (63, 39209), (65, 39191), (71, 39155), (75, 39125),

Gene: Jash\_40 Start: 28336, Stop: 28842, Start Num: 24

Candidate Starts for Jash\_40:

(1, 28177), (2, 28192), (3, 28195), (Start: 24 @28336 has 23 MA's), (Start: 34 @28420 has 2 MA's), (37, 28477), (38, 28483), (39, 28504), (40, 28513), (44, 28549), (46, 28573), (48, 28585), (50, 28588), (51, 28594), (52, 28603), (57, 28648), (59, 28669), (70, 28750), (72, 28771), (79, 28819),

Gene: Jasper\_56 Start: 38179, Stop: 37709, Start Num: 28

Candidate Starts for Jasper\_56:

(Start: 17 @38230 has 124 MA's), (Start: 24 @38206 has 23 MA's), (Start: 28 @38179 has 29 MA's), (Start: 29 @38167 has 5 MA's), (Start: 32 @38119 has 1 MA's), (46, 37969), (59, 37873), (63, 37840), (65, 37822), (68, 37810), (71, 37786), (75, 37756),

Gene: Jeffabunny\_61 Start: 37682, Stop: 37197, Start Num: 24

Candidate Starts for Jeffabunny\_61:

(2, 37829), (Start: 11 @37736 has 5 MA's), (Start: 24 @37682 has 23 MA's), (Start: 31 @37625 has 2 MA's), (38, 37541), (43, 37481), (59, 37355), (63, 37322), (65, 37304), (71, 37268), (73, 37250), (75, 37238), (76, 37235),

Gene: Jorgensen\_55 Start: 39080, Stop: 38559, Start Num: 17

Candidate Starts for Jorgensen\_55:

(4, 39203), (Start: 17 @39080 has 124 MA's), (Start: 28 @39029 has 29 MA's), (Start: 29 @39017 has 5 MA's), (39, 38888), (42, 38867), (43, 38849), (52, 38789), (59, 38723), (60, 38720), (63, 38690), (65, 38672), (71, 38636), (75, 38606),

Gene: JuliaChild\_56 Start: 38881, Stop: 38408, Start Num: 28

Candidate Starts for JuliaChild\_56:

(4, 39055), (Start: 17 @38932 has 124 MA's), (Start: 28 @38881 has 29 MA's), (Start: 29 @38869 has 5 MA's), (39, 38740), (42, 38719), (43, 38701), (59, 38575), (63, 38542), (65, 38524), (71, 38488), (75, 38455), (76, 38452),

Gene: KSSJEB\_54 Start: 38647, Stop: 38189, Start Num: 29

Candidate Starts for KSSJEB\_54:

(4, 38833), (Start: 17 @38710 has 124 MA's), (Start: 28 @38659 has 29 MA's), (Start: 29 @38647 has 5 MA's), (39, 38518), (42, 38497), (43, 38479), (59, 38353), (63, 38320), (65, 38302), (71, 38266), (75, 38236),

Gene: Kanely\_57 Start: 39730, Stop: 39209, Start Num: 17

Candidate Starts for Kanely\_57:

(Start: 17 @39730 has 124 MA's), (Start: 24 @39706 has 23 MA's), (Start: 28 @39679 has 29 MA's), (Start: 29 @39667 has 5 MA's), (Start: 32 @39619 has 1 MA's), (41, 39520), (46, 39469), (59, 39373), (63, 39340), (65, 39322), (71, 39286), (75, 39256),

Gene: Kenmech\_58 Start: 40856, Stop: 40332, Start Num: 17

Candidate Starts for Kenmech\_58:

(Start: 17 @40856 has 124 MA's), (Start: 24 @40832 has 23 MA's), (Start: 28 @40805 has 29 MA's), (Start: 29 @40793 has 5 MA's), (Start: 32 @40745 has 1 MA's), (46, 40595), (59, 40499), (60, 40496), (63, 40466), (65, 40448), (71, 40412), (75, 40379), (76, 40376),

Gene: KikiBouba\_55 Start: 39332, Stop: 38811, Start Num: 17

Candidate Starts for KikiBouba\_55:

(Start: 17 @39332 has 124 MA's), (Start: 24 @39308 has 23 MA's), (Start: 28 @39281 has 29 MA's), (Start: 29 @39269 has 5 MA's), (Start: 32 @39221 has 1 MA's), (41, 39122), (46, 39071), (59, 38975), (63, 38942), (65, 38924), (71, 38888), (75, 38858),

Gene: Killigrew\_55 Start: 39910, Stop: 39389, Start Num: 17

Candidate Starts for Killigrew\_55:

(4, 40033), (Start: 17 @39910 has 124 MA's), (Start: 28 @39859 has 29 MA's), (Start: 29 @39847 has 5 MA's), (39, 39718), (42, 39697), (43, 39679), (59, 39553), (63, 39520), (65, 39502), (71, 39466), (75, 39436),

Gene: Kinmap\_57 Start: 37075, Stop: 36674, Start Num: 32

Candidate Starts for Kinmap\_57:

(2, 37303), (Start: 11 @37210 has 5 MA's), (Start: 24 @37162 has 23 MA's), (Start: 28 @37135 has 29 MA's), (Start: 31 @37105 has 2 MA's), (Start: 32 @37075 has 1 MA's), (37, 37027), (43, 36961), (52, 36901), (53, 36895), (55, 36880), (63, 36802), (65, 36784), (71, 36748), (75, 36718), (76, 36715),

Gene: Koduck\_60 Start: 38151, Stop: 37723, Start Num: 31

Candidate Starts for Koduck\_60:

(2, 38358), (Start: 11 @38265 has 5 MA's), (Start: 24 @38208 has 23 MA's), (Start: 28 @38181 has 29 MA's), (Start: 31 @38151 has 2 MA's), (38, 38067), (43, 38007), (52, 37947), (59, 37881), (63, 37848), (65, 37830), (71, 37794),

Gene: L5\_57 Start: 38268, Stop: 37810, Start Num: 28

Candidate Starts for L5\_57:

(2, 38445), (Start: 11 @38352 has 5 MA's), (Start: 24 @38295 has 23 MA's), (Start: 28 @38268 has 29 MA's), (Start: 31 @38238 has 2 MA's), (38, 38154), (43, 38094), (52, 38034), (59, 37968), (63, 37935), (65, 37917), (71, 37881),

Gene: Lamina13\_55 Start: 38765, Stop: 38244, Start Num: 17

Candidate Starts for Lamina13\_55:

(Start: 17 @38765 has 124 MA's), (Start: 24 @38741 has 23 MA's), (Start: 28 @38714 has 29 MA's), (Start: 29 @38702 has 5 MA's), (Start: 32 @38654 has 1 MA's), (46, 38504), (59, 38408), (63, 38375), (65, 38357), (71, 38321), (75, 38291),

Gene: Lannister\_41 Start: 29083, Stop: 29505, Start Num: 34

Candidate Starts for Lannister\_41:

(1, 28840), (2, 28855), (3, 28858), (Start: 34 @29083 has 2 MA's), (37, 29140), (38, 29146), (39, 29167), (40, 29176), (44, 29212), (46, 29236), (48, 29248), (51, 29257), (52, 29266), (57, 29311), (59, 29332), (70, 29413), (72, 29434), (79, 29482),

Gene: Legacy\_39 Start: 27950, Stop: 28456, Start Num: 24

Candidate Starts for Legacy\_39:

(1, 27791), (2, 27806), (3, 27809), (Start: 24 @27950 has 23 MA's), (Start: 34 @28034 has 2 MA's), (37, 28091), (38, 28097), (39, 28118), (40, 28127), (44, 28163), (46, 28187), (48, 28199), (51, 28208), (52, 28217), (57, 28262), (70, 28364), (72, 28385), (79, 28433),

Gene: Levia\_52 Start: 38553, Stop: 38032, Start Num: 17

Candidate Starts for Levia\_52:

(Start: 17 @38553 has 124 MA's), (Start: 24 @38529 has 23 MA's), (Start: 28 @38502 has 29 MA's), (Start: 29 @38490 has 5 MA's), (Start: 32 @38442 has 1 MA's), (46, 38292), (59, 38196), (63, 38163), (65, 38145), (71, 38109), (75, 38079),

Gene: Leviticus\_39 Start: 27979, Stop: 28485, Start Num: 24

Candidate Starts for Leviticus\_39:

(1, 27820), (2, 27835), (3, 27838), (Start: 24 @27979 has 23 MA's), (Start: 34 @28063 has 2 MA's), (37, 28120), (38, 28126), (39, 28147), (40, 28156), (44, 28192), (46, 28216), (48, 28228), (51, 28237), (52, 28246), (57, 28291), (70, 28393), (72, 28414), (79, 28462),

Gene: Licorice\_57 Start: 41079, Stop: 40558, Start Num: 17

Candidate Starts for Licorice\_57:

(Start: 17 @41079 has 124 MA's), (Start: 24 @41055 has 23 MA's), (Start: 28 @41028 has 29 MA's), (Start: 29 @41016 has 5 MA's), (Start: 32 @40968 has 1 MA's), (41, 40869), (46, 40818), (59, 40722), (63, 40689), (65, 40671), (71, 40635), (75, 40605),

Gene: LilBib\_55 Start: 40493, Stop: 39969, Start Num: 17

Candidate Starts for LilBib\_55:

(Start: 17 @40493 has 124 MA's), (Start: 24 @40469 has 23 MA's), (Start: 28 @40442 has 29 MA's), (Start: 29 @40430 has 5 MA's), (Start: 32 @40382 has 1 MA's), (46, 40232), (59, 40136), (60, 40133), (63, 40103), (65, 40085), (71, 40049), (75, 40016), (76, 40013),

Gene: Lilleskat\_57 Start: 38739, Stop: 38227, Start Num: 14

Candidate Starts for Lilleskat\_57:

(2, 38856), (Start: 11 @38763 has 5 MA's), (Start: 14 @38739 has 3 MA's), (Start: 24 @38715 has 23 MA's), (Start: 28 @38688 has 29 MA's), (Start: 30 @38673 has 1 MA's), (37, 38577), (38, 38571), (41, 38532), (43, 38511), (59, 38385), (63, 38352), (71, 38298), (75, 38268),

Gene: Lillie\_48 Start: 35031, Stop: 34621, Start Num: 33

Candidate Starts for Lillie\_48:

(2, 35280), (16, 35157), (Start: 24 @35121 has 23 MA's), (Start: 28 @35094 has 29 MA's), (Start: 31 @35064 has 2 MA's), (Start: 32 @35034 has 1 MA's), (Start: 33 @35031 has 2 MA's), (Start: 34

@35025 has 2 MA's), (37, 34974), (41, 34929), (43, 34908), (52, 34848), (53, 34842), (73, 34677), (76, 34662),

Gene: LochMonster\_56 Start: 38189, Stop: 37716, Start Num: 28

Candidate Starts for LochMonster\_56:

(2, 38375), (Start: 11 @38282 has 5 MA's), (Start: 13 @38264 has 1 MA's), (Start: 19 @38228 has 2 MA's), (Start: 24 @38216 has 23 MA's), (Start: 28 @38189 has 29 MA's), (Start: 30 @38174 has 1 MA's), (37, 38069), (52, 37943), (53, 37937), (55, 37922), (56, 37907), (65, 37826), (69, 37799), (71, 37790), (80, 37724),

Gene: Lockley\_53 Start: 38634, Stop: 38164, Start Num: 28

Candidate Starts for Lockley\_53:

(Start: 17 @38685 has 124 MA's), (Start: 24 @38661 has 23 MA's), (Start: 28 @38634 has 29 MA's), (Start: 29 @38622 has 5 MA's), (Start: 32 @38574 has 1 MA's), (46, 38424), (59, 38328), (63, 38295), (65, 38277), (71, 38241), (75, 38211),

Gene: LunarLander\_56 Start: 39012, Stop: 38491, Start Num: 17

Candidate Starts for LunarLander\_56:

(Start: 17 @39012 has 124 MA's), (Start: 24 @38988 has 23 MA's), (Start: 28 @38961 has 29 MA's), (Start: 29 @38949 has 5 MA's), (Start: 32 @38901 has 1 MA's), (41, 38802), (46, 38751), (59, 38655), (60, 38652), (63, 38622), (65, 38604), (66, 38601), (71, 38568), (75, 38538), (76, 38535),

Gene: Makemake\_55 Start: 39644, Stop: 39120, Start Num: 17

Candidate Starts for Makemake\_55:

(Start: 17 @39644 has 124 MA's), (Start: 24 @39620 has 23 MA's), (Start: 28 @39593 has 29 MA's), (Start: 29 @39581 has 5 MA's), (Start: 32 @39533 has 1 MA's), (46, 39383), (59, 39287), (60, 39284), (63, 39254), (65, 39236), (71, 39200), (75, 39167), (76, 39164),

Gene: Marcell\_52 Start: 38337, Stop: 37816, Start Num: 17

Candidate Starts for Marcell\_52:

(Start: 17 @38337 has 124 MA's), (Start: 24 @38313 has 23 MA's), (Start: 28 @38286 has 29 MA's), (Start: 29 @38274 has 5 MA's), (Start: 32 @38226 has 1 MA's), (41, 38127), (46, 38076), (59, 37980), (60, 37977), (63, 37947), (65, 37929), (71, 37893), (75, 37863),

Gene: Marchy\_49 Start: 36246, Stop: 35725, Start Num: 17

Candidate Starts for Marchy\_49:

(Start: 17 @36246 has 124 MA's), (Start: 24 @36222 has 23 MA's), (Start: 28 @36195 has 29 MA's), (Start: 29 @36183 has 5 MA's), (Start: 32 @36135 has 1 MA's), (41, 36036), (46, 35985), (59, 35889), (63, 35856), (65, 35838), (71, 35802), (75, 35772),

Gene: Marco3\_58 Start: 40921, Stop: 40397, Start Num: 17

Candidate Starts for Marco3\_58:

(Start: 17 @40921 has 124 MA's), (Start: 24 @40897 has 23 MA's), (Start: 28 @40870 has 29 MA's), (Start: 29 @40858 has 5 MA's), (Start: 32 @40810 has 1 MA's), (46, 40660), (59, 40564), (60, 40561), (63, 40531), (65, 40513), (71, 40477), (75, 40444), (76, 40441),

Gene: Marge\_54 Start: 39202, Stop: 38705, Start Num: 24

Candidate Starts for Marge\_54:

(Start: 17 @39226 has 124 MA's), (Start: 24 @39202 has 23 MA's), (Start: 28 @39175 has 29 MA's), (Start: 29 @39163 has 5 MA's), (Start: 32 @39115 has 1 MA's), (41, 39016), (46, 38965), (60, 38866), (63, 38836), (65, 38818), (71, 38782), (75, 38752),

Gene: Marsha\_54 Start: 39767, Stop: 39246, Start Num: 17

Candidate Starts for Marsha\_54:

(Start: 10 @39824 has 1 MA's), (Start: 17 @39767 has 124 MA's), (Start: 24 @39743 has 23 MA's), (Start: 28 @39716 has 29 MA's), (Start: 29 @39704 has 5 MA's), (Start: 32 @39656 has 1 MA's), (41, 39557), (46, 39506), (59, 39410), (63, 39377), (65, 39359), (71, 39323), (75, 39293),

Gene: MaryBeth\_54 Start: 39564, Stop: 39043, Start Num: 17

Candidate Starts for MaryBeth\_54:

(Start: 17 @39564 has 124 MA's), (Start: 24 @39540 has 23 MA's), (Start: 28 @39513 has 29 MA's), (Start: 29 @39501 has 5 MA's), (Start: 32 @39453 has 1 MA's), (46, 39303), (59, 39207), (63, 39174), (65, 39156), (71, 39120), (75, 39090),

Gene: McGuire\_56 Start: 38808, Stop: 38287, Start Num: 17

Candidate Starts for McGuire\_56:

(Start: 17 @38808 has 124 MA's), (Start: 24 @38784 has 23 MA's), (Start: 28 @38757 has 29 MA's), (Start: 29 @38745 has 5 MA's), (Start: 32 @38697 has 1 MA's), (41, 38598), (46, 38547), (59, 38451), (63, 38418), (65, 38400), (71, 38364), (75, 38334),

Gene: McSinger\_55 Start: 38954, Stop: 38433, Start Num: 17

Candidate Starts for McSinger\_55:

(Start: 17 @38954 has 124 MA's), (Start: 24 @38930 has 23 MA's), (Start: 28 @38903 has 29 MA's), (Start: 29 @38891 has 5 MA's), (Start: 32 @38843 has 1 MA's), (41, 38744), (46, 38693), (59, 38597), (63, 38564), (65, 38546), (71, 38510), (75, 38480),

Gene: MegTheThird\_58 Start: 38380, Stop: 38030, Start Num: 37

Candidate Starts for MegTheThird\_58:

(2, 38656), (Start: 11 @38563 has 5 MA's), (Start: 24 @38515 has 23 MA's), (Start: 28 @38488 has 29 MA's), (37, 38380), (38, 38374), (43, 38314), (48, 38272), (52, 38254), (55, 38233), (59, 38188), (71, 38101),

Gene: MetalQZJ\_53 Start: 39564, Stop: 39043, Start Num: 17

Candidate Starts for MetalQZJ\_53:

(Start: 17 @39564 has 124 MA's), (Start: 24 @39540 has 23 MA's), (Start: 28 @39513 has 29 MA's), (Start: 29 @39501 has 5 MA's), (Start: 32 @39453 has 1 MA's), (46, 39303), (59, 39207), (63, 39174), (65, 39156), (71, 39120), (75, 39090),

Gene: MilleFeuille\_51 Start: 38723, Stop: 38202, Start Num: 17

Candidate Starts for MilleFeuille\_51:

(Start: 17 @38723 has 124 MA's), (Start: 24 @38699 has 23 MA's), (Start: 28 @38672 has 29 MA's), (Start: 29 @38660 has 5 MA's), (Start: 32 @38612 has 1 MA's), (46, 38462), (59, 38366), (60, 38363), (63, 38333), (65, 38315), (71, 38279), (75, 38249),

Gene: Monet\_57 Start: 39984, Stop: 39463, Start Num: 17

Candidate Starts for Monet\_57:

(Start: 17 @39984 has 124 MA's), (Start: 24 @39960 has 23 MA's), (Start: 28 @39933 has 29 MA's), (Start: 29 @39921 has 5 MA's), (Start: 32 @39873 has 1 MA's), (41, 39774), (46, 39723), (59, 39627), (63, 39594), (65, 39576), (71, 39540), (75, 39510),

Gene: Moose\_54 Start: 38503, Stop: 37982, Start Num: 17

Candidate Starts for Moose\_54:

(Start: 17 @38503 has 124 MA's), (Start: 24 @38479 has 23 MA's), (Start: 28 @38452 has 29 MA's), (Start: 29 @38440 has 5 MA's), (Start: 32 @38392 has 1 MA's), (41, 38293), (46, 38242), (59, 38146), (63, 38113), (65, 38095), (71, 38059), (75, 38029),

Gene: Mryolo\_52 Start: 39030, Stop: 38509, Start Num: 17

Candidate Starts for Mryolo\_52:

(Start: 17 @39030 has 124 MA's), (Start: 24 @39006 has 23 MA's), (Start: 28 @38979 has 29 MA's), (Start: 29 @38967 has 5 MA's), (Start: 32 @38919 has 1 MA's), (41, 38820), (46, 38769), (59, 38673), (60, 38670), (63, 38640), (65, 38622), (71, 38586), (75, 38556),

Gene: Mule\_52 Start: 37269, Stop: 36745, Start Num: 17

Candidate Starts for Mule\_52:

(Start: 17 @37269 has 124 MA's), (Start: 24 @37245 has 23 MA's), (Start: 28 @37218 has 29 MA's), (Start: 29 @37206 has 5 MA's), (Start: 32 @37158 has 1 MA's), (41, 37059), (46, 37008), (59, 36912), (63, 36879), (65, 36861), (71, 36825), (75, 36792), (76, 36789),

Gene: Museum\_56 Start: 39379, Stop: 38858, Start Num: 17

Candidate Starts for Museum\_56:

(4, 39502), (Start: 17 @39379 has 124 MA's), (Start: 28 @39328 has 29 MA's), (Start: 29 @39316 has 5 MA's), (36, 39235), (39, 39187), (42, 39166), (43, 39148), (52, 39088), (59, 39022), (63, 38989), (65, 38971), (71, 38935), (75, 38905), (76, 38902),

Gene: Myxus\_59 Start: 38686, Stop: 38225, Start Num: 28

Candidate Starts for Myxus\_59:

(2, 38854), (Start: 11 @38761 has 5 MA's), (Start: 14 @38737 has 3 MA's), (Start: 24 @38713 has 23 MA's), (Start: 28 @38686 has 29 MA's), (Start: 30 @38671 has 1 MA's), (37, 38575), (38, 38569), (41, 38530), (43, 38509), (53, 38443), (59, 38383), (63, 38350), (71, 38296),

Gene: Naca\_54 Start: 38823, Stop: 38254, Start Num: 11

Candidate Starts for Naca\_54:

(2, 38916), (Start: 11 @38823 has 5 MA's), (Start: 13 @38805 has 1 MA's), (Start: 19 @38763 has 2 MA's), (Start: 24 @38751 has 23 MA's), (Start: 28 @38724 has 29 MA's), (Start: 29 @38712 has 5 MA's), (Start: 30 @38709 has 1 MA's), (43, 38547), (53, 38481), (54, 38472), (56, 38451), (59, 38421), (61, 38415), (63, 38388), (65, 38370), (69, 38343), (71, 38334), (73, 38316), (75, 38304), (76, 38301),

Gene: Nerdos\_38 Start: 27974, Stop: 28480, Start Num: 24

Candidate Starts for Nerdos\_38:

(1, 27815), (2, 27830), (3, 27833), (Start: 24 @27974 has 23 MA's), (Start: 34 @28058 has 2 MA's), (37, 28115), (38, 28121), (39, 28142), (40, 28151), (44, 28187), (46, 28211), (48, 28223), (51, 28232), (52, 28241), (57, 28286), (70, 28388), (72, 28409), (79, 28457),

Gene: Nerujay\_57 Start: 39805, Stop: 39284, Start Num: 17

Candidate Starts for Nerujay\_57:

(Start: 17 @39805 has 124 MA's), (Start: 24 @39781 has 23 MA's), (Start: 28 @39754 has 29 MA's), (Start: 29 @39742 has 5 MA's), (Start: 32 @39694 has 1 MA's), (41, 39595), (46, 39544), (59, 39448), (63, 39415), (65, 39397), (71, 39361), (75, 39331),

Gene: Nhonho\_54 Start: 40151, Stop: 39630, Start Num: 17

Candidate Starts for Nhonho\_54:

(Start: 17 @40151 has 124 MA's), (Start: 24 @40127 has 23 MA's), (Start: 28 @40100 has 29 MA's), (Start: 29 @40088 has 5 MA's), (Start: 32 @40040 has 1 MA's), (46, 39890), (59, 39794), (63, 39761), (65, 39743), (71, 39707), (75, 39677),

Gene: NicoleTera\_57 Start: 38899, Stop: 38414, Start Num: 24

Candidate Starts for NicoleTera\_57:

(Start: 11 @38953 has 5 MA's), (Start: 24 @38899 has 23 MA's), (Start: 28 @38872 has 29 MA's), (Start: 31 @38842 has 2 MA's), (37, 38764), (38, 38758), (43, 38698), (53, 38632), (59, 38572), (63,

38539), (65, 38521), (71, 38485), (75, 38455),

Gene: Niza\_57 Start: 40756, Stop: 40286, Start Num: 28

Candidate Starts for Niza\_57:

(4, 40930), (Start: 17 @40807 has 124 MA's), (Start: 28 @40756 has 29 MA's), (Start: 29 @40744 has 5 MA's), (36, 40663), (39, 40615), (42, 40594), (43, 40576), (52, 40516), (59, 40450), (63, 40417), (65, 40399), (71, 40363), (75, 40333),

Gene: Noxious\_54 Start: 39523, Stop: 39002, Start Num: 17

Candidate Starts for Noxious\_54:

(Start: 17 @39523 has 124 MA's), (Start: 24 @39499 has 23 MA's), (Start: 28 @39472 has 29 MA's), (Start: 29 @39460 has 5 MA's), (Start: 32 @39412 has 1 MA's), (41, 39313), (46, 39262), (59, 39166), (63, 39133), (65, 39115), (71, 39079), (75, 39049),

Gene: Onglai\_57 Start: 37078, Stop: 36566, Start Num: 14

Candidate Starts for Onglai\_57:

(2, 37195), (Start: 11 @37102 has 5 MA's), (Start: 14 @37078 has 3 MA's), (Start: 24 @37054 has 23 MA's), (Start: 28 @37027 has 29 MA's), (Start: 30 @37012 has 1 MA's), (37, 36916), (38, 36910), (41, 36871), (43, 36850), (53, 36784), (59, 36724), (63, 36691), (71, 36637), (75, 36607),

Gene: Oogway\_54 Start: 39161, Stop: 38640, Start Num: 17

Candidate Starts for Oogway\_54:

(Start: 17 @39161 has 124 MA's), (Start: 24 @39137 has 23 MA's), (Start: 28 @39110 has 29 MA's), (Start: 29 @39098 has 5 MA's), (Start: 32 @39050 has 1 MA's), (41, 38951), (46, 38900), (59, 38804), (60, 38801), (63, 38771), (65, 38753), (66, 38750), (71, 38717), (75, 38687), (76, 38684),

Gene: PP\_58 Start: 42225, Stop: 41752, Start Num: 28

Candidate Starts for PP\_58:

(2, 42411), (7, 42375), (Start: 11 @42318 has 5 MA's), (15, 42288), (Start: 24 @42252 has 23 MA's), (Start: 28 @42225 has 29 MA's), (Start: 33 @42162 has 2 MA's), (Start: 34 @42156 has 2 MA's), (37, 42105), (53, 41973), (55, 41958), (56, 41943), (59, 41913), (67, 41853), (68, 41850), (69, 41835), (71, 41826), (74, 41799), (75, 41796), (78, 41772), (80, 41760),

Gene: PacerPaul\_54 Start: 39512, Stop: 38991, Start Num: 17

Candidate Starts for PacerPaul\_54:

(Start: 17 @39512 has 124 MA's), (Start: 24 @39488 has 23 MA's), (Start: 28 @39461 has 29 MA's), (Start: 29 @39449 has 5 MA's), (Start: 32 @39401 has 1 MA's), (41, 39302), (46, 39251), (59, 39155), (63, 39122), (65, 39104), (71, 39068), (75, 39038),

Gene: PackMan\_58 Start: 38686, Stop: 38225, Start Num: 28

Candidate Starts for PackMan\_58:

(2, 38854), (Start: 11 @38761 has 5 MA's), (Start: 14 @38737 has 3 MA's), (Start: 24 @38713 has 23 MA's), (Start: 28 @38686 has 29 MA's), (Start: 30 @38671 has 1 MA's), (37, 38575), (38, 38569), (41, 38530), (43, 38509), (53, 38443), (59, 38383), (63, 38350), (71, 38296),

Gene: PainterBoy\_61 Start: 39028, Stop: 38537, Start Num: 24

Candidate Starts for PainterBoy\_61:

(2, 39175), (Start: 11 @39082 has 5 MA's), (Start: 24 @39028 has 23 MA's), (Start: 28 @39001 has 29 MA's), (Start: 30 @38986 has 1 MA's), (Start: 31 @38971 has 2 MA's), (38, 38884), (43, 38824), (49, 38779), (56, 38725), (59, 38695), (65, 38644), (71, 38608),

Gene: Panamaxus\_55 Start: 38406, Stop: 37852, Start Num: 12

Candidate Starts for Panamaxus\_55:

(2, 38514), (Start: 11 @38421 has 5 MA's), (Start: 12 @38406 has 2 MA's), (Start: 19 @38367 has 2 MA's), (Start: 24 @38355 has 23 MA's), (Start: 28 @38328 has 29 MA's), (37, 38208), (42, 38160), (48, 38100), (52, 38082), (53, 38076), (55, 38061), (56, 38046), (71, 37929), (73, 37911),

Gene: Papez\_57 Start: 41106, Stop: 40585, Start Num: 17

Candidate Starts for Papez\_57:

(Start: 17 @41106 has 124 MA's), (Start: 24 @41082 has 23 MA's), (Start: 28 @41055 has 29 MA's), (Start: 29 @41043 has 5 MA's), (Start: 32 @40995 has 1 MA's), (46, 40845), (59, 40749), (63, 40716), (65, 40698), (71, 40662), (75, 40632),

Gene: Paphu\_53 Start: 38516, Stop: 37992, Start Num: 17

Candidate Starts for Paphu\_53:

(Start: 17 @38516 has 124 MA's), (Start: 24 @38492 has 23 MA's), (Start: 28 @38465 has 29 MA's), (Start: 29 @38453 has 5 MA's), (Start: 32 @38405 has 1 MA's), (46, 38255), (59, 38159), (60, 38156), (63, 38126), (65, 38108), (71, 38072), (75, 38039), (76, 38036),

Gene: Paraselene\_52 Start: 39621, Stop: 39097, Start Num: 17

Candidate Starts for Paraselene\_52:

(Start: 17 @39621 has 124 MA's), (Start: 24 @39597 has 23 MA's), (Start: 28 @39570 has 29 MA's), (Start: 29 @39558 has 5 MA's), (Start: 32 @39510 has 1 MA's), (41, 39411), (46, 39360), (59, 39264), (60, 39261), (63, 39231), (65, 39213), (71, 39177), (75, 39144), (76, 39141),

Gene: Parliament\_54 Start: 39241, Stop: 38720, Start Num: 17

Candidate Starts for Parliament\_54:

(Start: 17 @39241 has 124 MA's), (Start: 24 @39217 has 23 MA's), (Start: 28 @39190 has 29 MA's), (Start: 29 @39178 has 5 MA's), (Start: 32 @39130 has 1 MA's), (41, 39031), (46, 38980), (59, 38884), (63, 38851), (65, 38833), (71, 38797), (75, 38767),

Gene: PascalRango\_55 Start: 39459, Stop: 38938, Start Num: 17

Candidate Starts for PascalRango\_55:

(Start: 17 @39459 has 124 MA's), (Start: 24 @39435 has 23 MA's), (Start: 28 @39408 has 29 MA's), (Start: 29 @39396 has 5 MA's), (Start: 32 @39348 has 1 MA's), (41, 39249), (46, 39198), (59, 39102), (63, 39069), (65, 39051), (71, 39015), (75, 38985),

Gene: Payneful\_54 Start: 38963, Stop: 38442, Start Num: 17

Candidate Starts for Payneful\_54:

(Start: 17 @38963 has 124 MA's), (Start: 24 @38939 has 23 MA's), (Start: 28 @38912 has 29 MA's), (Start: 29 @38900 has 5 MA's), (Start: 32 @38852 has 1 MA's), (41, 38753), (46, 38702), (59, 38606), (63, 38573), (65, 38555), (71, 38519), (75, 38489),

Gene: Pelly\_55 Start: 39243, Stop: 38719, Start Num: 17

Candidate Starts for Pelly\_55:

(Start: 17 @39243 has 124 MA's), (Start: 24 @39219 has 23 MA's), (Start: 28 @39192 has 29 MA's), (Start: 29 @39180 has 5 MA's), (Start: 32 @39132 has 1 MA's), (46, 38982), (59, 38886), (60, 38883), (63, 38853), (65, 38835), (71, 38799), (75, 38766), (76, 38763),

Gene: Pepe\_51 Start: 37732, Stop: 37211, Start Num: 17

Candidate Starts for Pepe\_51:

(Start: 17 @37732 has 124 MA's), (Start: 24 @37708 has 23 MA's), (Start: 28 @37681 has 29 MA's), (Start: 29 @37669 has 5 MA's), (Start: 32 @37621 has 1 MA's), (46, 37471), (59, 37375), (63, 37342), (65, 37324), (71, 37288), (75, 37258),

Gene: Peterson\_59 Start: 41402, Stop: 40878, Start Num: 17

Candidate Starts for Peterson\_59:

(Start: 17 @41402 has 124 MA's), (Start: 24 @41378 has 23 MA's), (Start: 28 @41351 has 29 MA's), (Start: 29 @41339 has 5 MA's), (Start: 32 @41291 has 1 MA's), (46, 41141), (59, 41045), (60, 41042), (63, 41012), (65, 40994), (71, 40958), (75, 40925), (76, 40922),

Gene: PhailMary\_47 Start: 35416, Stop: 34943, Start Num: 28

Candidate Starts for PhailMary\_47:

(2, 35602), (16, 35479), (Start: 24 @35443 has 23 MA's), (Start: 28 @35416 has 29 MA's), (Start: 31 @35386 has 2 MA's), (Start: 32 @35356 has 1 MA's), (Start: 33 @35353 has 2 MA's), (Start: 34 @35347 has 2 MA's), (37, 35296), (41, 35251), (43, 35230), (53, 35164), (73, 34999), (76, 34984),

Gene: PherrisBueller\_54 Start: 37881, Stop: 37360, Start Num: 17

Candidate Starts for PherrisBueller\_54:

(Start: 17 @37881 has 124 MA's), (Start: 24 @37857 has 23 MA's), (Start: 28 @37830 has 29 MA's), (Start: 29 @37818 has 5 MA's), (Start: 32 @37770 has 1 MA's), (46, 37620), (59, 37524), (63, 37491), (65, 37473), (68, 37461), (71, 37437), (75, 37407),

Gene: PhineBark\_54 Start: 39571, Stop: 39050, Start Num: 17

Candidate Starts for PhineBark\_54:

(Start: 17 @39571 has 124 MA's), (Start: 24 @39547 has 23 MA's), (Start: 28 @39520 has 29 MA's), (Start: 29 @39508 has 5 MA's), (Start: 32 @39460 has 1 MA's), (46, 39310), (59, 39214), (63, 39181), (65, 39163), (71, 39127), (75, 39097),

Gene: Phlippers\_54 Start: 39962, Stop: 39441, Start Num: 17

Candidate Starts for Phlippers\_54:

(4, 40085), (Start: 17 @39962 has 124 MA's), (Start: 28 @39911 has 29 MA's), (Start: 29 @39899 has 5 MA's), (39, 39770), (42, 39749), (43, 39731), (52, 39671), (59, 39605), (63, 39572), (65, 39554), (71, 39518), (75, 39488),

Gene: PhrostyMug\_54 Start: 39443, Stop: 38919, Start Num: 17

Candidate Starts for PhrostyMug\_54:

(Start: 17 @39443 has 124 MA's), (Start: 24 @39419 has 23 MA's), (Start: 28 @39392 has 29 MA's), (Start: 29 @39380 has 5 MA's), (Start: 32 @39332 has 1 MA's), (41, 39233), (46, 39182), (59, 39086), (63, 39053), (65, 39035), (71, 38999), (75, 38966), (76, 38963),

Gene: PinkPlastic\_55 Start: 38843, Stop: 38322, Start Num: 17

Candidate Starts for PinkPlastic\_55:

(Start: 10 @38900 has 1 MA's), (Start: 17 @38843 has 124 MA's), (Start: 24 @38819 has 23 MA's), (Start: 28 @38792 has 29 MA's), (Start: 29 @38780 has 5 MA's), (Start: 32 @38732 has 1 MA's), (46, 38582), (59, 38486), (63, 38453), (65, 38435), (71, 38399), (75, 38369),

Gene: Pinto\_55 Start: 39447, Stop: 38926, Start Num: 17

Candidate Starts for Pinto\_55:

(Start: 17 @39447 has 124 MA's), (Start: 24 @39423 has 23 MA's), (Start: 28 @39396 has 29 MA's), (Start: 29 @39384 has 5 MA's), (Start: 32 @39336 has 1 MA's), (46, 39186), (59, 39090), (60, 39087), (63, 39057), (65, 39039), (71, 39003), (75, 38973),

Gene: Pioneer\_59 Start: 38783, Stop: 38322, Start Num: 28

Candidate Starts for Pioneer\_59:

(2, 38951), (Start: 11 @38858 has 5 MA's), (Start: 14 @38834 has 3 MA's), (Start: 24 @38810 has 23 MA's), (Start: 28 @38783 has 29 MA's), (Start: 30 @38768 has 1 MA's), (37, 38672), (38, 38666), (41, 38627), (43, 38606), (59, 38480), (63, 38447), (71, 38393), (75, 38363),

Gene: Pippin\_56 Start: 39135, Stop: 38614, Start Num: 17

Candidate Starts for Pippin\_56:

(Start: 17 @39135 has 124 MA's), (Start: 24 @39111 has 23 MA's), (Start: 28 @39084 has 29 MA's), (Start: 29 @39072 has 5 MA's), (Start: 32 @39024 has 1 MA's), (46, 38874), (59, 38778), (60, 38775), (63, 38745), (65, 38727), (71, 38691), (75, 38661),

Gene: PowerRanger\_54 Start: 40356, Stop: 39832, Start Num: 17

Candidate Starts for PowerRanger\_54:

(Start: 17 @40356 has 124 MA's), (Start: 24 @40332 has 23 MA's), (Start: 28 @40305 has 29 MA's), (Start: 29 @40293 has 5 MA's), (Start: 32 @40245 has 1 MA's), (41, 40146), (46, 40095), (59, 39999), (60, 39996), (63, 39966), (65, 39948), (71, 39912), (76, 39876),

Gene: ProMouse\_56 Start: 39390, Stop: 38869, Start Num: 17

Candidate Starts for ProMouse\_56:

(Start: 17 @39390 has 124 MA's), (Start: 24 @39366 has 23 MA's), (Start: 28 @39339 has 29 MA's), (Start: 29 @39327 has 5 MA's), (Start: 32 @39279 has 1 MA's), (46, 39129), (59, 39033), (63, 39000), (65, 38982), (71, 38946), (75, 38916),

Gene: Pukovnik\_57 Start: 39434, Stop: 38976, Start Num: 28

Candidate Starts for Pukovnik\_57:

(2, 39608), (Start: 11 @39515 has 5 MA's), (Start: 24 @39461 has 23 MA's), (Start: 28 @39434 has 29 MA's), (Start: 30 @39419 has 1 MA's), (Start: 31 @39404 has 2 MA's), (Start: 32 @39374 has 1 MA's), (37, 39326), (38, 39320), (43, 39260), (55, 39179), (59, 39134), (63, 39101), (65, 39083), (71, 39047), (75, 39017),

Gene: Puppet\_55 Start: 39559, Stop: 39038, Start Num: 17

Candidate Starts for Puppet\_55:

(Start: 17 @39559 has 124 MA's), (Start: 24 @39535 has 23 MA's), (Start: 28 @39508 has 29 MA's), (Start: 29 @39496 has 5 MA's), (Start: 32 @39448 has 1 MA's), (41, 39349), (46, 39298), (59, 39202), (60, 39199), (63, 39169), (65, 39151), (66, 39148), (71, 39115), (75, 39085), (76, 39082),

Gene: QTRlifeCrisis\_54 Start: 39511, Stop: 38990, Start Num: 17

Candidate Starts for QTRlifeCrisis\_54:

(Start: 17 @39511 has 124 MA's), (Start: 24 @39487 has 23 MA's), (Start: 28 @39460 has 29 MA's), (Start: 29 @39448 has 5 MA's), (Start: 32 @39400 has 1 MA's), (41, 39301), (46, 39250), (59, 39154), (60, 39151), (63, 39121), (65, 39103), (71, 39067), (75, 39037),

Gene: Qobbit\_59 Start: 38766, Stop: 38254, Start Num: 14

Candidate Starts for Qobbit\_59:

(2, 38883), (Start: 11 @38790 has 5 MA's), (Start: 14 @38766 has 3 MA's), (Start: 24 @38742 has 23 MA's), (Start: 28 @38715 has 29 MA's), (Start: 30 @38700 has 1 MA's), (37, 38604), (38, 38598), (41, 38559), (43, 38538), (53, 38472), (59, 38412), (63, 38379), (71, 38325),

Gene: RER2\_41 Start: 31966, Stop: 31493, Start Num: 28

Candidate Starts for RER2\_41:

(2, 32152), (16, 32029), (Start: 24 @31993 has 23 MA's), (Start: 28 @31966 has 29 MA's), (Start: 31 @31936 has 2 MA's), (Start: 32 @31906 has 1 MA's), (Start: 33 @31903 has 2 MA's), (Start: 34 @31897 has 2 MA's), (37, 31846), (41, 31801), (43, 31780), (52, 31720), (53, 31714), (73, 31549), (76, 31534),

Gene: RGL3\_42 Start: 32920, Stop: 32447, Start Num: 28

Candidate Starts for RGL3\_42:

(2, 33106), (16, 32983), (Start: 24 @32947 has 23 MA's), (Start: 28 @32920 has 29 MA's), (Start: 30 @32905 has 1 MA's), (Start: 34 @32851 has 2 MA's), (37, 32800), (38, 32794), (41, 32755), (43, 32734), (47, 32701), (48, 32692), (52, 32674), (53, 32668), (59, 32608),

Gene: RedRock\_61 Start: 39741, Stop: 39313, Start Num: 31

Candidate Starts for RedRock\_61:

(2, 39945), (Start: 11 @39852 has 5 MA's), (18, 39816), (Start: 24 @39798 has 23 MA's), (Start: 31 @39741 has 2 MA's), (37, 39663), (38, 39657), (41, 39618), (43, 39597), (55, 39516), (59, 39471), (63, 39438), (65, 39420), (71, 39384),

Gene: Rhodalysa\_48 Start: 35031, Stop: 34621, Start Num: 33

Candidate Starts for Rhodalysa\_48:

(2, 35280), (16, 35157), (Start: 24 @35121 has 23 MA's), (Start: 28 @35094 has 29 MA's), (Start: 31 @35064 has 2 MA's), (Start: 32 @35034 has 1 MA's), (Start: 33 @35031 has 2 MA's), (Start: 34 @35025 has 2 MA's), (37, 34974), (41, 34929), (43, 34908), (52, 34848), (53, 34842), (73, 34677), (76, 34662),

Gene: Rhynn\_53 Start: 38251, Stop: 37730, Start Num: 17

Candidate Starts for Rhynn\_53:

(Start: 17 @38251 has 124 MA's), (Start: 24 @38227 has 23 MA's), (Start: 28 @38200 has 29 MA's), (Start: 29 @38188 has 5 MA's), (Start: 32 @38140 has 1 MA's), (46, 37990), (59, 37894), (63, 37861), (65, 37843), (71, 37807), (75, 37777),

Gene: Ringer\_55 Start: 40401, Stop: 39880, Start Num: 17

Candidate Starts for Ringer\_55:

(4, 40524), (Start: 17 @40401 has 124 MA's), (Start: 28 @40350 has 29 MA's), (Start: 29 @40338 has 5 MA's), (36, 40257), (39, 40209), (42, 40188), (43, 40170), (52, 40110), (59, 40044), (63, 40011), (65, 39993), (71, 39957), (75, 39927),

Gene: RockieBear\_54 Start: 38028, Stop: 37480, Start Num: 13

Candidate Starts for RockieBear\_54:

(2, 38139), (Start: 11 @38046 has 5 MA's), (Start: 13 @38028 has 1 MA's), (Start: 19 @37992 has 2 MA's), (Start: 24 @37980 has 23 MA's), (Start: 28 @37953 has 29 MA's), (Start: 30 @37938 has 1 MA's), (37, 37833), (52, 37707), (53, 37701), (55, 37686), (56, 37671), (65, 37590), (69, 37563), (71, 37554), (80, 37488),

Gene: Rubeus\_55 Start: 37291, Stop: 36713, Start Num: 10

Candidate Starts for Rubeus\_55:

(Start: 10 @37291 has 1 MA's), (Start: 17 @37234 has 124 MA's), (Start: 24 @37210 has 23 MA's), (Start: 28 @37183 has 29 MA's), (Start: 29 @37171 has 5 MA's), (Start: 32 @37123 has 1 MA's), (46, 36973), (59, 36877), (60, 36874), (63, 36844), (65, 36826), (71, 36790), (75, 36760),

Gene: Rusticus\_40 Start: 28336, Stop: 28842, Start Num: 24

Candidate Starts for Rusticus\_40:

(1, 28177), (2, 28192), (3, 28195), (Start: 24 @28336 has 23 MA's), (Start: 34 @28420 has 2 MA's), (37, 28477), (38, 28483), (39, 28504), (40, 28513), (44, 28549), (46, 28573), (48, 28585), (50, 28588), (51, 28594), (52, 28603), (57, 28648), (59, 28669), (70, 28750), (72, 28771), (79, 28819),

Gene: Rutherferd\_56 Start: 39470, Stop: 38946, Start Num: 17

Candidate Starts for Rutherferd\_56:

(Start: 17 @39470 has 124 MA's), (Start: 24 @39446 has 23 MA's), (Start: 28 @39419 has 29 MA's), (Start: 29 @39407 has 5 MA's), (Start: 32 @39359 has 1 MA's), (41, 39260), (46, 39209), (59, 39113), (63, 39080), (65, 39062), (71, 39026), (75, 38993), (76, 38990),

Gene: STLscum\_57 Start: 40106, Stop: 39585, Start Num: 17

Candidate Starts for STLscum\_57:

(Start: 17 @40106 has 124 MA's), (Start: 24 @40082 has 23 MA's), (Start: 28 @40055 has 29 MA's), (Start: 29 @40043 has 5 MA's), (Start: 32 @39995 has 1 MA's), (46, 39845), (59, 39749), (63, 39716), (65, 39698), (71, 39662), (75, 39632),

Gene: Sachima\_56 Start: 38719, Stop: 38207, Start Num: 14

Candidate Starts for Sachima\_56:

(2, 38836), (Start: 11 @38743 has 5 MA's), (Start: 14 @38719 has 3 MA's), (Start: 24 @38695 has 23 MA's), (Start: 28 @38668 has 29 MA's), (Start: 30 @38653 has 1 MA's), (37, 38557), (38, 38551), (41, 38512), (43, 38491), (59, 38365), (63, 38332), (71, 38278), (75, 38248),

Gene: Sandaddy\_53 Start: 38800, Stop: 38279, Start Num: 17

Candidate Starts for Sandaddy\_53:

(Start: 17 @38800 has 124 MA's), (Start: 24 @38776 has 23 MA's), (Start: 28 @38749 has 29 MA's), (Start: 29 @38737 has 5 MA's), (Start: 32 @38689 has 1 MA's), (46, 38539), (59, 38443), (60, 38440), (63, 38410), (65, 38392), (71, 38356), (75, 38326),

Gene: Sanya\_52 Start: 39090, Stop: 38569, Start Num: 17

Candidate Starts for Sanya\_52:

(Start: 17 @39090 has 124 MA's), (Start: 24 @39066 has 23 MA's), (Start: 28 @39039 has 29 MA's), (Start: 29 @39027 has 5 MA's), (Start: 32 @38979 has 1 MA's), (46, 38829), (59, 38733), (60, 38730), (63, 38700), (65, 38682), (71, 38646), (75, 38616), (77, 38601),

Gene: SarFire\_52 Start: 38362, Stop: 37841, Start Num: 17

Candidate Starts for SarFire\_52:

(Start: 17 @38362 has 124 MA's), (Start: 24 @38338 has 23 MA's), (Start: 28 @38311 has 29 MA's), (Start: 29 @38299 has 5 MA's), (Start: 32 @38251 has 1 MA's), (46, 38101), (59, 38005), (63, 37972), (65, 37954), (71, 37918), (75, 37888),

Gene: Scherzo\_59 Start: 39023, Stop: 38511, Start Num: 14

Candidate Starts for Scherzo\_59:

(2, 39140), (Start: 11 @39047 has 5 MA's), (Start: 14 @39023 has 3 MA's), (Start: 24 @38999 has 23 MA's), (Start: 28 @38972 has 29 MA's), (Start: 30 @38957 has 1 MA's), (37, 38861), (38, 38855), (41, 38816), (43, 38795), (59, 38669), (63, 38636), (71, 38582), (75, 38552),

Gene: Scowl\_55 Start: 39191, Stop: 38670, Start Num: 17

Candidate Starts for Scowl\_55:

(Start: 17 @39191 has 124 MA's), (Start: 24 @39167 has 23 MA's), (Start: 28 @39140 has 29 MA's), (Start: 29 @39128 has 5 MA's), (Start: 32 @39080 has 1 MA's), (46, 38930), (59, 38834), (63, 38801), (65, 38783), (68, 38771), (71, 38747), (75, 38717),

Gene: Seabiscuit\_57 Start: 38976, Stop: 38455, Start Num: 17

Candidate Starts for Seabiscuit\_57:

(Start: 17 @38976 has 124 MA's), (Start: 24 @38952 has 23 MA's), (Start: 28 @38925 has 29 MA's), (Start: 29 @38913 has 5 MA's), (Start: 32 @38865 has 1 MA's), (41, 38766), (46, 38715), (59, 38619), (63, 38586), (65, 38568), (71, 38532), (75, 38502),

Gene: SkiPole\_59 Start: 39713, Stop: 39255, Start Num: 29

Candidate Starts for SkiPole\_59:

(Start: 17 @39776 has 124 MA's), (Start: 24 @39752 has 23 MA's), (Start: 28 @39725 has 29 MA's), (Start: 29 @39713 has 5 MA's), (Start: 32 @39665 has 1 MA's), (46, 39515), (59, 39419), (63, 39386),

(65, 39368), (71, 39332), (75, 39302),

Gene: Skipitt\_54 Start: 38022, Stop: 37474, Start Num: 13

Candidate Starts for Skipitt\_54:

(2, 38133), (Start: 11 @38040 has 5 MA's), (Start: 13 @38022 has 1 MA's), (Start: 19 @37986 has 2 MA's), (Start: 24 @37974 has 23 MA's), (Start: 28 @37947 has 29 MA's), (Start: 30 @37932 has 1 MA's), (37, 37827), (52, 37701), (53, 37695), (55, 37680), (56, 37665), (65, 37584), (69, 37557), (71, 37548), (80, 37482),

Gene: Slagathor\_57 Start: 40203, Stop: 39679, Start Num: 17

Candidate Starts for Slagathor\_57:

(4, 40326), (Start: 17 @40203 has 124 MA's), (Start: 28 @40152 has 29 MA's), (Start: 29 @40140 has 5 MA's), (39, 40011), (42, 39990), (43, 39972), (59, 39846), (60, 39843), (63, 39813), (65, 39795), (71, 39759), (75, 39726), (76, 39723),

Gene: Smairt\_57 Start: 40436, Stop: 39912, Start Num: 17

Candidate Starts for Smairt\_57:

(Start: 17 @40436 has 124 MA's), (Start: 24 @40412 has 23 MA's), (Start: 28 @40385 has 29 MA's), (Start: 29 @40373 has 5 MA's), (Start: 32 @40325 has 1 MA's), (41, 40226), (46, 40175), (59, 40079), (63, 40046), (65, 40028), (71, 39992), (75, 39959), (76, 39956),

Gene: Smeagol\_57 Start: 40430, Stop: 39909, Start Num: 17

Candidate Starts for Smeagol\_57:

(Start: 17 @40430 has 124 MA's), (Start: 24 @40406 has 23 MA's), (Start: 28 @40379 has 29 MA's), (Start: 29 @40367 has 5 MA's), (Start: 32 @40319 has 1 MA's), (46, 40169), (59, 40073), (63, 40040), (65, 40022), (71, 39986), (75, 39956),

Gene: Snazzy\_54 Start: 38809, Stop: 38285, Start Num: 17

Candidate Starts for Snazzy\_54:

(Start: 17 @38809 has 124 MA's), (Start: 24 @38785 has 23 MA's), (Start: 28 @38758 has 29 MA's), (Start: 29 @38746 has 5 MA's), (Start: 32 @38698 has 1 MA's), (46, 38548), (59, 38452), (60, 38449), (63, 38419), (65, 38401), (71, 38365), (75, 38335), (76, 38332),

Gene: Solon\_53 Start: 38687, Stop: 38163, Start Num: 17

Candidate Starts for Solon\_53:

(Start: 17 @38687 has 124 MA's), (Start: 24 @38663 has 23 MA's), (Start: 28 @38636 has 29 MA's), (Start: 29 @38624 has 5 MA's), (Start: 32 @38576 has 1 MA's), (41, 38477), (46, 38426), (59, 38330), (63, 38297), (65, 38279), (71, 38243), (75, 38210), (76, 38207),

Gene: Sorpresa\_53 Start: 38802, Stop: 38281, Start Num: 17

Candidate Starts for Sorpresa\_53:

(Start: 17 @38802 has 124 MA's), (Start: 24 @38778 has 23 MA's), (Start: 28 @38751 has 29 MA's), (Start: 29 @38739 has 5 MA's), (Start: 32 @38691 has 1 MA's), (46, 38541), (59, 38445), (60, 38442), (63, 38412), (65, 38394), (71, 38358), (75, 38328),

Gene: SpikeBT\_54 Start: 38879, Stop: 38358, Start Num: 17

Candidate Starts for SpikeBT\_54:

(4, 39002), (Start: 17 @38879 has 124 MA's), (Start: 28 @38828 has 29 MA's), (Start: 29 @38816 has 5 MA's), (36, 38735), (39, 38687), (42, 38666), (43, 38648), (52, 38588), (59, 38522), (63, 38489), (65, 38471), (71, 38435), (75, 38405),

Gene: StewieG\_53 Start: 36207, Stop: 35686, Start Num: 17

Candidate Starts for StewieG\_53:

(Start: 17 @36207 has 124 MA's), (Start: 24 @36183 has 23 MA's), (Start: 28 @36156 has 29 MA's), (Start: 29 @36144 has 5 MA's), (Start: 32 @36096 has 1 MA's), (41, 35997), (46, 35946), (59, 35850), (63, 35817), (65, 35799), (71, 35763), (75, 35733),

Gene: StrongArm\_53 Start: 39886, Stop: 39365, Start Num: 17

Candidate Starts for StrongArm\_53:

(Start: 17 @39886 has 124 MA's), (Start: 24 @39862 has 23 MA's), (Start: 28 @39835 has 29 MA's), (Start: 29 @39823 has 5 MA's), (Start: 32 @39775 has 1 MA's), (41, 39676), (46, 39625), (59, 39529), (60, 39526), (63, 39496), (65, 39478), (67, 39469), (71, 39442), (75, 39412), (76, 39409),

Gene: Sudan\_41 Start: 29946, Stop: 30368, Start Num: 34

Candidate Starts for Sudan\_41:

(1, 29703), (2, 29718), (Start: 34 @29946 has 2 MA's), (37, 30003), (38, 30009), (39, 30030), (40, 30039), (46, 30099), (47, 30102), (48, 30111), (57, 30174), (59, 30195), (70, 30276), (72, 30297),

Gene: Sumter\_51 Start: 39346, Stop: 38822, Start Num: 17

Candidate Starts for Sumter\_51:

(Start: 17 @39346 has 124 MA's), (Start: 24 @39322 has 23 MA's), (Start: 28 @39295 has 29 MA's), (Start: 29 @39283 has 5 MA's), (Start: 32 @39235 has 1 MA's), (41, 39136), (46, 39085), (59, 38989), (60, 38986), (63, 38956), (65, 38938), (71, 38902), (75, 38869), (76, 38866),

Gene: Sunhee\_61 Start: 38200, Stop: 37715, Start Num: 24

Candidate Starts for Sunhee\_61:

(2, 38341), (Start: 11 @38248 has 5 MA's), (Start: 24 @38200 has 23 MA's), (37, 38065), (43, 37999), (48, 37957), (55, 37918), (57, 37894), (59, 37873), (71, 37786), (76, 37753),

Gene: SunsetPointe\_39 Start: 27966, Stop: 28472, Start Num: 24

Candidate Starts for SunsetPointe\_39:

(1, 27807), (2, 27822), (3, 27825), (Start: 24 @27966 has 23 MA's), (Start: 34 @28050 has 2 MA's), (37, 28107), (38, 28113), (39, 28134), (40, 28143), (44, 28179), (46, 28203), (48, 28215), (51, 28224), (52, 28233), (57, 28278), (70, 28380), (72, 28401), (79, 28449),

Gene: SwissCheese\_56 Start: 39003, Stop: 38482, Start Num: 17

Candidate Starts for SwissCheese\_56:

(Start: 17 @39003 has 124 MA's), (Start: 24 @38979 has 23 MA's), (Start: 28 @38952 has 29 MA's), (Start: 29 @38940 has 5 MA's), (Start: 32 @38892 has 1 MA's), (41, 38793), (46, 38742), (59, 38646), (63, 38613), (65, 38595), (71, 38559), (75, 38529),

Gene: Target\_55 Start: 37594, Stop: 37070, Start Num: 17

Candidate Starts for Target\_55:

(Start: 17 @37594 has 124 MA's), (Start: 24 @37570 has 23 MA's), (Start: 28 @37543 has 29 MA's), (Start: 29 @37531 has 5 MA's), (Start: 32 @37483 has 1 MA's), (46, 37333), (59, 37237), (60, 37234), (63, 37204), (65, 37186), (71, 37150), (75, 37117), (76, 37114),

Gene: TarsusIV\_57 Start: 38582, Stop: 38097, Start Num: 24

Candidate Starts for TarsusIV\_57:

(Start: 11 @38636 has 5 MA's), (Start: 24 @38582 has 23 MA's), (Start: 31 @38525 has 2 MA's), (37, 38447), (38, 38441), (43, 38381), (45, 38360), (55, 38300), (63, 38222), (71, 38168),

Gene: Tasp14\_56 Start: 39389, Stop: 38868, Start Num: 17

Candidate Starts for Tasp14\_56:

(Start: 17 @39389 has 124 MA's), (Start: 24 @39365 has 23 MA's), (Start: 28 @39338 has 29 MA's), (Start: 29 @39326 has 5 MA's), (Start: 32 @39278 has 1 MA's), (46, 39128), (59, 39032), (63, 38999),

(65, 38981), (71, 38945), (75, 38915),

Gene: Teodoridan\_53 Start: 38328, Stop: 37807, Start Num: 17

Candidate Starts for Teodoridan\_53:

(Start: 17 @38328 has 124 MA's), (Start: 24 @38304 has 23 MA's), (Start: 28 @38277 has 29 MA's),  
(Start: 29 @38265 has 5 MA's), (Start: 32 @38217 has 1 MA's), (46, 38067), (59, 37971), (63, 37938),  
(65, 37920), (71, 37884), (75, 37854),

Gene: Thor\_52 Start: 37720, Stop: 37199, Start Num: 17

Candidate Starts for Thor\_52:

(Start: 17 @37720 has 124 MA's), (Start: 24 @37696 has 23 MA's), (Start: 28 @37669 has 29 MA's),  
(Start: 29 @37657 has 5 MA's), (Start: 32 @37609 has 1 MA's), (46, 37459), (59, 37363), (63, 37330),  
(65, 37312), (71, 37276), (75, 37246),

Gene: Timshel\_54 Start: 40008, Stop: 39469, Start Num: 12

Candidate Starts for Timshel\_54:

(Start: 11 @40023 has 5 MA's), (Start: 12 @40008 has 2 MA's), (Start: 17 @39981 has 124 MA's),  
(Start: 24 @39957 has 23 MA's), (Start: 28 @39930 has 29 MA's), (Start: 29 @39918 has 5 MA's),  
(Start: 33 @39867 has 2 MA's), (37, 39822), (39, 39795), (48, 39714), (53, 39690), (56, 39660), (59,  
39630), (65, 39579), (69, 39552), (71, 39543), (75, 39513), (80, 39477),

Gene: Topgun\_54 Start: 38573, Stop: 38052, Start Num: 17

Candidate Starts for Topgun\_54:

(Start: 17 @38573 has 124 MA's), (Start: 24 @38549 has 23 MA's), (Start: 28 @38522 has 29 MA's),  
(Start: 29 @38510 has 5 MA's), (Start: 32 @38462 has 1 MA's), (41, 38363), (46, 38312), (59, 38216),  
(60, 38213), (63, 38183), (65, 38165), (66, 38162), (71, 38129), (75, 38099), (76, 38096),

Gene: Treddle\_55 Start: 39496, Stop: 38975, Start Num: 17

Candidate Starts for Treddle\_55:

(Start: 17 @39496 has 124 MA's), (Start: 24 @39472 has 23 MA's), (Start: 28 @39445 has 29 MA's),  
(Start: 29 @39433 has 5 MA's), (Start: 32 @39385 has 1 MA's), (41, 39286), (46, 39235), (59, 39139),  
(63, 39106), (65, 39088), (71, 39052), (75, 39022),

Gene: Tripl3t\_55 Start: 40330, Stop: 39830, Start Num: 24

Candidate Starts for Tripl3t\_55:

(Start: 17 @40354 has 124 MA's), (Start: 24 @40330 has 23 MA's), (Start: 28 @40303 has 29 MA's),  
(Start: 29 @40291 has 5 MA's), (Start: 32 @40243 has 1 MA's), (41, 40144), (46, 40093), (59, 39997),  
(63, 39964), (65, 39946), (71, 39910), (75, 39877), (76, 39874),

Gene: Tristan\_57 Start: 39691, Stop: 39152, Start Num: 11

Candidate Starts for Tristan\_57:

(Start: 11 @39691 has 5 MA's), (Start: 24 @39637 has 23 MA's), (Start: 28 @39610 has 29 MA's),  
(Start: 31 @39580 has 2 MA's), (37, 39502), (38, 39496), (43, 39436), (55, 39355), (59, 39310), (63,  
39277), (71, 39223), (75, 39193),

Gene: TuanPN\_38 Start: 28367, Stop: 28789, Start Num: 34

Candidate Starts for TuanPN\_38:

(1, 28124), (2, 28139), (3, 28142), (Start: 34 @28367 has 2 MA's), (37, 28424), (38, 28430), (39,  
28451), (44, 28496), (46, 28520), (48, 28532), (51, 28541), (52, 28550), (57, 28595), (59, 28616), (70,  
28697), (72, 28718), (79, 28766),

Gene: TwoPeat\_56 Start: 38827, Stop: 38306, Start Num: 17

Candidate Starts for TwoPeat\_56:

(4, 38950), (Start: 17 @38827 has 124 MA's), (Start: 28 @38776 has 29 MA's), (Start: 29 @38764 has 5 MA's), (39, 38635), (42, 38614), (43, 38596), (59, 38470), (60, 38467), (63, 38437), (65, 38419), (71, 38383), (75, 38353),

Gene: U2\_54 Start: 39847, Stop: 39374, Start Num: 28

Candidate Starts for U2\_54:

(Start: 17 @39898 has 124 MA's), (Start: 24 @39874 has 23 MA's), (Start: 28 @39847 has 29 MA's), (Start: 29 @39835 has 5 MA's), (Start: 32 @39787 has 1 MA's), (41, 39688), (46, 39637), (59, 39541), (60, 39538), (63, 39508), (65, 39490), (71, 39454), (75, 39421), (76, 39418),

Gene: Unstoppable\_39 Start: 27970, Stop: 28476, Start Num: 24

Candidate Starts for Unstoppable\_39:

(1, 27811), (2, 27826), (3, 27829), (Start: 24 @27970 has 23 MA's), (Start: 34 @28054 has 2 MA's), (37, 28111), (38, 28117), (39, 28138), (40, 28147), (44, 28183), (46, 28207), (48, 28219), (51, 28228), (52, 28237), (57, 28282), (70, 28384), (72, 28405), (79, 28453),

Gene: VA6\_60 Start: 39153, Stop: 38614, Start Num: 11

Candidate Starts for VA6\_60:

(Start: 11 @39153 has 5 MA's), (Start: 24 @39099 has 23 MA's), (Start: 31 @39042 has 2 MA's), (38, 38958), (43, 38898), (53, 38832), (59, 38772), (63, 38739), (65, 38721), (71, 38685),

Gene: Vanseggelen\_45 Start: 29600, Stop: 30022, Start Num: 34

Candidate Starts for Vanseggelen\_45:

(1, 29357), (2, 29372), (Start: 34 @29600 has 2 MA's), (37, 29657), (38, 29663), (39, 29684), (40, 29693), (46, 29753), (47, 29756), (48, 29765), (57, 29828), (70, 29930),

Gene: Verabelle\_43 Start: 30009, Stop: 30431, Start Num: 34

Candidate Starts for Verabelle\_43:

(1, 29766), (2, 29781), (Start: 34 @30009 has 2 MA's), (37, 30066), (38, 30072), (39, 30093), (40, 30102), (46, 30162), (47, 30165), (48, 30174), (57, 30237), (70, 30339), (72, 30360),

Gene: VieEnRose\_40 Start: 28747, Stop: 29256, Start Num: 23

Candidate Starts for VieEnRose\_40:

(1, 28591), (2, 28606), (8, 28651), (Start: 23 @28747 has 2 MA's), (37, 28891), (46, 28987), (47, 28990), (57, 29062), (70, 29164), (72, 29185), (74, 29200),

Gene: Wheeler\_55 Start: 38989, Stop: 38468, Start Num: 17

Candidate Starts for Wheeler\_55:

(Start: 17 @38989 has 124 MA's), (Start: 24 @38965 has 23 MA's), (Start: 28 @38938 has 29 MA's), (Start: 29 @38926 has 5 MA's), (Start: 32 @38878 has 1 MA's), (46, 38728), (59, 38632), (60, 38629), (63, 38599), (65, 38581), (71, 38545), (75, 38515), (77, 38500),

Gene: Whitspit\_52 Start: 36559, Stop: 36038, Start Num: 17

Candidate Starts for Whitspit\_52:

(Start: 17 @36559 has 124 MA's), (Start: 24 @36535 has 23 MA's), (Start: 28 @36508 has 29 MA's), (Start: 29 @36496 has 5 MA's), (Start: 32 @36448 has 1 MA's), (41, 36349), (46, 36298), (59, 36202), (63, 36169), (65, 36151), (71, 36115), (75, 36085), (76, 36082),

Gene: Wilkins\_54 Start: 38503, Stop: 37982, Start Num: 17

Candidate Starts for Wilkins\_54:

(Start: 17 @38503 has 124 MA's), (Start: 24 @38479 has 23 MA's), (Start: 28 @38452 has 29 MA's), (Start: 29 @38440 has 5 MA's), (Start: 32 @38392 has 1 MA's), (41, 38293), (46, 38242), (59, 38146), (60, 38143), (63, 38113), (65, 38095), (66, 38092), (71, 38059), (75, 38029), (76, 38026),

Gene: Zeeculate\_53 Start: 39869, Stop: 39348, Start Num: 17

Candidate Starts for Zeeculate\_53:

(Start: 17 @39869 has 124 MA's), (Start: 24 @39845 has 23 MA's), (Start: 28 @39818 has 29 MA's),  
(Start: 29 @39806 has 5 MA's), (Start: 32 @39758 has 1 MA's), (46, 39608), (59, 39512), (63, 39479),  
(65, 39461), (71, 39425), (75, 39395),

Gene: phiCAM\_38 Start: 31902, Stop: 32324, Start Num: 34

Candidate Starts for phiCAM\_38:

(1, 31659), (2, 31674), (Start: 34 @31902 has 2 MA's), (37, 31959), (38, 31965), (39, 31986), (40,  
31995), (46, 32055), (47, 32058), (48, 32067), (57, 32130), (70, 32232), (72, 32253), (79, 32301),

Gene: phiHau3\_41 Start: 28474, Stop: 28935, Start Num: 29

Candidate Starts for phiHau3\_41:

(2, 28291), (6, 28321), (Start: 29 @28474 has 5 MA's), (39, 28603), (52, 28702), (55, 28723), (57,  
28747), (59, 28768), (61, 28774), (72, 28870),