





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 296211 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296211 has 249 members, 17 are drafts.

Phages represented in each track:

- Track 1 : Naira\_36, Fenn\_36
- Track 2 : Euphoria\_35, KikiBouba\_37, MetalQZJ\_35, DirtDevil\_37, Eyeball\_35, Graduation\_37, Beatrix\_35, SwissCheese\_37, Watermelon\_37, Forsytheast\_35, Violet\_34, Jasper\_36, Kenmech\_38, BaconJack\_38, RidgeCB\_35, Bones\_35, Bruns\_34, LunarLander\_36, Cueyllyss\_35, Puppet\_35, Tripl3t\_36, Hope4ever\_35, Abbysshoes\_37, Corvo\_36, Moose\_35, Aldrich\_37, Dussy\_36, lLeeKay\_37, CatBus\_37, MaryBeth\_35, Noxious\_37, Papez\_37, GrecoEtereo\_37
- Track 3 : PinkPlastic\_34, Manatee\_36, Big3\_35, PascalRango\_36, Switzer\_36, Pippin\_37, Greg\_37, Bircsak\_35, Michley\_35, McGuire\_36, Gompeii16\_35, U2\_35, Fajezeel\_37, Ichabod\_36, BeesKnees\_36, Ciao\_35, Dynamix\_36, GMonster\_34, MrGordo\_35, Mkhusei\_36
- Track 4 : Blue\_35, Zeeculate\_35, Alvin\_36, Bxb1\_33
- Track 5 : Museum\_37, BigMau\_37, Gandalf20\_36, Jerm2\_36, Rohr\_36, Bob3\_34, PattyP\_37, Pari\_36, Dulcie\_34, Burton\_36, HermioneGrange\_35, Petp2012\_37
- Track 6 : Killigrew\_33
- Track 7 : Licorice\_37
- Track 8 : STLscum\_36
- Track 9 : Briton15\_37
- Track 10 : Mryolo\_33
- Track 11 : Lopton\_36, Seabiscuit\_37, DreamCatcher\_38, Squee\_36, KSSJEB\_35
- Track 12 : TheloniousMonk\_37
- Track 13 : PherrisBueller\_36, Dreamboat\_36
- Track 14 : Marco3\_35
- Track 15 : Rufus\_36
- Track 16 : Atkinbua\_37
- Track 17 : Smeagol\_37
- Track 18 : Peterson\_38
- Track 19 : Chanagan\_34
- Track 20 : Hermia\_38
- Track 21 : Turj99\_34
- Track 22 : Jorgensen\_35
- Track 23 : DarthPhader\_8
- Track 24 : Drago\_25, Enby\_25, Lorde\_25, Filuzino\_24, Awesomesauce\_25, Daenerys\_24, Pacc40\_24, Rockne\_24, Piper2020\_26, Misha28\_25, TootsiePop\_25, DaddyRickover\_24, Llij\_24, Scottish\_25, PMC\_24, UncleRicky\_27, JoeyJr\_24, Mova\_25, BlueCrab\_24, KingMidas\_25, PHappiness\_24, Maravista\_24, Chuckly\_24

- Track 25 : Sparkdehlily\_24, DRBy19\_24, Saal\_24, TDanisky\_24, Nebkiss\_28, Philus\_24, SwagPigglett\_24
- Track 26 : ByChance\_24, DosHalletts\_25, Nivrat\_24, ShowerHandel\_24, Burwell21\_24, Yorick\_24, LilMoolah\_24, NormanBulbieJr\_24, Martik\_24
- Track 27 : Lucia\_25
- Track 28 : Karhdo\_24, Polka14\_25, Doomslug\_26, DLane\_24, Phatniss\_25, Doug\_25, Dorothy\_24, ChickenDinner\_26, Aoberi\_26, DocMcStuffins\_26, Ramsey\_25, Nitzel\_25, Leozinho\_25
- Track 29 : Harley\_24, Ibhubesi\_24
- Track 30 : Gorge\_24, BobaPhett\_24, Mattes\_24, James\_24, Jarcob\_24
- Track 31 : Vivum\_24, RedBird\_24, LittleE\_45
- Track 32 : Alexphander\_26
- Track 33 : Chevrolet\_24
- Track 34 : Leperchaun\_24, OwlsT2W\_26, Eradicator\_24, Violac\_25, Donkeykong\_24
- Track 35 : DillTech15\_24
- Track 36 : Veteran\_24, GUmbie\_24, SiSi\_24, Phasih\_25, Mantra\_24, DirtMcgirt\_25, GigiOuiOui\_24
- Track 37 : Cabrinians\_24, OlympiaSaint\_24, FreddyB\_24, Spoonbill\_24, Priscilla\_24
- Track 38 : Eish\_24
- Track 39 : Galactic\_24, Batiatus\_24
- Track 40 : DoRead\_24
- Track 41 : Blexus\_24
- Track 42 : Florinda\_24, Quico\_25, Girafales\_25
- Track 43 : Royals2015\_24
- Track 44 : DaWorst\_26
- Track 45 : Medindi\_24
- Track 46 : Cornucopia\_25
- Track 47 : Empress\_25, Sassafras\_24, Deb65\_24, Inventum\_24, OldBen\_24, Geralt\_24, MisterCuddles\_24, Girr\_24, Ruby\_24
- Track 48 : MilleniumForce\_25
- Track 49 : Mahavrat\_24
- Track 50 : SimranZ1\_25
- Track 51 : Plumbus\_25
- Track 52 : Grimmer\_25
- Track 53 : WillSterrel\_25, Topiatin\_26, IrishSherpFalk\_25
- Track 54 : Mandlovu\_24, Strokeseat\_24
- Track 55 : SassyB\_24, PopTart\_24
- Track 56 : RitaG\_24
- Track 57 : Hades\_24
- Track 58 : Boomer\_25
- Track 59 : Fancypants\_24
- Track 60 : Juniper1\_24
- Track 61 : Seabastian\_24, Modragons\_24, Jinglebell\_23, OfUltron\_24, Oksu\_25, Llama\_24
- Track 62 : Rita\_24, Bubbles123\_25
- Track 63 : Marker\_25
- Track 64 : Jant\_24, QuickMath\_25, Kimberlium\_26, MulchExplorer\_26
- Track 65 : Cheesepuff\_26
- Track 66 : RockyHorror\_25, Zerg\_24
- Track 67 : DotProduct\_24
- Track 68 : PhesterPhotato\_24
- Track 69 : Nimbo\_24

- Track 70 : Ardmore\_24
- Track 71 : Doomphist\_24, Poenanya\_24
- Track 72 : Lizziana\_24
- Track 73 : Gandalph\_24
- Track 74 : ShiLan\_24, Zizzle\_24
- Track 75 : Aubs\_24
- Track 76 : Krakatau\_25
- Track 77 : Gonephishing\_40
- Track 78 : Duke13\_42, Wanda\_45
- Track 79 : Optimus\_43, BAKA\_42
- Track 80 : Gaia\_27

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

The start number called the most often in the published annotations is 2, it was called in 159 of the 232 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alexphander\_26, Aloeri\_26, Alvin\_36, Atkinbua\_37, Awesomesauce\_25, BeesKnees\_36, Big3\_35, BigMau\_37, Bircsak\_35, Blexus\_24, BlueCrab\_24, Blue\_35, Bob3\_34, BobaPhett\_24, Briton15\_37, Burton\_36, Burwell21\_24, Bxb1\_33, ByChance\_24, Cabrinians\_24, CheesePuff\_26, Chevrolet\_24, ChickenDinner\_26, Chuckly\_24, Ciao\_35, Cornucopia\_25, DLane\_24, DRBy19\_24, DaWorst\_26, DaddyRickover\_24, Daenerys\_24, Deb65\_24, DirtMcGirt\_25, DoRead\_24, DocMcStuffins\_26, Donkeykong\_24, Doomslug\_26, Dorothy\_24, DosHalletts\_25, Doug\_25, Drago\_25, DreamCatcher\_38, Dulcie\_34, Dynamix\_36, Eish\_24, Empress\_25, Enby\_25, Eradicator\_24, Fajezeel\_37, Fancypants\_24, Fenn\_36, Filuzino\_24, Florinda\_24, FreddyB\_24, GMonster\_34, GUmbie\_24, Gaia\_27, Gandalf20\_36, Gandalph\_24, Geralt\_24, GigiOuiOui\_24, Girafales\_25, Girr\_24, Gompeii16\_35, Gonephishing\_40, Gorge\_24, Greg\_37, Grimmer\_25, Hades\_24, Harley\_24, HermioneGrange\_35, Ibhubesi\_24, Ichabod\_36, Inventum\_24, James\_24, Jant\_24, Jarcob\_24, Jerm2\_36, JoeyJr\_24, KSSJEB\_35, Karhdo\_24, Kimberlium\_26, KingMidas\_25, Leozinho\_25, Leperchaun\_24, LilMoolah\_24, Lizziana\_24, Llij\_24, Lopton\_36, Lorde\_25, Lucia\_25, Manatee\_36, Mandlovu\_24, Mantra\_24, Maravista\_24, Marker\_25, Martik\_24, Mattes\_24, McGuire\_36, Medindi\_24, Michley\_35, MilleniumForce\_25, Misha28\_25, MisterCuddles\_24, Mkhuseleli\_36, Mova\_25, MrGordo\_35, MulchExplorer\_26, Museum\_37, Naira\_36, Nebkiss\_28, Nitzel\_25, Nivrat\_24, NormanBulbieJr\_24, OldBen\_24, OlympiaSaint\_24, OwlsT2W\_26, PHappiness\_24, PMC\_24, Pacc40\_24, Pari\_36, PascalRango\_36, PattyP\_37, Petp2012\_37, Phasih\_25, Phatniss\_25, Philus\_24, PinkPlastic\_34, Piper2020\_26, Pippin\_37, Plumbus\_25, Polka14\_25, PopTart\_24, Priscilla\_24, QuickMath\_25, Quico\_25, Ramsey\_25, RitaG\_24, Rockne\_24, RockyHorror\_25, Rohr\_36, Royals2015\_24, Ruby\_24, Saal\_24, Sassafras\_24, SassyB\_24, Scottish\_25, Seabiscuit\_37, ShiLan\_24, ShowerHandel\_24, SiSi\_24, Sparkdehlily\_24, Spoonbill\_24, Squee\_36, Strokeseat\_24, SwagPigglett\_24, Switzer\_36, TDanisky\_24, TootsiePop\_25, U2\_35, UncleRicky\_27, Veteran\_24, Violac\_25, Yorick\_24, Zeeculate\_35, Zerg\_24, Zizzle\_24,

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

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

- Abbysheoes\_37, Aldrich\_37, Ardmore\_24, Aubs\_24, BAKA\_42, BaconJack\_38, Batiatus\_24, Beatrix\_35, Bones\_35, Boomer\_25, Bruns\_34, Bubbles123\_25, CatBus\_37, Chanagan\_34, Corvo\_36, Cueyllyss\_35, DarthPhader\_8, DillTech15\_24, DirtDevil\_37, Doomphist\_24, DotProduct\_24, Dreamboat\_36, Duke13\_42, Dussy\_36, Euphoria\_35, Eyeball\_35, Forsytheast\_35, Galactic\_24, Graduation\_37, GrecoEtereo\_37, Hermia\_38, Hope4ever\_35, ILeeKay\_37, IrishSherpFalk\_25, Jasper\_36, Jinglebell\_23, Jorgensen\_35, Juniper1\_24, Kenmech\_38, KikiBouba\_37, Killigrew\_33, Krakatau\_25, Licorice\_37, LittleE\_45, Llama\_24, LunarLander\_36, Mahavrat\_24, Marco3\_35, MaryBeth\_35, MetalQZJ\_35, Modragons\_24, Moose\_35, Mryolo\_33, Nimbo\_24, Noxious\_37, OfUltron\_24, Oksu\_25, Optimus\_43, Papez\_37, Peterson\_38, PherrisBueller\_36, PhesterPhotato\_24, Poenanya\_24, Puppet\_35, RedBird\_24, RidgeCB\_35, Rita\_24, Rufus\_36, STLscum\_36, Seabastian\_24, SimranZ1\_25, Smeagol\_37, SwissCheese\_37, TheloniousMonk\_37, Topiatin\_26, Tripl3t\_36, Turj99\_34, Violet\_34, Vivum\_24, Wanda\_45, Watermelon\_37, WillSterrel\_25,

### Summary by start number:

Start 1:

- Found in 121 of 249 ( 48.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 0.8% of time when present
- Phage (with cluster) where this start called: Ardmore\_24 (F1),

Start 2:

- Found in 167 of 249 ( 67.1% ) of genes in pham
- Manual Annotations of this start: 159 of 232
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alexphander\_26 (F1), Aloeri\_26 (F1), Alvin\_36 (A1), Atkinbua\_37 (A1), Awesomesauce\_25 (F1), BeesKnees\_36 (A1), Big3\_35 (A1), BigMau\_37 (A1), Bircsak\_35 (A1), Blexus\_24 (F1), BlueCrab\_24 (F1), Blue\_35 (A1), Bob3\_34 (A1), BobaPhett\_24 (F1), Briton15\_37 (A1), Burton\_36 (A1), Burwell21\_24 (F1), Bxb1\_33 (A1), ByChance\_24 (F1), Cabrinians\_24 (F1), Cheese puff\_26 (F1), Chevrolet\_24 (F1), ChickenDinner\_26 (F1), Chuckly\_24 (F1), Ciao\_35 (A1), Cornucopia\_25 (F1), DLane\_24 (F1), DRBy19\_24 (F1), DaWorst\_26 (F1), DaddyRickover\_24 (F1), Daenerys\_24 (F1), Deb65\_24 (F1), DirtMcgirt\_25 (F1), DoRead\_24 (F1), DocMcStuffins\_26 (F1), Donkeykong\_24 (F1), Doomslug\_26 (F), Dorothy\_24 (F1), DosHalletts\_25 (F1), Doug\_25 (F1), Drago\_25 (F1), DreamCatcher\_38 (A1), Dulcie\_34 (A1), Dynamix\_36 (A1), Eish\_24 (F1), Empress\_25 (F1), Enby\_25 (F1), Eradicator\_24 (F1), Fajezeel\_37 (A1), Fancypants\_24 (F1), Fenn\_36 (A1), Filuzino\_24 (F1), Florinda\_24 (F1), FreddyB\_24 (F1), GMonster\_34 (A1), GUmbie\_24 (F1), Gaia\_27 (X), Gandalf20\_36 (A1), Gandolph\_24 (F1), Geralt\_24 (F1), GigiOuiOui\_24 (F1), Girafales\_25 (F1), Girr\_24 (F1), Gompeii16\_35 (A1), Gonephishing\_40 (J), Gorge\_24 (F1), Greg\_37 (A1), Grimmer\_25 (F1), Hades\_24 (F1), Harley\_24 (F1), HermioneGrange\_35 (A1), Ibhuesi\_24 (F1), Ichabod\_36 (A1), Inventum\_24 (F1), James\_24 (F1), Jant\_24 (F1), Jarcob\_24 (F1), Jerm2\_36 (A1), JoeyJr\_24 (F1), KSSJEB\_35 (A1), Karhdo\_24 (F1), Kimberlium\_26 (F1), KingMidas\_25 (F1), Leozinho\_25 (F1), Leperchaun\_24 (F1), LilMoolah\_24 (F1), Lizziana\_24 (F1), Llij\_24 (F1), Lopton\_36 (A1), Lorde\_25 (F1), Lucia\_25 (F1), Manatee\_36 (A1), Mandlovu\_24 (F1), Mantra\_24 (F1), Maravista\_24 (F1), Marker\_25 (F1), Martik\_24 (F1), Mattes\_24 (F1), McGuire\_36 (A1), Medindi\_24

(F1), Michley\_35 (A1), MilleniumForce\_25 (F1), Misha28\_25 (F1), MisterCuddles\_24 (F1), Mkhuseleli\_36 (A1), Mova\_25 (F1), MrGordo\_35 (A1), MulchExplorer\_26 (F1), Museum\_37 (A1), Naira\_36 (A1), Nebkiss\_28 (X), Nitzel\_25 (F1), Nivrat\_24 (F1), NormanBulbieJr\_24 (F1), OldBen\_24 (F1), OlympiaSaint\_24 (F1), OwlsT2W\_26 (F1), PHappiness\_24 (F1), PMC\_24 (F1), Pacc40\_24 (F1), Pari\_36 (A1), PascalRango\_36 (A1), PattyP\_37 (A1), Petp2012\_37 (A1), Phasih\_25 (F1), Phatniss\_25 (F1), Philus\_24 (F1), PinkPlastic\_34 (A1), Piper2020\_26 (F1), Pippin\_37 (A1), Plumbus\_25 (F1), Polka14\_25 (F1), PopTart\_24 (F1), Priscilla\_24 (F1), QuickMath\_25 (F1), Quico\_25 (F1), Ramsey\_25 (F1), RitaG\_24 (F1), Rockne\_24 (F1), RockyHorror\_25 (F1), Rohr\_36 (A1), Royals2015\_24 (F1), Ruby\_24 (F1), Saal\_24 (F1), Sassafras\_24 (F1), SassyB\_24 (F1), Scottish\_25 (F1), Seabiscuit\_37 (A1), ShiLan\_24 (F1), ShowerHandel\_24 (F1), SiSi\_24 (F1), Sparkdehlily\_24 (F1), Spoonbill\_24 (F1), Squee\_36 (A1), Strokeseat\_24 (F1), SwagPigglett\_24 (F1), Switzer\_36 (A1), TDanisky\_24 (F1), TootsiePop\_25 (F1), U2\_35 (A1), UncleRicky\_27 (F1), Veteran\_24 (F1), Violac\_25 (F1), Yorick\_24 (F1), Zeeculate\_35 (A1), Zerg\_24 (F1), Zizzle\_24 (F1),

#### Start 3:

- Found in 33 of 249 ( 13.3% ) of genes in pham
- Manual Annotations of this start: 30 of 232
- Called 97.0% of time when present
- Phage (with cluster) where this start called: Aubs\_24 (F1), BAKA\_42 (J), Batiatus\_24 (F1), Boomer\_25 (F1), Bubbles123\_25 (F1), DillTech15\_24 (F1), Doomphist\_24 (F1), DotProduct\_24 (F1), Duke13\_42 (J), Galactic\_24 (F1), IrishSherpFalk\_25 (F1), Jinglebell\_23 (F1), Juniper1\_24 (F1), Krakatau\_25 (F1), LittleE\_45 (J), Llama\_24 (F1), Mahavrat\_24 (F1), Modragons\_24 (F1), Nimbo\_24 (F1), OfUltron\_24 (F1), Oksu\_25 (F1), Optimus\_43 (J), PhesterPhotato\_24 (F1), Poenanya\_24 (F1), RedBird\_24 (F1), Rita\_24 (F1), Seabastian\_24 (F1), SimranZ1\_25 (F1), Topiatin\_26 (F1), Vivum\_24 (F1), Wanda\_45 (J), WillSterrel\_25 (F1),

#### Start 4:

- Found in 9 of 249 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 9 of 232
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chanagan\_34 (A1), Jorgensen\_35 (A1), Killigrew\_33 (A1), Marco3\_35 (A1), Peterson\_38 (A1), Rufus\_36 (A1), STLscum\_36 (A1), Smeagol\_37 (A1), Turj99\_34 (A1),

#### Start 6:

- Found in 1 of 249 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 232
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DARTHPhader\_8 (A12),

#### Start 7:

- Found in 1 of 249 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 232
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TheloniousMonk\_37 (A1),

#### Start 10:

- Found in 38 of 249 ( 15.3% ) of genes in pham

- Manual Annotations of this start: 31 of 232
- Called 97.4% of time when present
- Phage (with cluster) where this start called: Abbyshoes\_37 (A1), Aldrich\_37 (A1), BaconJack\_38 (A1), Beatrix\_35 (A1), Bones\_35 (A1), Bruns\_34 (A1), CatBus\_37 (A1), Corvo\_36 (A1), Cueyllyss\_35 (A1), DirtDevil\_37 (A1), Dreamboat\_36 (A1), Dussy\_36 (A1), Euphoria\_35 (A1), Eyeball\_35 (A1), Forsytheast\_35 (A1), Graduation\_37 (A1), GrecoEtereo\_37 (A1), Hermia\_38 (A1), Hope4ever\_35 (A1), ILeeKay\_37 (A1), Jasper\_36 (A1), Kenmech\_38 (A1), KikiBouba\_37 (A1), Licorice\_37 (A1), LunarLander\_36 (A1), MaryBeth\_35 (A1), MetalQZJ\_35 (A1), Moose\_35 (A1), Noxious\_37 (A1), Papez\_37 (A1), PherrisBueller\_36 (A1), Puppet\_35 (A1), RidgeCB\_35 (A1), SwissCheese\_37 (A1), Tripl3t\_36 (A1), Violet\_34 (A1), Watermelon\_37 (A1),

Start 12:

- Found in 87 of 249 ( 34.9% ) of genes in pham
- Manual Annotations of this start: 1 of 232
- Called 1.1% of time when present
- Phage (with cluster) where this start called: Mryolo\_33 (A1),

### **Summary by clusters:**

There are 6 clusters represented in this pham: F1, F, A12, J, A1, X,

Info for manual annotations of cluster A1:

- Start number 2 was manually annotated 44 times for cluster A1.
- Start number 4 was manually annotated 9 times for cluster A1.
- Start number 7 was manually annotated 1 time for cluster A1.
- Start number 10 was manually annotated 31 times for cluster A1.
- Start number 12 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster A12:

- Start number 6 was manually annotated 1 time for cluster A12.

Info for manual annotations of cluster F1:

- Start number 2 was manually annotated 113 times for cluster F1.
- Start number 3 was manually annotated 25 times for cluster F1.

Info for manual annotations of cluster J:

- Start number 3 was manually annotated 5 times for cluster J.

Info for manual annotations of cluster X:

- Start number 2 was manually annotated 2 times for cluster X.

### **Gene Information:**

Gene: Abbyshoes\_37 Start: 28238, Stop: 29026, Start Num: 10

Candidate Starts for Abbyshoes\_37:

(Start: 10 @28238 has 31 MA's), (Start: 12 @28244 has 1 MA's), (16, 28280), (33, 28538), (39, 28643), (43, 28670), (44, 28694), (59, 28871),

Gene: Aldrich\_37 Start: 29363, Stop: 30151, Start Num: 10

Candidate Starts for Aldrich\_37:

(Start: 10 @29363 has 31 MA's), (Start: 12 @29369 has 1 MA's), (16, 29405), (33, 29663), (39, 29768), (43, 29795), (44, 29819), (59, 29996),

Gene: Alexphander\_26 Start: 24790, Stop: 25614, Start Num: 2

Candidate Starts for Alexphander\_26:

(Start: 2 @24790 has 159 MA's), (14, 24838), (17, 24871), (39, 25231),

Gene: Aloeri\_26 Start: 24858, Stop: 25682, Start Num: 2

Candidate Starts for Aloeri\_26:

(1, 24798), (Start: 2 @24858 has 159 MA's), (14, 24906), (17, 24939), (20, 24972), (39, 25299),

Gene: Alvin\_36 Start: 28638, Stop: 29438, Start Num: 2

Candidate Starts for Alvin\_36:

(Start: 2 @28638 has 159 MA's), (Start: 12 @28674 has 1 MA's), (19, 28716), (24, 28803), (39, 29055), (44, 29106), (59, 29283),

Gene: Ardmore\_24 Start: 24249, Stop: 25115, Start Num: 1

Candidate Starts for Ardmore\_24:

(1, 24249), (Start: 3 @24309 has 30 MA's), (14, 24357), (17, 24390), (20, 24423), (41, 24753), (42, 24759), (59, 24963), (70, 25110),

Gene: Atkinbua\_37 Start: 28484, Stop: 29272, Start Num: 2

Candidate Starts for Atkinbua\_37:

(Start: 2 @28484 has 159 MA's), (Start: 12 @28520 has 1 MA's), (19, 28562), (24, 28649), (39, 28904), (44, 28955), (66, 29255),

Gene: Aubs\_24 Start: 24425, Stop: 25231, Start Num: 3

Candidate Starts for Aubs\_24:

(Start: 3 @24425 has 30 MA's), (14, 24473), (22, 24566), (41, 24869), (42, 24875), (59, 25079), (70, 25226),

Gene: Awesomesauce\_25 Start: 24131, Stop: 24955, Start Num: 2

Candidate Starts for Awesomesauce\_25:

(1, 24071), (Start: 2 @24131 has 159 MA's), (14, 24179), (20, 24245), (39, 24572),

Gene: BAKA\_42 Start: 36778, Stop: 37584, Start Num: 3

Candidate Starts for BAKA\_42:

(1, 36718), (Start: 3 @36778 has 30 MA's), (14, 36826), (17, 36859), (20, 36892), (21, 36916), (22, 36919), (41, 37222), (42, 37228), (59, 37432), (70, 37579),

Gene: BaconJack\_38 Start: 28558, Stop: 29346, Start Num: 10

Candidate Starts for BaconJack\_38:

(Start: 10 @28558 has 31 MA's), (Start: 12 @28564 has 1 MA's), (16, 28600), (33, 28858), (39, 28963), (43, 28990), (44, 29014), (59, 29191),

Gene: Batiatus\_24 Start: 24316, Stop: 25122, Start Num: 3

Candidate Starts for Batiatus\_24:

(1, 24256), (Start: 3 @24316 has 30 MA's), (14, 24364), (22, 24457), (41, 24760), (42, 24766), (59, 24970), (70, 25117),

Gene: Beatrix\_35 Start: 29473, Stop: 30261, Start Num: 10

Candidate Starts for Beatrix\_35:

(Start: 10 @29473 has 31 MA's), (Start: 12 @29479 has 1 MA's), (16, 29515), (33, 29773), (39, 29878), (43, 29905), (44, 29929), (59, 30106),

Gene: BeesKnees\_36 Start: 28085, Stop: 28894, Start Num: 2

Candidate Starts for BeesKnees\_36:

(Start: 2 @28085 has 159 MA's), (Start: 12 @28121 has 1 MA's), (19, 28163), (24, 28250), (39, 28505), (44, 28556),

Gene: Big3\_35 Start: 28678, Stop: 29481, Start Num: 2

Candidate Starts for Big3\_35:

(Start: 2 @28678 has 159 MA's), (Start: 12 @28714 has 1 MA's), (19, 28756), (24, 28843), (39, 29098), (44, 29149),

Gene: BigMau\_37 Start: 28214, Stop: 29017, Start Num: 2

Candidate Starts for BigMau\_37:

(Start: 2 @28214 has 159 MA's), (Start: 12 @28250 has 1 MA's), (19, 28292), (24, 28379), (39, 28634),

Gene: Bircsak\_35 Start: 28523, Stop: 29326, Start Num: 2

Candidate Starts for Bircsak\_35:

(Start: 2 @28523 has 159 MA's), (Start: 12 @28559 has 1 MA's), (19, 28601), (24, 28688), (39, 28943), (44, 28994),

Gene: Blexus\_24 Start: 24450, Stop: 25397, Start Num: 2

Candidate Starts for Blexus\_24:

(1, 24390), (Start: 2 @24450 has 159 MA's), (14, 24498), (17, 24531), (20, 24564), (21, 24588), (29, 24657), (34, 24774), (35, 24792),

Gene: Blue\_35 Start: 28519, Stop: 29322, Start Num: 2

Candidate Starts for Blue\_35:

(Start: 2 @28519 has 159 MA's), (Start: 12 @28555 has 1 MA's), (19, 28597), (24, 28684), (39, 28939), (44, 28990), (59, 29167),

Gene: BlueCrab\_24 Start: 24432, Stop: 25256, Start Num: 2

Candidate Starts for BlueCrab\_24:

(1, 24372), (Start: 2 @24432 has 159 MA's), (14, 24480), (20, 24546), (39, 24873),

Gene: Bob3\_34 Start: 27560, Stop: 28363, Start Num: 2

Candidate Starts for Bob3\_34:

(Start: 2 @27560 has 159 MA's), (Start: 12 @27596 has 1 MA's), (19, 27638), (24, 27725), (39, 27980),

Gene: BobaPhett\_24 Start: 24420, Stop: 25244, Start Num: 2

Candidate Starts for BobaPhett\_24:

(1, 24360), (Start: 2 @24420 has 159 MA's), (14, 24468), (17, 24501), (20, 24534), (24, 24606), (39, 24861),

Gene: Bones\_35 Start: 27931, Stop: 28719, Start Num: 10

Candidate Starts for Bones\_35:

(Start: 10 @27931 has 31 MA's), (Start: 12 @27937 has 1 MA's), (16, 27973), (33, 28231), (39, 28336), (43, 28363), (44, 28387), (59, 28564),

Gene: Boomer\_25 Start: 24077, Stop: 24886, Start Num: 3

Candidate Starts for Boomer\_25:

(1, 24017), (Start: 3 @24077 has 30 MA's), (14, 24125), (17, 24158), (20, 24191), (22, 24218), (45, 24557), (52, 24620), (59, 24731),

Gene: Briton15\_37 Start: 28318, Stop: 29121, Start Num: 2

Candidate Starts for Briton15\_37:

(Start: 2 @28318 has 159 MA's), (Start: 12 @28354 has 1 MA's), (19, 28396), (39, 28738),

Gene: Bruns\_34 Start: 27953, Stop: 28801, Start Num: 10

Candidate Starts for Bruns\_34:

(Start: 10 @27953 has 31 MA's), (Start: 12 @27959 has 1 MA's), (16, 27995), (33, 28313), (39, 28418), (43, 28445), (44, 28469), (59, 28646),

Gene: Bubbles123\_25 Start: 24980, Stop: 25789, Start Num: 3

Candidate Starts for Bubbles123\_25:

(1, 24920), (Start: 3 @24980 has 30 MA's), (14, 25028), (20, 25094), (22, 25121), (27, 25178), (28, 25184), (31, 25283), (52, 25523), (59, 25634),

Gene: Burton\_36 Start: 28168, Stop: 28971, Start Num: 2

Candidate Starts for Burton\_36:

(Start: 2 @28168 has 159 MA's), (Start: 12 @28204 has 1 MA's), (19, 28246), (24, 28333), (39, 28588),

Gene: Burwell21\_24 Start: 24454, Stop: 25278, Start Num: 2

Candidate Starts for Burwell21\_24:

(1, 24394), (Start: 2 @24454 has 159 MA's), (8, 24481), (14, 24502), (17, 24535), (20, 24568), (39, 24895),

Gene: Bxb1\_33 Start: 28131, Stop: 28934, Start Num: 2

Candidate Starts for Bxb1\_33:

(Start: 2 @28131 has 159 MA's), (Start: 12 @28167 has 1 MA's), (19, 28209), (24, 28296), (39, 28551), (44, 28602), (59, 28779),

Gene: ByChance\_24 Start: 24431, Stop: 25255, Start Num: 2

Candidate Starts for ByChance\_24:

(1, 24371), (Start: 2 @24431 has 159 MA's), (8, 24458), (14, 24479), (17, 24512), (20, 24545), (39, 24872),

Gene: Cabrinians\_24 Start: 24448, Stop: 25272, Start Num: 2

Candidate Starts for Cabrinians\_24:

(Start: 2 @24448 has 159 MA's), (14, 24496), (17, 24529), (20, 24562), (24, 24634), (39, 24889), (44, 24940),

Gene: CatBus\_37 Start: 29555, Stop: 30343, Start Num: 10

Candidate Starts for CatBus\_37:

(Start: 10 @29555 has 31 MA's), (Start: 12 @29561 has 1 MA's), (16, 29597), (33, 29855), (39, 29960), (43, 29987), (44, 30011), (59, 30188),

Gene: Chanagan\_34 Start: 27633, Stop: 28415, Start Num: 4

Candidate Starts for Chanagan\_34:

(Start: 4 @27633 has 9 MA's), (13, 27669), (18, 27711), (21, 27759), (22, 27762), (35, 27963), (39, 28047), (43, 28074), (44, 28098), (59, 28260),

Gene: Cheesepuff\_26 Start: 25116, Stop: 26096, Start Num: 2

Candidate Starts for Cheesepuff\_26:

(1, 25056), (Start: 2 @25116 has 159 MA's), (14, 25164), (20, 25230), (34, 25458), (49, 25668), (54, 25749), (71, 25974),

Gene: Chevrolet\_24 Start: 24302, Stop: 25084, Start Num: 2

Candidate Starts for Chevrolet\_24:

(1, 24242), (Start: 2 @24302 has 159 MA's), (14, 24350), (20, 24416), (41, 24734), (48, 24788),

Gene: ChickenDinner\_26 Start: 24858, Stop: 25682, Start Num: 2

Candidate Starts for ChickenDinner\_26:

(1, 24798), (Start: 2 @24858 has 159 MA's), (14, 24906), (17, 24939), (20, 24972), (39, 25299),

Gene: Chuckly\_24 Start: 24431, Stop: 25255, Start Num: 2

Candidate Starts for Chuckly\_24:

(1, 24371), (Start: 2 @24431 has 159 MA's), (14, 24479), (20, 24545), (39, 24872),

Gene: Ciao\_35 Start: 27976, Stop: 28779, Start Num: 2

Candidate Starts for Ciao\_35:

(Start: 2 @27976 has 159 MA's), (Start: 12 @28012 has 1 MA's), (19, 28054), (24, 28141), (39, 28396), (44, 28447),

Gene: Cornucopia\_25 Start: 24304, Stop: 25140, Start Num: 2

Candidate Starts for Cornucopia\_25:

(1, 24244), (Start: 2 @24304 has 159 MA's), (14, 24352), (17, 24385), (39, 24757), (44, 24808),

Gene: Corvo\_36 Start: 28990, Stop: 29778, Start Num: 10

Candidate Starts for Corvo\_36:

(Start: 10 @28990 has 31 MA's), (Start: 12 @28996 has 1 MA's), (16, 29032), (33, 29290), (39, 29395), (43, 29422), (44, 29446), (59, 29623),

Gene: Cueyllyss\_35 Start: 28164, Stop: 28952, Start Num: 10

Candidate Starts for Cueyllyss\_35:

(Start: 10 @28164 has 31 MA's), (Start: 12 @28170 has 1 MA's), (16, 28206), (33, 28464), (39, 28569), (43, 28596), (44, 28620), (59, 28797),

Gene: DLane\_24 Start: 24254, Stop: 25078, Start Num: 2

Candidate Starts for DLane\_24:

(1, 24194), (Start: 2 @24254 has 159 MA's), (14, 24302), (17, 24335), (20, 24368), (39, 24695),

Gene: DRBy19\_24 Start: 24290, Stop: 25114, Start Num: 2

Candidate Starts for DRBy19\_24:

(1, 24230), (Start: 2 @24290 has 159 MA's), (14, 24338), (17, 24371), (20, 24404), (24, 24476), (39, 24731),

Gene: DaWorst\_26 Start: 24797, Stop: 25621, Start Num: 2

Candidate Starts for DaWorst\_26:

(Start: 2 @24797 has 159 MA's), (14, 24845), (15, 24866), (39, 25238),

Gene: DaddyRickover\_24 Start: 24437, Stop: 25261, Start Num: 2

Candidate Starts for DaddyRickover\_24:

(1, 24377), (Start: 2 @24437 has 159 MA's), (14, 24485), (20, 24551), (39, 24878),

Gene: Daenerys\_24 Start: 24264, Stop: 25088, Start Num: 2

Candidate Starts for Daenerys\_24:

(1, 24204), (Start: 2 @24264 has 159 MA's), (14, 24312), (20, 24378), (39, 24705),

Gene: DarthPhader\_8 Start: 5319, Stop: 6242, Start Num: 6

Candidate Starts for DarthPhader\_8:

(Start: 6 @5319 has 1 MA's), (34, 5628), (36, 5649),

Gene: Deb65\_24 Start: 24261, Stop: 25085, Start Num: 2

Candidate Starts for Deb65\_24:

(1, 24201), (Start: 2 @24261 has 159 MA's), (14, 24309), (39, 24702),

Gene: DillTech15\_24 Start: 24302, Stop: 25108, Start Num: 3

Candidate Starts for DillTech15\_24:

(1, 24242), (Start: 3 @24302 has 30 MA's), (14, 24350), (15, 24371), (20, 24416), (22, 24443), (25, 24479), (27, 24500), (28, 24506), (59, 24956),

Gene: DirtDevil\_37 Start: 29363, Stop: 30151, Start Num: 10

Candidate Starts for DirtDevil\_37:

(Start: 10 @29363 has 31 MA's), (Start: 12 @29369 has 1 MA's), (16, 29405), (33, 29663), (39, 29768), (43, 29795), (44, 29819), (59, 29996),

Gene: DirtMcgirt\_25 Start: 24087, Stop: 24911, Start Num: 2

Candidate Starts for DirtMcgirt\_25:

(Start: 2 @24087 has 159 MA's), (14, 24135), (17, 24168), (20, 24201), (39, 24528), (59, 24756),

Gene: DoRead\_24 Start: 24262, Stop: 25086, Start Num: 2

Candidate Starts for DoRead\_24:

(1, 24202), (Start: 2 @24262 has 159 MA's), (14, 24310), (17, 24343), (20, 24376), (39, 24703),

Gene: DocMcStuffins\_26 Start: 24858, Stop: 25682, Start Num: 2

Candidate Starts for DocMcStuffins\_26:

(1, 24798), (Start: 2 @24858 has 159 MA's), (14, 24906), (17, 24939), (20, 24972), (39, 25299),

Gene: Donkeykong\_24 Start: 24440, Stop: 25264, Start Num: 2

Candidate Starts for Donkeykong\_24:

(1, 24380), (Start: 2 @24440 has 159 MA's), (14, 24488), (20, 24554), (39, 24881),

Gene: Doomphist\_24 Start: 24402, Stop: 25211, Start Num: 3

Candidate Starts for Doomphist\_24:

(1, 24342), (Start: 3 @24402 has 30 MA's), (14, 24450), (17, 24483), (20, 24516), (22, 24543), (52, 24945), (59, 25056),

Gene: Doomslug\_26 Start: 24123, Stop: 24947, Start Num: 2

Candidate Starts for Doomslug\_26:

(1, 24063), (Start: 2 @24123 has 159 MA's), (14, 24171), (17, 24204), (20, 24237), (39, 24564),

Gene: Dorothy\_24 Start: 24222, Stop: 25046, Start Num: 2

Candidate Starts for Dorothy\_24:

(1, 24162), (Start: 2 @24222 has 159 MA's), (14, 24270), (17, 24303), (20, 24336), (39, 24663),

Gene: DosHalletts\_25 Start: 24377, Stop: 25201, Start Num: 2

Candidate Starts for DosHalletts\_25:

(1, 24317), (Start: 2 @24377 has 159 MA's), (8, 24404), (14, 24425), (17, 24458), (20, 24491), (39, 24818),

Gene: DotProduct\_24 Start: 24269, Stop: 25078, Start Num: 3

Candidate Starts for DotProduct\_24:

(Start: 3 @24269 has 30 MA's), (14, 24317), (17, 24350), (20, 24383), (22, 24410), (52, 24812), (59, 24923),

Gene: Doug\_25 Start: 24814, Stop: 25638, Start Num: 2

Candidate Starts for Doug\_25:

(1, 24754), (Start: 2 @24814 has 159 MA's), (14, 24862), (17, 24895), (20, 24928), (39, 25255),

Gene: Drago\_25 Start: 24086, Stop: 24910, Start Num: 2

Candidate Starts for Drago\_25:

(1, 24026), (Start: 2 @24086 has 159 MA's), (14, 24134), (20, 24200), (39, 24527),

Gene: DreamCatcher\_38 Start: 29392, Stop: 30195, Start Num: 2

Candidate Starts for DreamCatcher\_38:

(Start: 2 @29392 has 159 MA's), (Start: 12 @29428 has 1 MA's), (19, 29470), (39, 29812), (44, 29863),

Gene: Dreamboat\_36 Start: 27996, Stop: 28784, Start Num: 10

Candidate Starts for Dreamboat\_36:

(Start: 10 @27996 has 31 MA's), (Start: 12 @28002 has 1 MA's), (16, 28038), (33, 28296), (39, 28401), (44, 28452), (59, 28629),

Gene: Duke13\_42 Start: 36667, Stop: 37473, Start Num: 3

Candidate Starts for Duke13\_42:

(1, 36607), (Start: 3 @36667 has 30 MA's), (14, 36715), (17, 36748), (20, 36781), (26, 36850), (41, 37111), (42, 37117), (59, 37321), (70, 37468),

Gene: Dulcie\_34 Start: 27688, Stop: 28491, Start Num: 2

Candidate Starts for Dulcie\_34:

(Start: 2 @27688 has 159 MA's), (Start: 12 @27724 has 1 MA's), (19, 27766), (24, 27853), (39, 28108),

Gene: Dussy\_36 Start: 28258, Stop: 29046, Start Num: 10

Candidate Starts for Dussy\_36:

(Start: 10 @28258 has 31 MA's), (Start: 12 @28264 has 1 MA's), (16, 28300), (33, 28558), (39, 28663), (43, 28690), (44, 28714), (59, 28891),

Gene: Dynamix\_36 Start: 28070, Stop: 28879, Start Num: 2

Candidate Starts for Dynamix\_36:

(Start: 2 @28070 has 159 MA's), (Start: 12 @28106 has 1 MA's), (19, 28148), (24, 28235), (39, 28490), (44, 28541),

Gene: Eish\_24 Start: 24401, Stop: 25225, Start Num: 2

Candidate Starts for Eish\_24:

(1, 24341), (Start: 2 @24401 has 159 MA's), (14, 24449), (17, 24482), (20, 24515), (39, 24842), (59, 25070),

Gene: Empress\_25 Start: 25613, Stop: 26437, Start Num: 2

Candidate Starts for Empress\_25:

(1, 25553), (Start: 2 @25613 has 159 MA's), (14, 25661), (39, 26054),

Gene: Enby\_25 Start: 24086, Stop: 24910, Start Num: 2

Candidate Starts for Enby\_25:

(1, 24026), (Start: 2 @24086 has 159 MA's), (14, 24134), (20, 24200), (39, 24527),

Gene: Eradicator\_24 Start: 24309, Stop: 25133, Start Num: 2

Candidate Starts for Eradicator\_24:

(1, 24249), (Start: 2 @24309 has 159 MA's), (14, 24357), (20, 24423), (39, 24750),

Gene: Euphoria\_35 Start: 28029, Stop: 28874, Start Num: 10

Candidate Starts for Euphoria\_35:

(Start: 10 @28029 has 31 MA's), (Start: 12 @28035 has 1 MA's), (16, 28071), (33, 28389), (39, 28494), (43, 28521), (44, 28545), (59, 28719),

Gene: Eyeball\_35 Start: 27834, Stop: 28622, Start Num: 10

Candidate Starts for Eyeball\_35:

(Start: 10 @27834 has 31 MA's), (Start: 12 @27840 has 1 MA's), (16, 27876), (33, 28134), (39, 28239), (43, 28266), (44, 28290), (59, 28467),

Gene: Fajezeel\_37 Start: 28339, Stop: 29142, Start Num: 2

Candidate Starts for Fajezeel\_37:

(Start: 2 @28339 has 159 MA's), (Start: 12 @28375 has 1 MA's), (19, 28417), (24, 28504), (39, 28759), (44, 28810),

Gene: Fancypants\_24 Start: 24269, Stop: 25093, Start Num: 2

Candidate Starts for Fancypants\_24:

(1, 24209), (Start: 2 @24269 has 159 MA's), (14, 24317), (20, 24383), (39, 24710), (52, 24827),

Gene: Fenn\_36 Start: 29657, Stop: 30460, Start Num: 2

Candidate Starts for Fenn\_36:

(Start: 2 @29657 has 159 MA's), (Start: 12 @29693 has 1 MA's), (19, 29735), (39, 30077), (43, 30104), (44, 30128), (46, 30143),

Gene: Filuzino\_24 Start: 24259, Stop: 25083, Start Num: 2

Candidate Starts for Filuzino\_24:

(1, 24199), (Start: 2 @24259 has 159 MA's), (14, 24307), (20, 24373), (39, 24700),

Gene: Florinda\_24 Start: 24279, Stop: 25103, Start Num: 2

Candidate Starts for Florinda\_24:

(Start: 2 @24279 has 159 MA's), (14, 24327), (20, 24393), (39, 24720),

Gene: Forsytheast\_35 Start: 28268, Stop: 29056, Start Num: 10

Candidate Starts for Forsytheast\_35:

(Start: 10 @28268 has 31 MA's), (Start: 12 @28274 has 1 MA's), (16, 28310), (33, 28568), (39, 28673), (43, 28700), (44, 28724), (59, 28901),

Gene: FreddyB\_24 Start: 24457, Stop: 25281, Start Num: 2

Candidate Starts for FreddyB\_24:

(Start: 2 @24457 has 159 MA's), (14, 24505), (17, 24538), (20, 24571), (24, 24643), (39, 24898), (44, 24949),

Gene: GMonster\_34 Start: 27408, Stop: 28217, Start Num: 2

Candidate Starts for GMonster\_34:

(Start: 2 @27408 has 159 MA's), (Start: 12 @27444 has 1 MA's), (19, 27486), (24, 27573), (39, 27828), (44, 27879),

Gene: GUmbie\_24 Start: 24269, Stop: 25093, Start Num: 2  
Candidate Starts for GUmbie\_24:  
(Start: 2 @24269 has 159 MA's), (14, 24317), (17, 24350), (20, 24383), (39, 24710), (59, 24938),

Gene: Gaia\_27 Start: 26804, Stop: 27628, Start Num: 2  
Candidate Starts for Gaia\_27:  
(1, 26744), (Start: 2 @26804 has 159 MA's), (14, 26852), (17, 26885), (20, 26918), (24, 26990), (39, 27245), (59, 27473),

Gene: Galactic\_24 Start: 24262, Stop: 25068, Start Num: 3  
Candidate Starts for Galactic\_24:  
(1, 24202), (Start: 3 @24262 has 30 MA's), (14, 24310), (22, 24403), (41, 24706), (42, 24712), (59, 24916), (70, 25063),

Gene: Gandalf20\_36 Start: 28867, Stop: 29670, Start Num: 2  
Candidate Starts for Gandalf20\_36:  
(Start: 2 @28867 has 159 MA's), (Start: 12 @28903 has 1 MA's), (19, 28945), (24, 29032), (39, 29287),

Gene: Gandalph\_24 Start: 24362, Stop: 25186, Start Num: 2  
Candidate Starts for Gandalph\_24:  
(1, 24302), (Start: 2 @24362 has 159 MA's), (14, 24410), (17, 24443), (20, 24476), (39, 24803), (59, 25031),

Gene: Geralt\_24 Start: 24260, Stop: 25084, Start Num: 2  
Candidate Starts for Geralt\_24:  
(1, 24200), (Start: 2 @24260 has 159 MA's), (14, 24308), (39, 24701),

Gene: GigiOuiOui\_24 Start: 24393, Stop: 25217, Start Num: 2  
Candidate Starts for GigiOuiOui\_24:  
(Start: 2 @24393 has 159 MA's), (14, 24441), (17, 24474), (20, 24507), (39, 24834), (59, 25062),

Gene: Girafales\_25 Start: 24087, Stop: 24911, Start Num: 2  
Candidate Starts for Girafales\_25:  
(Start: 2 @24087 has 159 MA's), (14, 24135), (20, 24201), (39, 24528),

Gene: Girr\_24 Start: 24239, Stop: 25063, Start Num: 2  
Candidate Starts for Girr\_24:  
(1, 24179), (Start: 2 @24239 has 159 MA's), (14, 24287), (39, 24680),

Gene: Gompeii16\_35 Start: 28524, Stop: 29327, Start Num: 2  
Candidate Starts for Gompeii16\_35:  
(Start: 2 @28524 has 159 MA's), (Start: 12 @28560 has 1 MA's), (19, 28602), (24, 28689), (39, 28944), (44, 28995),

Gene: Gonephishing\_40 Start: 34779, Stop: 35744, Start Num: 2  
Candidate Starts for Gonephishing\_40:  
(1, 34719), (Start: 2 @34779 has 159 MA's), (14, 34827), (17, 34860), (20, 34893), (31, 35100), (32, 35106), (34, 35121), (40, 35220), (41, 35232), (47, 35295), (56, 35406), (57, 35427), (58, 35433), (64, 35535), (67, 35601), (68, 35607), (72, 35670), (73, 35673), (74, 35682), (76, 35700), (77, 35727),

Gene: Gorge\_24 Start: 24424, Stop: 25248, Start Num: 2  
Candidate Starts for Gorge\_24:

(1, 24364), (Start: 2 @24424 has 159 MA's), (14, 24472), (17, 24505), (20, 24538), (24, 24610), (39, 24865),

Gene: Graduation\_37 Start: 28751, Stop: 29539, Start Num: 10

Candidate Starts for Graduation\_37:

(Start: 10 @28751 has 31 MA's), (Start: 12 @28757 has 1 MA's), (16, 28793), (33, 29051), (39, 29156), (43, 29183), (44, 29207), (59, 29384),

Gene: GrecoEtereo\_37 Start: 28838, Stop: 29623, Start Num: 10

Candidate Starts for GrecoEtereo\_37:

(Start: 10 @28838 has 31 MA's), (Start: 12 @28844 has 1 MA's), (16, 28880), (33, 29138), (39, 29243), (43, 29270), (44, 29294), (59, 29468),

Gene: Greg\_37 Start: 28339, Stop: 29142, Start Num: 2

Candidate Starts for Greg\_37:

(Start: 2 @28339 has 159 MA's), (Start: 12 @28375 has 1 MA's), (19, 28417), (24, 28504), (39, 28759), (44, 28810),

Gene: Grimmer\_25 Start: 24869, Stop: 25660, Start Num: 2

Candidate Starts for Grimmer\_25:

(Start: 2 @24869 has 159 MA's), (14, 24917), (17, 24950), (20, 24983), (34, 25211), (42, 25337), (55, 25502),

Gene: Hades\_24 Start: 24354, Stop: 25178, Start Num: 2

Candidate Starts for Hades\_24:

(1, 24294), (Start: 2 @24354 has 159 MA's), (39, 24795),

Gene: Harley\_24 Start: 24258, Stop: 25040, Start Num: 2

Candidate Starts for Harley\_24:

(Start: 2 @24258 has 159 MA's), (14, 24306), (20, 24372), (41, 24690), (48, 24744),

Gene: Hermia\_38 Start: 29555, Stop: 30343, Start Num: 10

Candidate Starts for Hermia\_38:

(Start: 10 @29555 has 31 MA's), (Start: 12 @29561 has 1 MA's), (16, 29597), (33, 29855), (39, 29960), (59, 30188),

Gene: HermioneGrange\_35 Start: 27948, Stop: 28751, Start Num: 2

Candidate Starts for HermioneGrange\_35:

(Start: 2 @27948 has 159 MA's), (Start: 12 @27984 has 1 MA's), (19, 28026), (24, 28113), (39, 28368),

Gene: Hope4ever\_35 Start: 28441, Stop: 29229, Start Num: 10

Candidate Starts for Hope4ever\_35:

(Start: 10 @28441 has 31 MA's), (Start: 12 @28447 has 1 MA's), (16, 28483), (33, 28741), (39, 28846), (43, 28873), (44, 28897), (59, 29074),

Gene: ILeeKay\_37 Start: 28205, Stop: 28993, Start Num: 10

Candidate Starts for ILeeKay\_37:

(Start: 10 @28205 has 31 MA's), (Start: 12 @28211 has 1 MA's), (16, 28247), (33, 28505), (39, 28610), (43, 28637), (44, 28661), (59, 28838),

Gene: Ibhubesi\_24 Start: 24265, Stop: 25047, Start Num: 2

Candidate Starts for Ibhubesi\_24:

(Start: 2 @24265 has 159 MA's), (14, 24313), (20, 24379), (41, 24697), (48, 24751),

Gene: Ichabod\_36 Start: 28224, Stop: 29027, Start Num: 2

Candidate Starts for Ichabod\_36:

(Start: 2 @28224 has 159 MA's), (Start: 12 @28260 has 1 MA's), (19, 28302), (24, 28389), (39, 28644), (44, 28695),

Gene: Inventum\_24 Start: 24395, Stop: 25219, Start Num: 2

Candidate Starts for Inventum\_24:

(1, 24335), (Start: 2 @24395 has 159 MA's), (14, 24443), (39, 24836),

Gene: IrishSherpFalk\_25 Start: 25625, Stop: 26431, Start Num: 3

Candidate Starts for IrishSherpFalk\_25:

(1, 25565), (Start: 3 @25625 has 30 MA's), (14, 25673), (17, 25706), (20, 25739), (41, 26069), (42, 26075), (59, 26279), (70, 26426),

Gene: James\_24 Start: 24420, Stop: 25244, Start Num: 2

Candidate Starts for James\_24:

(1, 24360), (Start: 2 @24420 has 159 MA's), (14, 24468), (17, 24501), (20, 24534), (24, 24606), (39, 24861),

Gene: Jant\_24 Start: 24416, Stop: 25240, Start Num: 2

Candidate Starts for Jant\_24:

(1, 24356), (Start: 2 @24416 has 159 MA's), (14, 24464), (20, 24530), (39, 24857), (59, 25085),

Gene: Jarcob\_24 Start: 24455, Stop: 25279, Start Num: 2

Candidate Starts for Jarcob\_24:

(1, 24395), (Start: 2 @24455 has 159 MA's), (14, 24503), (17, 24536), (20, 24569), (24, 24641), (39, 24896),

Gene: Jasper\_36 Start: 27882, Stop: 28670, Start Num: 10

Candidate Starts for Jasper\_36:

(Start: 10 @27882 has 31 MA's), (Start: 12 @27888 has 1 MA's), (16, 27924), (33, 28182), (39, 28287), (43, 28314), (44, 28338), (59, 28515),

Gene: Jerm2\_36 Start: 28214, Stop: 29017, Start Num: 2

Candidate Starts for Jerm2\_36:

(Start: 2 @28214 has 159 MA's), (Start: 12 @28250 has 1 MA's), (19, 28292), (24, 28379), (39, 28634),

Gene: Jinglebell\_23 Start: 24502, Stop: 25308, Start Num: 3

Candidate Starts for Jinglebell\_23:

(Start: 3 @24502 has 30 MA's), (14, 24550), (17, 24583), (20, 24616), (27, 24700), (28, 24706), (31, 24805), (42, 24952), (52, 25045), (59, 25156),

Gene: JoeyJr\_24 Start: 24432, Stop: 25256, Start Num: 2

Candidate Starts for JoeyJr\_24:

(1, 24372), (Start: 2 @24432 has 159 MA's), (14, 24480), (20, 24546), (39, 24873),

Gene: Jorgensen\_35 Start: 27931, Stop: 28722, Start Num: 4

Candidate Starts for Jorgensen\_35:

(Start: 4 @27931 has 9 MA's), (13, 27967), (18, 28009), (22, 28060), (25, 28096), (52, 28459),

Gene: Juniper1\_24 Start: 24259, Stop: 25068, Start Num: 3

Candidate Starts for Juniper1\_24:

(1, 24196), (Start: 3 @24259 has 30 MA's), (5, 24265), (14, 24307), (20, 24373), (22, 24400), (27, 24457), (28, 24463), (31, 24562), (52, 24802), (59, 24913),

Gene: KSSJEB\_35 Start: 27824, Stop: 28633, Start Num: 2

Candidate Starts for KSSJEB\_35:

(Start: 2 @27824 has 159 MA's), (Start: 12 @27860 has 1 MA's), (19, 27902), (39, 28244), (44, 28295),

Gene: Karhdo\_24 Start: 24395, Stop: 25219, Start Num: 2

Candidate Starts for Karhdo\_24:

(1, 24335), (Start: 2 @24395 has 159 MA's), (14, 24443), (17, 24476), (20, 24509), (39, 24836),

Gene: Kenmech\_38 Start: 29345, Stop: 30133, Start Num: 10

Candidate Starts for Kenmech\_38:

(Start: 10 @29345 has 31 MA's), (Start: 12 @29351 has 1 MA's), (16, 29387), (33, 29645), (39, 29750), (43, 29777), (44, 29801), (59, 29978),

Gene: KikiBouba\_37 Start: 29364, Stop: 30152, Start Num: 10

Candidate Starts for KikiBouba\_37:

(Start: 10 @29364 has 31 MA's), (Start: 12 @29370 has 1 MA's), (16, 29406), (33, 29664), (39, 29769), (43, 29796), (44, 29820), (59, 29997),

Gene: Killigrew\_33 Start: 27558, Stop: 28355, Start Num: 4

Candidate Starts for Killigrew\_33:

(Start: 4 @27558 has 9 MA's), (13, 27594), (18, 27636), (21, 27684), (22, 27687), (35, 27888), (39, 27972), (43, 27999), (44, 28023),

Gene: Kimberlium\_26 Start: 25387, Stop: 26211, Start Num: 2

Candidate Starts for Kimberlium\_26:

(1, 25327), (Start: 2 @25387 has 159 MA's), (14, 25435), (20, 25501), (39, 25828), (59, 26056),

Gene: KingMidas\_25 Start: 25564, Stop: 26388, Start Num: 2

Candidate Starts for KingMidas\_25:

(1, 25504), (Start: 2 @25564 has 159 MA's), (14, 25612), (20, 25678), (39, 26005),

Gene: Krakatau\_25 Start: 24963, Stop: 25769, Start Num: 3

Candidate Starts for Krakatau\_25:

(1, 24903), (Start: 3 @24963 has 30 MA's), (14, 25011), (42, 25413), (52, 25506), (59, 25617),

Gene: Leozinho\_25 Start: 24109, Stop: 24933, Start Num: 2

Candidate Starts for Leozinho\_25:

(1, 24049), (Start: 2 @24109 has 159 MA's), (14, 24157), (17, 24190), (20, 24223), (39, 24550),

Gene: Leperchaun\_24 Start: 24336, Stop: 25160, Start Num: 2

Candidate Starts for Leperchaun\_24:

(1, 24276), (Start: 2 @24336 has 159 MA's), (14, 24384), (20, 24450), (39, 24777),

Gene: Licorice\_37 Start: 29036, Stop: 29821, Start Num: 10

Candidate Starts for Licorice\_37:

(Start: 10 @29036 has 31 MA's), (Start: 12 @29042 has 1 MA's), (16, 29078), (33, 29336), (39, 29441), (43, 29468), (44, 29492),

Gene: LilMoolah\_24 Start: 24554, Stop: 25378, Start Num: 2

Candidate Starts for LilMoolah\_24:

(1, 24494), (Start: 2 @24554 has 159 MA's), (8, 24581), (14, 24602), (17, 24635), (20, 24668), (39, 24995),

Gene: LittleE\_45 Start: 37858, Stop: 38664, Start Num: 3

Candidate Starts for LittleE\_45:

(1, 37798), (Start: 3 @37858 has 30 MA's), (14, 37906), (20, 37972), (21, 37996), (22, 37999), (41, 38302), (42, 38308), (59, 38512), (70, 38659),

Gene: Lizziana\_24 Start: 24429, Stop: 25253, Start Num: 2

Candidate Starts for Lizziana\_24:

(Start: 2 @24429 has 159 MA's), (14, 24477), (17, 24510), (20, 24543), (24, 24615), (39, 24870),

Gene: Llama\_24 Start: 24502, Stop: 25308, Start Num: 3

Candidate Starts for Llama\_24:

(Start: 3 @24502 has 30 MA's), (14, 24550), (17, 24583), (20, 24616), (27, 24700), (28, 24706), (31, 24805), (42, 24952), (52, 25045), (59, 25156),

Gene: Llij\_24 Start: 24250, Stop: 25074, Start Num: 2

Candidate Starts for Llij\_24:

(1, 24190), (Start: 2 @24250 has 159 MA's), (14, 24298), (20, 24364), (39, 24691),

Gene: Lopton\_36 Start: 29446, Stop: 30216, Start Num: 2

Candidate Starts for Lopton\_36:

(Start: 2 @29446 has 159 MA's), (Start: 12 @29482 has 1 MA's), (19, 29524), (39, 29866), (44, 29917),

Gene: Lorde\_25 Start: 24086, Stop: 24910, Start Num: 2

Candidate Starts for Lorde\_25:

(1, 24026), (Start: 2 @24086 has 159 MA's), (14, 24134), (20, 24200), (39, 24527),

Gene: Lucia\_25 Start: 24370, Stop: 25194, Start Num: 2

Candidate Starts for Lucia\_25:

(1, 24310), (Start: 2 @24370 has 159 MA's), (14, 24418), (17, 24451), (20, 24484), (24, 24556), (39, 24811), (44, 24862),

Gene: LunarLander\_36 Start: 28152, Stop: 28940, Start Num: 10

Candidate Starts for LunarLander\_36:

(Start: 10 @28152 has 31 MA's), (Start: 12 @28158 has 1 MA's), (16, 28194), (33, 28452), (39, 28557), (43, 28584), (44, 28608), (59, 28785),

Gene: Mahavrat\_24 Start: 24254, Stop: 25063, Start Num: 3

Candidate Starts for Mahavrat\_24:

(Start: 3 @24254 has 30 MA's), (14, 24302), (17, 24335), (20, 24368), (22, 24395), (27, 24452), (28, 24458), (31, 24557), (52, 24797), (59, 24908),

Gene: Manatee\_36 Start: 27769, Stop: 28572, Start Num: 2

Candidate Starts for Manatee\_36:

(Start: 2 @27769 has 159 MA's), (Start: 12 @27805 has 1 MA's), (19, 27847), (24, 27934), (39, 28189), (44, 28240),

Gene: Mandlovu\_24 Start: 24305, Stop: 25288, Start Num: 2

Candidate Starts for Mandlovu\_24:

(1, 24245), (Start: 2 @24305 has 159 MA's), (13, 24347), (14, 24353), (15, 24374), (17, 24386), (20, 24419), (27, 24518), (32, 24632), (34, 24647), (42, 24773), (55, 24938), (75, 25217),

Gene: Mantra\_24 Start: 24362, Stop: 25186, Start Num: 2  
Candidate Starts for Mantra\_24:  
(Start: 2 @24362 has 159 MA's), (14, 24410), (17, 24443), (20, 24476), (39, 24803), (59, 25031),

Gene: Maravista\_24 Start: 24211, Stop: 25035, Start Num: 2  
Candidate Starts for Maravista\_24:  
(1, 24151), (Start: 2 @24211 has 159 MA's), (14, 24259), (20, 24325), (39, 24652),

Gene: Marco3\_35 Start: 28159, Stop: 29103, Start Num: 4  
Candidate Starts for Marco3\_35:  
(Start: 4 @28159 has 9 MA's), (Start: 12 @28195 has 1 MA's), (19, 28237), (24, 28324), (27, 28351),  
(31, 28459), (32, 28465), (34, 28480), (39, 28573), (40, 28579), (41, 28591), (47, 28654), (53, 28696),  
(56, 28765), (57, 28786), (58, 28792), (64, 28894), (67, 28960), (68, 28966), (73, 29032), (74, 29041),  
(76, 29059), (77, 29086),

Gene: Marker\_25 Start: 24115, Stop: 24939, Start Num: 2  
Candidate Starts for Marker\_25:  
(1, 24055), (Start: 2 @24115 has 159 MA's), (14, 24163), (17, 24196), (39, 24556),

Gene: Martik\_24 Start: 24456, Stop: 25280, Start Num: 2  
Candidate Starts for Martik\_24:  
(1, 24396), (Start: 2 @24456 has 159 MA's), (8, 24483), (14, 24504), (17, 24537), (20, 24570), (39, 24897),

Gene: MaryBeth\_35 Start: 28196, Stop: 28984, Start Num: 10  
Candidate Starts for MaryBeth\_35:  
(Start: 10 @28196 has 31 MA's), (Start: 12 @28202 has 1 MA's), (16, 28238), (33, 28496), (39, 28601),  
(43, 28628), (44, 28652), (59, 28829),

Gene: Mattes\_24 Start: 24420, Stop: 25244, Start Num: 2  
Candidate Starts for Mattes\_24:  
(1, 24360), (Start: 2 @24420 has 159 MA's), (14, 24468), (17, 24501), (20, 24534), (24, 24606), (39, 24861),

Gene: McGuire\_36 Start: 28061, Stop: 28864, Start Num: 2  
Candidate Starts for McGuire\_36:  
(Start: 2 @28061 has 159 MA's), (Start: 12 @28097 has 1 MA's), (19, 28139), (24, 28226), (39, 28481),  
(44, 28532),

Gene: Medindi\_24 Start: 24261, Stop: 25085, Start Num: 2  
Candidate Starts for Medindi\_24:  
(1, 24201), (Start: 2 @24261 has 159 MA's), (14, 24309), (17, 24342), (20, 24375), (39, 24702), (44, 24753),

Gene: MetalQZJ\_35 Start: 28196, Stop: 28984, Start Num: 10  
Candidate Starts for MetalQZJ\_35:  
(Start: 10 @28196 has 31 MA's), (Start: 12 @28202 has 1 MA's), (16, 28238), (33, 28496), (39, 28601),  
(43, 28628), (44, 28652), (59, 28829),

Gene: Michley\_35 Start: 27900, Stop: 28703, Start Num: 2  
Candidate Starts for Michley\_35:

(Start: 2 @27900 has 159 MA's), (Start: 12 @27936 has 1 MA's), (19, 27978), (24, 28065), (39, 28320), (44, 28371),

Gene: MilleniumForce\_25 Start: 25077, Stop: 26042, Start Num: 2  
Candidate Starts for MilleniumForce\_25:

(1, 25017), (Start: 2 @25077 has 159 MA's), (14, 25125), (17, 25158), (20, 25191), (24, 25263), (27, 25290), (31, 25398), (34, 25419), (40, 25518), (41, 25530), (47, 25593), (56, 25704), (57, 25725), (58, 25731), (64, 25833), (67, 25899), (68, 25905), (73, 25971), (74, 25980), (76, 25998), (77, 26025),

Gene: Misha28\_25 Start: 24136, Stop: 24960, Start Num: 2  
Candidate Starts for Misha28\_25:

(1, 24076), (Start: 2 @24136 has 159 MA's), (14, 24184), (20, 24250), (39, 24577),

Gene: MisterCuddles\_24 Start: 24239, Stop: 25063, Start Num: 2  
Candidate Starts for MisterCuddles\_24:

(1, 24179), (Start: 2 @24239 has 159 MA's), (14, 24287), (39, 24680),

Gene: Mkhuseli\_36 Start: 28098, Stop: 28901, Start Num: 2  
Candidate Starts for Mkhuseli\_36:

(Start: 2 @28098 has 159 MA's), (Start: 12 @28134 has 1 MA's), (19, 28176), (24, 28263), (39, 28518), (44, 28569),

Gene: Modragons\_24 Start: 24346, Stop: 25152, Start Num: 3  
Candidate Starts for Modragons\_24:

(Start: 3 @24346 has 30 MA's), (14, 24394), (17, 24427), (20, 24460), (27, 24544), (28, 24550), (31, 24649), (42, 24796), (52, 24889), (59, 25000),

Gene: Moose\_35 Start: 28268, Stop: 29056, Start Num: 10  
Candidate Starts for Moose\_35:

(Start: 10 @28268 has 31 MA's), (Start: 12 @28274 has 1 MA's), (16, 28310), (33, 28568), (39, 28673), (43, 28700), (44, 28724), (59, 28901),

Gene: Mova\_25 Start: 24116, Stop: 24940, Start Num: 2  
Candidate Starts for Mova\_25:

(1, 24056), (Start: 2 @24116 has 159 MA's), (14, 24164), (20, 24230), (39, 24557),

Gene: MrGordo\_35 Start: 27763, Stop: 28566, Start Num: 2  
Candidate Starts for MrGordo\_35:

(Start: 2 @27763 has 159 MA's), (Start: 12 @27799 has 1 MA's), (19, 27841), (24, 27928), (39, 28183), (44, 28234),

Gene: Mryolo\_33 Start: 27800, Stop: 28582, Start Num: 12  
Candidate Starts for Mryolo\_33:

(Start: 10 @27794 has 31 MA's), (Start: 12 @27800 has 1 MA's), (16, 27836), (33, 28094), (39, 28199), (43, 28226), (44, 28250), (59, 28427),

Gene: MulchExplorer\_26 Start: 25387, Stop: 26211, Start Num: 2  
Candidate Starts for MulchExplorer\_26:

(1, 25327), (Start: 2 @25387 has 159 MA's), (14, 25435), (20, 25501), (39, 25828), (59, 26056),

Gene: Museum\_37 Start: 28107, Stop: 28910, Start Num: 2  
Candidate Starts for Museum\_37:

(Start: 2 @28107 has 159 MA's), (Start: 12 @28143 has 1 MA's), (19, 28185), (24, 28272), (39, 28527),

Gene: Naira\_36 Start: 29704, Stop: 30507, Start Num: 2

Candidate Starts for Naira\_36:

(Start: 2 @29704 has 159 MA's), (Start: 12 @29740 has 1 MA's), (19, 29782), (39, 30124), (43, 30151), (44, 30175), (46, 30190),

Gene: Nebkiss\_28 Start: 26805, Stop: 27629, Start Num: 2

Candidate Starts for Nebkiss\_28:

(1, 26745), (Start: 2 @26805 has 159 MA's), (14, 26853), (17, 26886), (20, 26919), (24, 26991), (39, 27246),

Gene: Nimbo\_24 Start: 24268, Stop: 25092, Start Num: 3

Candidate Starts for Nimbo\_24:

(1, 24205), (Start: 3 @24268 has 30 MA's), (14, 24316), (39, 24709),

Gene: Nitzel\_25 Start: 24998, Stop: 25822, Start Num: 2

Candidate Starts for Nitzel\_25:

(1, 24938), (Start: 2 @24998 has 159 MA's), (14, 25046), (17, 25079), (20, 25112), (39, 25439),

Gene: Nivrat\_24 Start: 24428, Stop: 25252, Start Num: 2

Candidate Starts for Nivrat\_24:

(1, 24368), (Start: 2 @24428 has 159 MA's), (8, 24455), (14, 24476), (17, 24509), (20, 24542), (39, 24869),

Gene: NormanBulbieJr\_24 Start: 24443, Stop: 25267, Start Num: 2

Candidate Starts for NormanBulbieJr\_24:

(1, 24383), (Start: 2 @24443 has 159 MA's), (8, 24470), (14, 24491), (17, 24524), (20, 24557), (39, 24884),

Gene: Noxious\_37 Start: 29555, Stop: 30343, Start Num: 10

Candidate Starts for Noxious\_37:

(Start: 10 @29555 has 31 MA's), (Start: 12 @29561 has 1 MA's), (16, 29597), (33, 29855), (39, 29960), (43, 29987), (44, 30011), (59, 30188),

Gene: OfUltron\_24 Start: 24502, Stop: 25308, Start Num: 3

Candidate Starts for OfUltron\_24:

(Start: 3 @24502 has 30 MA's), (14, 24550), (17, 24583), (20, 24616), (27, 24700), (28, 24706), (31, 24805), (42, 24952), (52, 25045), (59, 25156),

Gene: Oksu\_25 Start: 24347, Stop: 25153, Start Num: 3

Candidate Starts for Oksu\_25:

(Start: 3 @24347 has 30 MA's), (14, 24395), (17, 24428), (20, 24461), (27, 24545), (28, 24551), (31, 24650), (42, 24797), (52, 24890), (59, 25001),

Gene: OldBen\_24 Start: 24234, Stop: 25058, Start Num: 2

Candidate Starts for OldBen\_24:

(1, 24174), (Start: 2 @24234 has 159 MA's), (14, 24282), (39, 24675),

Gene: OlympiaSaint\_24 Start: 24643, Stop: 25467, Start Num: 2

Candidate Starts for OlympiaSaint\_24:

(Start: 2 @24643 has 159 MA's), (14, 24691), (17, 24724), (20, 24757), (24, 24829), (39, 25084), (44, 25135),

Gene: Optimus\_43 Start: 37661, Stop: 38467, Start Num: 3  
Candidate Starts for Optimus\_43:  
(1, 37601), (Start: 3 @37661 has 30 MA's), (14, 37709), (17, 37742), (20, 37775), (21, 37799), (22, 37802), (41, 38105), (42, 38111), (59, 38315), (70, 38462),

Gene: OwlsT2W\_26 Start: 24714, Stop: 25538, Start Num: 2  
Candidate Starts for OwlsT2W\_26:  
(1, 24654), (Start: 2 @24714 has 159 MA's), (14, 24762), (20, 24828), (39, 25155),

Gene: PHappiness\_24 Start: 24242, Stop: 25066, Start Num: 2  
Candidate Starts for PHappiness\_24:  
(1, 24182), (Start: 2 @24242 has 159 MA's), (14, 24290), (20, 24356), (39, 24683),

Gene: PMC\_24 Start: 24250, Stop: 25074, Start Num: 2  
Candidate Starts for PMC\_24:  
(1, 24190), (Start: 2 @24250 has 159 MA's), (14, 24298), (20, 24364), (39, 24691),

Gene: Pacc40\_24 Start: 24432, Stop: 25256, Start Num: 2  
Candidate Starts for Pacc40\_24:  
(1, 24372), (Start: 2 @24432 has 159 MA's), (14, 24480), (20, 24546), (39, 24873),

Gene: Papez\_37 Start: 29749, Stop: 30537, Start Num: 10  
Candidate Starts for Papez\_37:  
(Start: 10 @29749 has 31 MA's), (Start: 12 @29755 has 1 MA's), (16, 29791), (33, 30049), (39, 30154), (43, 30181), (44, 30205), (59, 30382),

Gene: Pari\_36 Start: 27780, Stop: 28583, Start Num: 2  
Candidate Starts for Pari\_36:  
(Start: 2 @27780 has 159 MA's), (Start: 12 @27816 has 1 MA's), (19, 27858), (24, 27945), (39, 28200),

Gene: PascalRango\_36 Start: 28083, Stop: 28892, Start Num: 2  
Candidate Starts for PascalRango\_36:  
(Start: 2 @28083 has 159 MA's), (Start: 12 @28119 has 1 MA's), (19, 28161), (24, 28248), (39, 28503), (44, 28554),

Gene: PattyP\_37 Start: 28316, Stop: 29119, Start Num: 2  
Candidate Starts for PattyP\_37:  
(Start: 2 @28316 has 159 MA's), (Start: 12 @28352 has 1 MA's), (19, 28394), (24, 28481), (39, 28736),

Gene: Peterson\_38 Start: 29965, Stop: 30759, Start Num: 4  
Candidate Starts for Peterson\_38:  
(Start: 4 @29965 has 9 MA's),

Gene: Petp2012\_37 Start: 28987, Stop: 29790, Start Num: 2  
Candidate Starts for Petp2012\_37:  
(Start: 2 @28987 has 159 MA's), (Start: 12 @29023 has 1 MA's), (19, 29065), (24, 29152), (39, 29407),

Gene: Phasih\_25 Start: 24806, Stop: 25630, Start Num: 2  
Candidate Starts for Phasih\_25:  
(Start: 2 @24806 has 159 MA's), (14, 24854), (17, 24887), (20, 24920), (39, 25247), (59, 25475),

Gene: Phatniss\_25 Start: 24767, Stop: 25591, Start Num: 2  
Candidate Starts for Phatniss\_25:

(1, 24707), (Start: 2 @24767 has 159 MA's), (14, 24815), (17, 24848), (20, 24881), (39, 25208),

Gene: PherrisBueller\_36 Start: 27905, Stop: 28693, Start Num: 10

Candidate Starts for PherrisBueller\_36:

(Start: 10 @27905 has 31 MA's), (Start: 12 @27911 has 1 MA's), (16, 27947), (33, 28205), (39, 28310), (44, 28361), (59, 28538),

Gene: PhesterPhotato\_24 Start: 24286, Stop: 25092, Start Num: 3

Candidate Starts for PhesterPhotato\_24:

(1, 24226), (Start: 3 @24286 has 30 MA's), (14, 24334), (22, 24427), (42, 24736), (52, 24829), (59, 24940), (70, 25087),

Gene: Philus\_24 Start: 24266, Stop: 25090, Start Num: 2

Candidate Starts for Philus\_24:

(1, 24206), (Start: 2 @24266 has 159 MA's), (14, 24314), (17, 24347), (20, 24380), (24, 24452), (39, 24707),

Gene: PinkPlastic\_34 Start: 27834, Stop: 28637, Start Num: 2

Candidate Starts for PinkPlastic\_34:

(Start: 2 @27834 has 159 MA's), (Start: 12 @27870 has 1 MA's), (19, 27912), (24, 27999), (39, 28254), (44, 28305),

Gene: Piper2020\_26 Start: 24860, Stop: 25684, Start Num: 2

Candidate Starts for Piper2020\_26:

(1, 24800), (Start: 2 @24860 has 159 MA's), (14, 24908), (20, 24974), (39, 25301),

Gene: Pippin\_37 Start: 28398, Stop: 29201, Start Num: 2

Candidate Starts for Pippin\_37:

(Start: 2 @28398 has 159 MA's), (Start: 12 @28434 has 1 MA's), (19, 28476), (24, 28563), (39, 28818), (44, 28869),

Gene: Plumbus\_25 Start: 24094, Stop: 24918, Start Num: 2

Candidate Starts for Plumbus\_25:

(1, 24034), (Start: 2 @24094 has 159 MA's), (8, 24121), (14, 24142), (17, 24175), (20, 24208), (39, 24535),

Gene: Poenanya\_24 Start: 24402, Stop: 25211, Start Num: 3

Candidate Starts for Poenanya\_24:

(1, 24342), (Start: 3 @24402 has 30 MA's), (14, 24450), (17, 24483), (20, 24516), (22, 24543), (52, 24945), (59, 25056),

Gene: Polka14\_25 Start: 24804, Stop: 25628, Start Num: 2

Candidate Starts for Polka14\_25:

(1, 24744), (Start: 2 @24804 has 159 MA's), (14, 24852), (17, 24885), (20, 24918), (39, 25245),

Gene: PopTart\_24 Start: 24313, Stop: 25278, Start Num: 2

Candidate Starts for PopTart\_24:

(Start: 2 @24313 has 159 MA's), (14, 24361), (20, 24427), (24, 24499), (27, 24526), (31, 24634), (32, 24640), (34, 24655), (40, 24754), (41, 24766), (47, 24829), (56, 24940), (57, 24961), (58, 24967), (64, 25069), (67, 25135), (68, 25141), (72, 25204), (73, 25207), (74, 25216), (76, 25234), (77, 25261),

Gene: Priscilla\_24 Start: 24457, Stop: 25281, Start Num: 2

Candidate Starts for Priscilla\_24:

(Start: 2 @24457 has 159 MA's), (14, 24505), (17, 24538), (20, 24571), (24, 24643), (39, 24898), (44, 24949),

Gene: Puppet\_35 Start: 28103, Stop: 28891, Start Num: 10

Candidate Starts for Puppet\_35:

(Start: 10 @28103 has 31 MA's), (Start: 12 @28109 has 1 MA's), (16, 28145), (33, 28403), (39, 28508), (43, 28535), (44, 28559), (59, 28736),

Gene: QuickMath\_25 Start: 25611, Stop: 26435, Start Num: 2

Candidate Starts for QuickMath\_25:

(1, 25551), (Start: 2 @25611 has 159 MA's), (14, 25659), (20, 25725), (39, 26052), (59, 26280),

Gene: Quico\_25 Start: 24087, Stop: 24911, Start Num: 2

Candidate Starts for Quico\_25:

(Start: 2 @24087 has 159 MA's), (14, 24135), (20, 24201), (39, 24528),

Gene: Ramsey\_25 Start: 24297, Stop: 25121, Start Num: 2

Candidate Starts for Ramsey\_25:

(1, 24237), (Start: 2 @24297 has 159 MA's), (14, 24345), (17, 24378), (20, 24411), (39, 24738),

Gene: RedBird\_24 Start: 24225, Stop: 25031, Start Num: 3

Candidate Starts for RedBird\_24:

(1, 24165), (Start: 3 @24225 has 30 MA's), (14, 24273), (20, 24339), (21, 24363), (22, 24366), (41, 24669), (42, 24675), (59, 24879), (70, 25026),

Gene: RidgeCB\_35 Start: 27836, Stop: 28624, Start Num: 10

Candidate Starts for RidgeCB\_35:

(Start: 10 @27836 has 31 MA's), (Start: 12 @27842 has 1 MA's), (16, 27878), (33, 28136), (39, 28241), (43, 28268), (44, 28292), (59, 28469),

Gene: Rita\_24 Start: 24276, Stop: 25085, Start Num: 3

Candidate Starts for Rita\_24:

(1, 24216), (Start: 3 @24276 has 30 MA's), (14, 24324), (20, 24390), (22, 24417), (27, 24474), (28, 24480), (31, 24579), (52, 24819), (59, 24930),

Gene: RitaG\_24 Start: 24488, Stop: 25312, Start Num: 2

Candidate Starts for RitaG\_24:

(1, 24428), (Start: 2 @24488 has 159 MA's), (14, 24536), (39, 24929),

Gene: Rockne\_24 Start: 24250, Stop: 25074, Start Num: 2

Candidate Starts for Rockne\_24:

(1, 24190), (Start: 2 @24250 has 159 MA's), (14, 24298), (20, 24364), (39, 24691),

Gene: RockyHorror\_25 Start: 24122, Stop: 24946, Start Num: 2

Candidate Starts for RockyHorror\_25:

(1, 24062), (Start: 2 @24122 has 159 MA's), (14, 24170), (20, 24236), (39, 24563), (69, 24929),

Gene: Rohr\_36 Start: 28253, Stop: 29056, Start Num: 2

Candidate Starts for Rohr\_36:

(Start: 2 @28253 has 159 MA's), (Start: 12 @28289 has 1 MA's), (19, 28331), (24, 28418), (39, 28673),

Gene: Royals2015\_24 Start: 24344, Stop: 25168, Start Num: 2

Candidate Starts for Royals2015\_24:

(1, 24284), (Start: 2 @24344 has 159 MA's), (14, 24392), (17, 24425), (20, 24458), (38, 24740), (39, 24785), (44, 24836), (59, 25013),

Gene: Ruby\_24 Start: 24239, Stop: 25063, Start Num: 2

Candidate Starts for Ruby\_24:

(1, 24179), (Start: 2 @24239 has 159 MA's), (14, 24287), (39, 24680),

Gene: Rufus\_36 Start: 28440, Stop: 29189, Start Num: 4

Candidate Starts for Rufus\_36:

(Start: 4 @28440 has 9 MA's), (Start: 12 @28476 has 1 MA's), (19, 28518), (27, 28632), (30, 28731), (32, 28746), (37, 28806), (51, 28977), (55, 29046),

Gene: STLscum\_36 Start: 28859, Stop: 29803, Start Num: 4

Candidate Starts for STLscum\_36:

(Start: 4 @28859 has 9 MA's), (Start: 12 @28895 has 1 MA's), (19, 28937), (27, 29051), (31, 29159), (32, 29165), (34, 29180), (40, 29279), (41, 29291), (47, 29354), (56, 29465), (57, 29486), (58, 29492), (64, 29594), (67, 29660), (68, 29666), (72, 29729), (73, 29732), (74, 29741), (76, 29759), (77, 29786),

Gene: Saal\_24 Start: 24244, Stop: 25068, Start Num: 2

Candidate Starts for Saal\_24:

(1, 24184), (Start: 2 @24244 has 159 MA's), (14, 24292), (17, 24325), (20, 24358), (24, 24430), (39, 24685),

Gene: Sassafras\_24 Start: 24395, Stop: 25219, Start Num: 2

Candidate Starts for Sassafras\_24:

(1, 24335), (Start: 2 @24395 has 159 MA's), (14, 24443), (39, 24836),

Gene: SassyB\_24 Start: 24313, Stop: 25278, Start Num: 2

Candidate Starts for SassyB\_24:

(Start: 2 @24313 has 159 MA's), (14, 24361), (20, 24427), (24, 24499), (27, 24526), (31, 24634), (32, 24640), (34, 24655), (40, 24754), (41, 24766), (47, 24829), (56, 24940), (57, 24961), (58, 24967), (64, 25069), (67, 25135), (68, 25141), (72, 25204), (73, 25207), (74, 25216), (76, 25234), (77, 25261),

Gene: Scottish\_25 Start: 25565, Stop: 26389, Start Num: 2

Candidate Starts for Scottish\_25:

(1, 25505), (Start: 2 @25565 has 159 MA's), (14, 25613), (20, 25679), (39, 26006),

Gene: Seabastian\_24 Start: 24502, Stop: 25308, Start Num: 3

Candidate Starts for Seabastian\_24:

(Start: 3 @24502 has 30 MA's), (14, 24550), (17, 24583), (20, 24616), (27, 24700), (28, 24706), (31, 24805), (42, 24952), (52, 25045), (59, 25156),

Gene: Seabiscuit\_37 Start: 28061, Stop: 28864, Start Num: 2

Candidate Starts for Seabiscuit\_37:

(Start: 2 @28061 has 159 MA's), (Start: 12 @28097 has 1 MA's), (19, 28139), (39, 28481), (44, 28532),

Gene: ShiLan\_24 Start: 24455, Stop: 25279, Start Num: 2

Candidate Starts for ShiLan\_24:

(Start: 2 @24455 has 159 MA's), (14, 24503), (17, 24536), (20, 24569), (39, 24896),

Gene: ShowerHandel\_24 Start: 24456, Stop: 25280, Start Num: 2

Candidate Starts for ShowerHandel\_24:

(1, 24396), (Start: 2 @24456 has 159 MA's), (8, 24483), (14, 24504), (17, 24537), (20, 24570), (39, 24897),

Gene: SiSi\_24 Start: 24255, Stop: 25079, Start Num: 2

Candidate Starts for SiSi\_24:

(Start: 2 @24255 has 159 MA's), (14, 24303), (17, 24336), (20, 24369), (39, 24696), (59, 24924),

Gene: SimranZ1\_25 Start: 24067, Stop: 24906, Start Num: 3

Candidate Starts for SimranZ1\_25:

(1, 24004), (Start: 3 @24067 has 30 MA's), (5, 24073), (14, 24115), (22, 24208), (32, 24379), (34, 24394), (35, 24412), (52, 24622), (60, 24751), (62, 24781), (63, 24796), (65, 24856),

Gene: Smeagol\_37 Start: 29393, Stop: 30175, Start Num: 4

Candidate Starts for Smeagol\_37:

(Start: 4 @29393 has 9 MA's), (23, 29528), (41, 29816), (50, 29903), (61, 30044),

Gene: Sparkdehlily\_24 Start: 24290, Stop: 25114, Start Num: 2

Candidate Starts for Sparkdehlily\_24:

(1, 24230), (Start: 2 @24290 has 159 MA's), (14, 24338), (17, 24371), (20, 24404), (24, 24476), (39, 24731),

Gene: Spoonbill\_24 Start: 24454, Stop: 25278, Start Num: 2

Candidate Starts for Spoonbill\_24:

(Start: 2 @24454 has 159 MA's), (14, 24502), (17, 24535), (20, 24568), (24, 24640), (39, 24895), (44, 24946),

Gene: Squee\_36 Start: 28900, Stop: 29703, Start Num: 2

Candidate Starts for Squee\_36:

(Start: 2 @28900 has 159 MA's), (Start: 12 @28936 has 1 MA's), (19, 28978), (39, 29320), (44, 29371),

Gene: Strokeseat\_24 Start: 24362, Stop: 25345, Start Num: 2

Candidate Starts for Strokeseat\_24:

(1, 24302), (Start: 2 @24362 has 159 MA's), (13, 24404), (14, 24410), (15, 24431), (17, 24443), (20, 24476), (27, 24575), (32, 24689), (34, 24704), (42, 24830), (55, 24995), (75, 25274),

Gene: SwagPiggett\_24 Start: 24267, Stop: 25091, Start Num: 2

Candidate Starts for SwagPiggett\_24:

(1, 24207), (Start: 2 @24267 has 159 MA's), (14, 24315), (17, 24348), (20, 24381), (24, 24453), (39, 24708),

Gene: SwissCheese\_37 Start: 28768, Stop: 29556, Start Num: 10

Candidate Starts for SwissCheese\_37:

(Start: 10 @28768 has 31 MA's), (Start: 12 @28774 has 1 MA's), (16, 28810), (33, 29068), (39, 29173), (43, 29200), (44, 29224), (59, 29401),

Gene: Switzer\_36 Start: 28167, Stop: 28970, Start Num: 2

Candidate Starts for Switzer\_36:

(Start: 2 @28167 has 159 MA's), (Start: 12 @28203 has 1 MA's), (19, 28245), (24, 28332), (39, 28587), (44, 28638),

Gene: TDanisky\_24 Start: 24290, Stop: 25114, Start Num: 2

Candidate Starts for TDanisky\_24:

(1, 24230), (Start: 2 @24290 has 159 MA's), (14, 24338), (17, 24371), (20, 24404), (24, 24476), (39, 24731),

Gene: TheloniousMonk\_37 Start: 29707, Stop: 30498, Start Num: 7

Candidate Starts for TheloniousMonk\_37:

(Start: 7 @29707 has 1 MA's), (9, 29722), (11, 29728), (19, 29773), (24, 29860), (39, 30115), (44, 30166),

Gene: TootsiePop\_25 Start: 24136, Stop: 24960, Start Num: 2

Candidate Starts for TootsiePop\_25:

(1, 24076), (Start: 2 @24136 has 159 MA's), (14, 24184), (20, 24250), (39, 24577),

Gene: Topiatin\_26 Start: 24966, Stop: 25772, Start Num: 3

Candidate Starts for Topiatin\_26:

(1, 24906), (Start: 3 @24966 has 30 MA's), (14, 25014), (17, 25047), (20, 25080), (41, 25410), (42, 25416), (59, 25620), (70, 25767),

Gene: Tripl3t\_36 Start: 28912, Stop: 29700, Start Num: 10

Candidate Starts for Tripl3t\_36:

(Start: 10 @28912 has 31 MA's), (Start: 12 @28918 has 1 MA's), (16, 28954), (33, 29212), (39, 29317), (43, 29344), (44, 29368), (59, 29545),

Gene: Turj99\_34 Start: 27794, Stop: 28738, Start Num: 4

Candidate Starts for Turj99\_34:

(Start: 4 @27794 has 9 MA's), (Start: 12 @27830 has 1 MA's), (19, 27872), (24, 27959), (27, 27986), (31, 28094), (32, 28100), (34, 28115), (40, 28214), (41, 28226), (47, 28289), (56, 28400), (57, 28421), (58, 28427), (64, 28529), (67, 28595), (68, 28601), (73, 28667), (74, 28676), (76, 28694),

Gene: U2\_35 Start: 28173, Stop: 28955, Start Num: 2

Candidate Starts for U2\_35:

(Start: 2 @28173 has 159 MA's), (Start: 12 @28209 has 1 MA's), (19, 28251), (24, 28338), (39, 28572), (44, 28623),

Gene: UncleRicky\_27 Start: 25583, Stop: 26407, Start Num: 2

Candidate Starts for UncleRicky\_27:

(1, 25523), (Start: 2 @25583 has 159 MA's), (14, 25631), (20, 25697), (39, 26024),

Gene: Veteran\_24 Start: 24269, Stop: 25093, Start Num: 2

Candidate Starts for Veteran\_24:

(Start: 2 @24269 has 159 MA's), (14, 24317), (17, 24350), (20, 24383), (39, 24710), (59, 24938),

Gene: Violac\_25 Start: 24966, Stop: 25790, Start Num: 2

Candidate Starts for Violac\_25:

(1, 24906), (Start: 2 @24966 has 159 MA's), (14, 25014), (20, 25080), (39, 25407),

Gene: Violet\_34 Start: 28585, Stop: 29373, Start Num: 10

Candidate Starts for Violet\_34:

(Start: 10 @28585 has 31 MA's), (Start: 12 @28591 has 1 MA's), (16, 28627), (33, 28885), (39, 28990), (43, 29017), (44, 29041), (59, 29218),

Gene: Vivum\_24 Start: 24212, Stop: 25018, Start Num: 3

Candidate Starts for Vivum\_24:

(1, 24152), (Start: 3 @24212 has 30 MA's), (14, 24260), (20, 24326), (21, 24350), (22, 24353), (41, 24656), (42, 24662), (59, 24866), (70, 25013),

Gene: Wanda\_45 Start: 36693, Stop: 37499, Start Num: 3

Candidate Starts for Wanda\_45:

(1, 36633), (Start: 3 @36693 has 30 MA's), (14, 36741), (17, 36774), (20, 36807), (26, 36876), (41, 37137), (42, 37143), (59, 37347), (70, 37494),

Gene: Watermelon\_37 Start: 28921, Stop: 29709, Start Num: 10

Candidate Starts for Watermelon\_37:

(Start: 10 @28921 has 31 MA's), (Start: 12 @28927 has 1 MA's), (16, 28963), (33, 29221), (39, 29326), (43, 29353), (44, 29377), (59, 29554),

Gene: WillSterrel\_25 Start: 25658, Stop: 26464, Start Num: 3

Candidate Starts for WillSterrel\_25:

(1, 25598), (Start: 3 @25658 has 30 MA's), (14, 25706), (17, 25739), (20, 25772), (41, 26102), (42, 26108), (59, 26312), (70, 26459),

Gene: Yorick\_24 Start: 24454, Stop: 25278, Start Num: 2

Candidate Starts for Yorick\_24:

(1, 24394), (Start: 2 @24454 has 159 MA's), (8, 24481), (14, 24502), (17, 24535), (20, 24568), (39, 24895),

Gene: Zeeculate\_35 Start: 28799, Stop: 29602, Start Num: 2

Candidate Starts for Zeeculate\_35:

(Start: 2 @28799 has 159 MA's), (Start: 12 @28835 has 1 MA's), (19, 28877), (24, 28964), (39, 29219), (44, 29270), (59, 29447),

Gene: Zerg\_24 Start: 24231, Stop: 25055, Start Num: 2

Candidate Starts for Zerg\_24:

(1, 24171), (Start: 2 @24231 has 159 MA's), (14, 24279), (20, 24345), (39, 24672), (69, 25038),

Gene: Zizzle\_24 Start: 24398, Stop: 25222, Start Num: 2

Candidate Starts for Zizzle\_24:

(Start: 2 @24398 has 159 MA's), (14, 24446), (17, 24479), (20, 24512), (39, 24839),