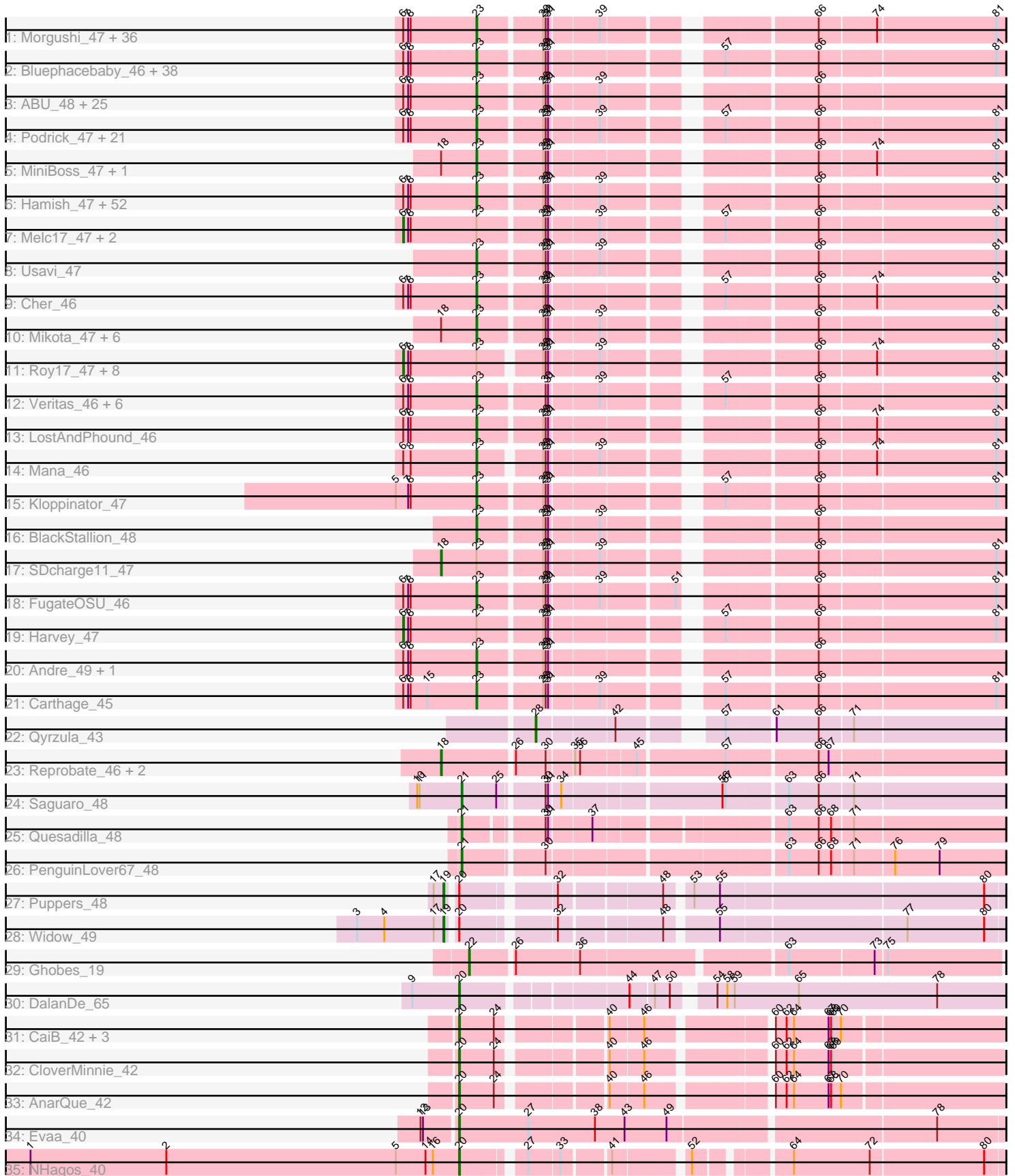


Pham 163330



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 163330 Report

This analysis was run 04/28/24 on database version 559.

Pham number 163330 has 236 members, 19 are drafts.

Phages represented in each track:

- Track 1 : Morgushi\_47, Freya\_46, Grand2040\_46, Daffy\_47, Beaglebox\_46, Kwadwo\_46, Ricotta\_47, Sophia\_46, Haleema\_46, Lumine\_46, CamL\_47, MrPhizzler\_46, Timmi\_46, Eugenia\_47, Serendipity\_47, Brilliant\_47, Kahve\_46, Simielle\_46, QueenBeane\_47, TomBombadil\_47, Maru\_46, PinheadLarry\_47, Rimu\_49, Longacauda\_46, HenryJackson\_46, Toni\_46, Gareth\_46, Dice\_49, Hocus\_46, Cannibal\_47, Dione\_46, Orfeu\_47, Legolas\_47, Samaymay\_47, Lasso\_47, Phareon\_47, LuckyMarjie\_46
- Track 2 : Bluephacebaby\_46, Altwerkus\_46, DonSanchon\_46, Potter\_46, Robyn\_46, Cosmolli16\_46, Schadenfreude\_46, True\_46, SassyCat97\_46, MitKao\_47, Cobra\_47, Mesh1\_47, JangoPhett\_47, UAch1\_47, PhatLouie\_47, DelRivs\_46, Derpp\_46, Zonia\_47, YouGoGlencoco\_47, Aelin\_46, Pinkman\_46, Jillium\_46, Wallhey\_46, Surely\_47, TyrionL\_46, Chorkpop\_47, FriarPreacher\_46, Kwksand96\_46, Virapocalypse\_47, Labeouficaum\_46, Zelda\_47, Held\_47, Thora\_47, LemonSlice\_47, GeneCoco\_47, Zaider\_48, Hetaeria\_47, Antonia\_46, Placalicious\_46
- Track 3 : ABU\_48, PhrodoBaggins\_47, HighStump\_47, Morty\_48, PG1\_48, LasagnaCat\_48, RedMaple\_47, Katniss\_48, Mulan\_47, Scoot17C\_48, Craff\_48, CampRoach\_48, Swish\_48, PhatCats2014\_48, MelsMeow\_47, Inchworm\_48, Badfish\_48, Yoshand\_48, Lego3393\_46, Fringe\_48, Durga\_48, Phamished\_48, Pherdinand\_48, Adriana\_48, Emiris\_48, Orion\_48
- Track 4 : Podrick\_47, KLucky39\_47, Numberten\_47, Piglet\_0046, Scrick\_47, Dati\_47, Etaye\_47, Telesworld\_46, Charles1\_47, Weher20\_47, Quisquilliae\_47, Lulwa\_47, Chunky\_47, HSavage\_47, Pops\_47, Slatt\_47, DirtJuice\_47, Plmatters\_47, Oline\_46, Buckeye\_47, Frankicide\_47, Tooj\_47
- Track 5 : MiniBoss\_47, AltPhacts\_47
- Track 6 : Hamish\_47, Chaelin\_47, Burr\_46, Phunky\_47, Suffolk\_47, Cornobble\_46, Gophee\_47, KingTut\_38, Megamind20\_47, Skippy\_47, Roscoe\_48, Horchata\_47, Fozzie\_46, Eremos\_47, Duggie\_46, AbsoluteMadLad\_46, Prickles\_47, Keitherie\_47, Mutante\_46, Crownjwl\_47, Iridoclysis\_47, MRabcd\_46, ProfessorX\_47, Spartan300\_47, Riggan\_47, Omniscient\_47, Schueller\_47, LeiMonet\_48, Kimbrough\_47, Daka\_48, ShiVal\_47, Boehler\_47, Squiggle\_47, Soile\_47, Solosis\_46, Doddsville\_47, Jiraiya\_48, Bishoperium\_46, Windsor\_46, Mecca\_46, Gwilliam\_48, Anderson\_47, Virgeve\_46, Struggle\_46, Childish\_46, Haimas\_47, EmpTee\_47, CharlieGBrown\_46, Tomlarah\_47, Valjean\_47, DaddyDaniels\_47, JakeO\_46, Jiminy\_46
- Track 7 : Melc17\_47, JDog\_47, Vaishali24\_46
- Track 8 : Usavi\_47

- Track 9 : Cher\_46
- Track 10 : Mikota\_47, BlueHusk\_47, Dingo\_47, Soto\_47, Roliet\_47, Sheila\_47, KingVeVeVe\_47
- Track 11 : Roy17\_47, Vaticameos\_43, Murdoc\_47, Lulumae\_46, Vortex\_47, Puhltonio\_47, Banjo\_46, Xavier\_46, TallGrassMM\_47
- Track 12 : Veritas\_46, Kailash\_47, Magic8\_47, BatteryCK\_46, Mag7\_46, MichaelPhcott\_46, Nicole21\_47
- Track 13 : LostAndPhound\_46
- Track 14 : Mana\_46
- Track 15 : Kloppinator\_47
- Track 16 : BlackStallion\_48
- Track 17 : SDcharge11\_47
- Track 18 : FugateOSU\_46
- Track 19 : Harvey\_47
- Track 20 : Andre\_49, DuchessDung\_46
- Track 21 : Carthage\_45
- Track 22 : Qyrzula\_43
- Track 23 : Reprobate\_46, Mysterious\_47, Phelemich\_45
- Track 24 : Saguario\_48
- Track 25 : Quesadilla\_48
- Track 26 : PenguinLover67\_48
- Track 27 : Puppies\_48
- Track 28 : Widow\_49
- Track 29 : Ghobes\_19
- Track 30 : DalanDe\_65
- Track 31 : CaiB\_42, Wooper\_42, MossRose\_42, MakoManhole\_42
- Track 32 : CloverMinnie\_42
- Track 33 : AnarQue\_42
- Track 34 : Evaa\_40
- Track 35 : NHagos\_40

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

The start number called the most often in the published annotations is 23, it was called in 187 of the 217 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ABU\_48, AbsoluteMadLad\_46, Adriana\_48, Aelin\_46, AltPhacts\_47, Altwerkus\_46, Anderson\_47, Andre\_49, Antonia\_46, Badfish\_48, BatteryCK\_46, Beaglebox\_46, Bishoperium\_46, BlackStallion\_48, BlueHusk\_47, Bluephacebaby\_46, Boehler\_47, Brilliant\_47, Buckeye\_47, Burr\_46, CamL\_47, CampRoach\_48, Cannibal\_47, Carthage\_45, Chaelin\_47, Charles1\_47, CharlieGBrown\_46, Cher\_46, Childish\_46, Chorkpop\_47, Chunky\_47, Cobra\_47, Cornobble\_46, Cosmolli16\_46, Craff\_48, Crownjwl\_47, DaddyDaniels\_47, Daffy\_47, Daka\_48, Dati\_47, DelRivs\_46, Derpp\_46, Dice\_49, Dingo\_47, Dione\_46, DirtJuice\_47, Doddsville\_47, DonSanchon\_46, DuchessDung\_46, Duggie\_46, Durga\_48, Emiris\_48, EmpTee\_47, Eremos\_47, Etaye\_47, Eugenia\_47, Fozzie\_46, Frankicide\_47, Freya\_46, FriarPreacher\_46, Fringe\_48, FugateOSU\_46, Gareth\_46, GeneCoco\_47, Gophee\_47, Grand2040\_46, Gwilliam\_48, HSavage\_47, Haimas\_47, Haleema\_46, Hamish\_47, Held\_47, HenryJackson\_46, Hetaeria\_47, HighStump\_47, Hocus\_46,

Horchata\_47, Inchworm\_48, Iridoclysis\_47, JakeO\_46, JangoPhett\_47, Jillium\_46, Jiminy\_46, Jiraiya\_48, KLucky39\_47, Kahve\_46, Kailash\_47, Katniss\_48, Keitherie\_47, Kimbrough\_47, KingTut\_38, KingVeVeVe\_47, Kloppinator\_47, Kwadwo\_46, Kwksand96\_46, Labeouficaum\_46, LasagnaCat\_48, Lasso\_47, Lego3393\_46, Legolas\_47, LeiMonet\_48, LemonSlice\_47, Longacauda\_46, LostAndPhound\_46, LuckyMarjie\_46, Lulwa\_47, Lumine\_46, MRabcd\_46, Mag7\_46, Magic8\_47, Mana\_46, Maru\_46, Mecca\_46, Megamind20\_47, MelsMeow\_47, Mesh1\_47, MichaelPhcott\_46, Mikota\_47, MiniBoss\_47, MitKao\_47, Morgushi\_47, Morty\_48, MrPhizzler\_46, Mulan\_47, Mutante\_46, Nicole21\_47, Numberberten\_47, Oline\_46, Omniscient\_47, Orfeu\_47, Orion\_48, PG1\_48, Phamished\_48, Phareon\_47, PhatCats2014\_48, PhatLouie\_47, Pherdinand\_48, PhrodoBaggins\_47, Phunky\_47, Piglet\_0046, PinheadLarry\_47, Pinkman\_46, Placalicious\_46, Plmatters\_47, Podrick\_47, Pops\_47, Potter\_46, Prickles\_47, ProfessorX\_47, QueenBeane\_47, Quisquiliae\_47, RedMaple\_47, Ricotta\_47, Riggan\_47, Rimu\_49, Robyn\_46, Roliet\_47, Roscoe\_48, Samaymay\_47, SassyCat97\_46, Schadenfreude\_46, Schueller\_47, Scoot17C\_48, Scrick\_47, Serendipity\_47, Sheila\_47, ShiVal\_47, Simielle\_46, Skippy\_47, Slatt\_47, Soile\_47, Solosis\_46, Sophia\_46, Soto\_47, Spartan300\_47, Squiggle\_47, Struggle\_46, Suffolk\_47, Surely\_47, Swish\_48, Telesworld\_46, Thora\_47, Timmi\_46, TomBombadil\_47, Tomlarah\_47, Toni\_46, Tooj\_47, True\_46, TyrionL\_46, UAch1\_47, Usavi\_47, Valjean\_47, Veritas\_46, Virapocalypse\_47, Virgeve\_46, Wallhey\_46, Weher20\_47, Windsor\_46, Yoshand\_48, YouGoGlencoco\_47, Zaider\_48, Zelda\_47, Zonia\_47,

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

- Banjo\_46, Harvey\_47, JDog\_47, Lulumae\_46, Melc17\_47, Murdoc\_47, Puhltonio\_47, Roy17\_47, SDcharge11\_47, TallGrassMM\_47, Vaishali24\_46, Vaticameos\_43, Vortex\_47, Xavier\_46,

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

- AnarQue\_42, CaiB\_42, CloverMinnie\_42, DalanDe\_65, Evaa\_40, Ghobes\_19, MakoManhole\_42, MossRose\_42, Mysterious\_47, NHagos\_40, PenguinLover67\_48, Phelemich\_45, Puppies\_48, Quesadilla\_48, Qyrzula\_43, Reprobate\_46, Saguaro\_48, Widow\_49, Wooper\_42,

### Summary by start number:

Start 6:

- Found in 204 of 236 ( 86.4% ) of genes in pham
- Manual Annotations of this start: 12 of 217
- Called 6.4% of time when present
- Phage (with cluster) where this start called: Banjo\_46 (B1), Harvey\_47 (B1), JDog\_47 (B1), Lulumae\_46 (B1), Melc17\_47 (B1), Murdoc\_47 (B1), Puhltonio\_47 (B1), Roy17\_47 (B1), TallGrassMM\_47 (B1), Vaishali24\_46 (B1), Vaticameos\_43 (B1), Vortex\_47 (B1), Xavier\_46 (B1),

Start 18:

- Found in 13 of 236 ( 5.5% ) of genes in pham
- Manual Annotations of this start: 3 of 217
- Called 30.8% of time when present
- Phage (with cluster) where this start called: Mysterious\_47 (B5), Phelemich\_45 (B5), Reprobate\_46 (B5), SDcharge11\_47 (B1),

Start 19:

- Found in 2 of 236 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 217
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Puppies\_48 (CD), Widow\_49 (CD),

#### Start 20:

- Found in 11 of 236 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 8 of 217
- Called 81.8% of time when present
- Phage (with cluster) where this start called: AnarQue\_42 (DR), CaiB\_42 (DR), CloverMinnie\_42 (DR), DalanDe\_65 (DQ), Evaa\_40 (DR), MakoManhole\_42 (DR), MossRose\_42 (DR), NHagos\_40 (DR), Wooper\_42 (DR),

#### Start 21:

- Found in 3 of 236 ( 1.3% ) of genes in pham
- Manual Annotations of this start: 3 of 217
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PenguinLover67\_48 (B9), Quesadilla\_48 (B9), Saguaro\_48 (B7),

#### Start 22:

- Found in 1 of 236 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 217
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ghobes\_19 (DA),

#### Start 23:

- Found in 217 of 236 ( 91.9% ) of genes in pham
- Manual Annotations of this start: 187 of 217
- Called 93.5% of time when present
- Phage (with cluster) where this start called: ABU\_48 (B1), AbsoluteMadLad\_46 (B1), Adriana\_48 (B1), Aelin\_46 (B1), AltPhacts\_47 (B1), Altwerkus\_46 (B1), Anderson\_47 (B1), Andre\_49 (B1), Antonia\_46 (B1), Badfish\_48 (B1), BatteryCK\_46 (B1), Beaglebox\_46 (B1), Bishoperium\_46 (B1), BlackStallion\_48 (B1), BlueHusk\_47 (B1), Bluephacebaby\_46 (B1), Boehler\_47 (B1), Brilliant\_47 (B1), Buckeye\_47 (B1), Burr\_46 (B1), CamL\_47 (B1), CampRoach\_48 (B1), Cannibal\_47 (B1), Carthage\_45 (B1), Chaelin\_47 (B1), Charles1\_47 (B1), CharlieGBrown\_46 (B1), Cher\_46 (B1), Childish\_46 (B1), Chorkpop\_47 (B1), Chunky\_47 (B1), Cobra\_47 (B1), Cornobble\_46 (B1), Cosmolli16\_46 (B1), Craff\_48 (B1), Crownjwl\_47 (B1), DaddyDaniels\_47 (B1), Daffy\_47 (B1), Daka\_48 (B1), Dati\_47 (B1), DelRivs\_46 (B1), Derpp\_46 (B1), Dice\_49 (B1), Dingo\_47 (B1), Dione\_46 (B1), DirtJuice\_47 (B1), Doddsville\_47 (B1), DonSanchon\_46 (B1), DuchessDung\_46 (B1), Duggie\_46 (B1), Durga\_48 (B1), Emiris\_48 (B1), EmpTee\_47 (B1), Eremos\_47 (B1), Etaye\_47 (B1), Eugenia\_47 (B1), Fozzie\_46 (B1), Frankicide\_47 (B1), Freya\_46 (B1), FriarPreacher\_46 (B1), Fringe\_48 (B1), FugateOSU\_46 (B1), Gareth\_46 (B1), GeneCoco\_47 (B1), Gophee\_47 (B1), Grand2040\_46 (B1), Gwilliam\_48 (B1), HSavage\_47 (B1), Haimas\_47 (B1), Haleema\_46 (B1), Hamish\_47 (B1), Held\_47 (B1), HenryJackson\_46 (B1), Hetaeria\_47 (B1), HighStump\_47 (B1), Hocus\_46 (B1), Horchata\_47 (B1), Inchworm\_48 (B1), Iridoclysis\_47 (B1), JakeO\_46 (B1), JangoPhett\_47 (B1), Jillium\_46 (B1), Jiminy\_46 (B1), Jiraiya\_48 (B1), KLucky39\_47 (B1), Kahve\_46 (B1), Kailash\_47 (B1), Katniss\_48 (B1), Keitherie\_47 (B1), Kimbrough\_47 (B1), KingTut\_38 (B1), KingVeVeVe\_47 (B1), Kloppinator\_47 (B1), Kwadwo\_46 (B1), Kwksand96\_46 (B1), Labeouficaum\_46 (B1), LasagnaCat\_48 (B1),

Lasso\_47 (B1), Lego3393\_46 (B1), Legolas\_47 (B1), LeiMonet\_48 (B1), LemonSlice\_47 (B1), Longacauda\_46 (B1), LostAndPhound\_46 (B1), LuckyMarjie\_46 (B1), Lulwa\_47 (B1), Lumine\_46 (B1), MRabcd\_46 (B1), Mag7\_46 (B1), Magic8\_47 (B1), Mana\_46 (B1), Maru\_46 (B1), Mecca\_46 (B1), Megamind20\_47 (B1), MelsMeow\_47 (B1), Mesh1\_47 (B1), MichaelPhcott\_46 (B1), Mikota\_47 (B1), MiniBoss\_47 (B1), MitKao\_47 (B1), Morgushi\_47 (B1), Morty\_48 (B1), MrPhizzler\_46 (B1), Mulan\_47 (B1), Mutante\_46 (B1), Nicole21\_47 (B1), Numberten\_47 (B1), Oline\_46 (B1), Omniscient\_47 (B1), Orfeu\_47 (B1), Orion\_48 (B1), PG1\_48 (B1), Phamished\_48 (B1), Phareon\_47 (B1), PhatCats2014\_48 (B1), PhatLouie\_47 (B1), Pherdinand\_48 (B1), PhrodoBaggins\_47 (B1), Phunky\_47 (B1), Piglet\_0046 (B1), PinheadLarry\_47 (B1), Pinkman\_46 (B1), Placalicious\_46 (B1), Plmatters\_47 (B1), Podrick\_47 (B1), Pops\_47 (B1), Potter\_46 (B1), Prickles\_47 (B1), ProfessorX\_47 (B1), QueenBeane\_47 (B1), Quisquilliae\_47 (B1), RedMaple\_47 (B1), Ricotta\_47 (B1), Riggan\_47 (B1), Rimu\_49 (B1), Robyn\_46 (B1), Roliet\_47 (B1), Roscoe\_48 (B1), Samaymay\_47 (B1), SassyCat97\_46 (B1), Schadenfreude\_46 (B1), Schueller\_47 (B1), Scoot17C\_48 (B1), Scrick\_47 (B1), Serendipity\_47 (B1), Sheila\_47 (B1), ShiVal\_47 (B1), Simielle\_46 (B1), Skippy\_47 (B1), Slatt\_47 (B1), Soile\_47 (B1), Solosis\_46 (B1), Sophia\_46 (B1), Soto\_47 (B1), Spartan300\_47 (B1), Squiggle\_47 (B1), Struggle\_46 (B1), Suffolk\_47 (B1), Surely\_47 (B1), Swish\_48 (B1), Telesworld\_46 (B1), Thora\_47 (B1), Timmi\_46 (B1), TomBombadil\_47 (B1), Tomlarah\_47 (B1), Toni\_46 (B1), Tooj\_47 (B1), True\_46 (B1), TyrionL\_46 (B1), UAch1\_47 (B1), Usavi\_47 (B1), Valjean\_47 (B1), Veritas\_46 (B1), Virapocalypse\_47 (B1), Virgeve\_46 (B1), Wallhey\_46 (B1), Weher20\_47 (B1), Windsor\_46 (B1), Yoshand\_48 (B1), YouGoGlencoco\_47 (B1), Zaider\_48 (B1), Zelda\_47 (B1), Zonia\_47 (B1),

Start 28:

- Found in 1 of 236 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 217
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Qyrzula\_43 (B2),

### Summary by clusters:

There are 9 clusters represented in this pham: CD, B5, B7, B1, B2, DA, DR, B9, DQ,

Info for manual annotations of cluster B1:

- Start number 6 was manually annotated 12 times for cluster B1.
- Start number 18 was manually annotated 1 time for cluster B1.
- Start number 23 was manually annotated 187 times for cluster B1.

Info for manual annotations of cluster B2:

- Start number 28 was manually annotated 1 time for cluster B2.

Info for manual annotations of cluster B5:

- Start number 18 was manually annotated 2 times for cluster B5.

Info for manual annotations of cluster B7:

- Start number 21 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B9:

- Start number 21 was manually annotated 2 times for cluster B9.

Info for manual annotations of cluster CD:

- Start number 19 was manually annotated 2 times for cluster CD.

Info for manual annotations of cluster DA:

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

Info for manual annotations of cluster DQ:

- Start number 20 was manually annotated 1 time for cluster DQ.

Info for manual annotations of cluster DR:

- Start number 20 was manually annotated 7 times for cluster DR.

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

Gene: ABU\_48 Start: 40410, Stop: 39850, Start Num: 23

Candidate Starts for ABU\_48:

(Start: 6 @40494 has 12 MA's), (7, 40488), (8, 40485), (Start: 23 @40410 has 187 MA's), (29, 40341), (30, 40338), (31, 40335), (39, 40281), (66, 40068),

Gene: AbsoluteMadLad\_46 Start: 40287, Stop: 39727, Start Num: 23

Candidate Starts for AbsoluteMadLad\_46:

(Start: 6 @40371 has 12 MA's), (7, 40365), (8, 40362), (Start: 23 @40287 has 187 MA's), (29, 40218), (30, 40215), (31, 40212), (39, 40158), (66, 39945), (81, 39738),

Gene: Adriana\_48 Start: 40408, Stop: 39848, Start Num: 23

Candidate Starts for Adriana\_48:

(Start: 6 @40492 has 12 MA's), (7, 40486), (8, 40483), (Start: 23 @40408 has 187 MA's), (29, 40339), (30, 40336), (31, 40333), (39, 40279), (66, 40066),

Gene: Aelin\_46 Start: 39839, Stop: 39279, Start Num: 23

Candidate Starts for Aelin\_46:

(Start: 6 @39923 has 12 MA's), (7, 39917), (8, 39914), (Start: 23 @39839 has 187 MA's), (29, 39770), (30, 39767), (31, 39764), (57, 39599), (66, 39497), (81, 39290),

Gene: AltPhacts\_47 Start: 40259, Stop: 39699, Start Num: 23

Candidate Starts for AltPhacts\_47:

(Start: 18 @40301 has 3 MA's), (Start: 23 @40259 has 187 MA's), (29, 40190), (30, 40187), (31, 40184), (66, 39917), (74, 39851), (81, 39710),

Gene: Altwerkus\_46 Start: 39966, Stop: 39406, Start Num: 23

Candidate Starts for Altwerkus\_46:

(Start: 6 @40050 has 12 MA's), (7, 40044), (8, 40041), (Start: 23 @39966 has 187 MA's), (29, 39897), (30, 39894), (31, 39891), (57, 39726), (66, 39624), (81, 39417),

Gene: AnarQue\_42 Start: 35868, Stop: 35293, Start Num: 20

Candidate Starts for AnarQue\_42:

(Start: 20 @35868 has 8 MA's), (24, 35829), (40, 35718), (46, 35679), (60, 35556), (62, 35544), (64, 35535), (67, 35493), (68, 35490), (70, 35478),

Gene: Anderson\_47 Start: 40265, Stop: 39705, Start Num: 23

Candidate Starts for Anderson\_47:

(Start: 6 @40349 has 12 MA's), (7, 40343), (8, 40340), (Start: 23 @40265 has 187 MA's), (29, 40196), (30, 40193), (31, 40190), (39, 40136), (66, 39923), (81, 39716),

Gene: Andre\_49 Start: 40402, Stop: 39842, Start Num: 23

Candidate Starts for Andre\_49:

(Start: 6 @40486 has 12 MA's), (7, 40480), (8, 40477), (Start: 23 @40402 has 187 MA's), (29, 40333), (30, 40330), (31, 40327), (66, 40060),

Gene: Antonia\_46 Start: 39839, Stop: 39279, Start Num: 23

Candidate Starts for Antonia\_46:

(Start: 6 @39923 has 12 MA's), (7, 39917), (8, 39914), (Start: 23 @39839 has 187 MA's), (29, 39770), (30, 39767), (31, 39764), (57, 39599), (66, 39497), (81, 39290),

Gene: Badfish\_48 Start: 40433, Stop: 39873, Start Num: 23

Candidate Starts for Badfish\_48:

(Start: 6 @40517 has 12 MA's), (7, 40511), (8, 40508), (Start: 23 @40433 has 187 MA's), (29, 40364), (30, 40361), (31, 40358), (39, 40304), (66, 40091),

Gene: Banjo\_46 Start: 40048, Stop: 39410, Start Num: 6

Candidate Starts for Banjo\_46:

(Start: 6 @40048 has 12 MA's), (7, 40042), (8, 40039), (Start: 23 @39964 has 187 MA's), (29, 39901), (30, 39898), (31, 39895), (39, 39841), (66, 39628), (74, 39562), (81, 39421),

Gene: BatteryCK\_46 Start: 39892, Stop: 39332, Start Num: 23

Candidate Starts for BatteryCK\_46:

(Start: 6 @39976 has 12 MA's), (7, 39970), (8, 39967), (Start: 23 @39892 has 187 MA's), (30, 39820), (31, 39817), (39, 39763), (57, 39652), (66, 39550), (81, 39343),

Gene: Beaglebox\_46 Start: 39985, Stop: 39431, Start Num: 23

Candidate Starts for Beaglebox\_46:

(Start: 6 @40069 has 12 MA's), (7, 40063), (8, 40060), (Start: 23 @39985 has 187 MA's), (29, 39922), (30, 39919), (31, 39916), (39, 39862), (66, 39649), (74, 39583), (81, 39442),

Gene: Bishoperium\_46 Start: 39979, Stop: 39419, Start Num: 23

Candidate Starts for Bishoperium\_46:

(Start: 6 @40063 has 12 MA's), (7, 40057), (8, 40054), (Start: 23 @39979 has 187 MA's), (29, 39910), (30, 39907), (31, 39904), (39, 39850), (66, 39637), (81, 39430),

Gene: BlackStallion\_48 Start: 40419, Stop: 39859, Start Num: 23

Candidate Starts for BlackStallion\_48:

(Start: 23 @40419 has 187 MA's), (29, 40350), (30, 40347), (31, 40344), (39, 40290), (66, 40077),

Gene: BlueHusk\_47 Start: 39784, Stop: 39224, Start Num: 23

Candidate Starts for BlueHusk\_47:

(Start: 18 @39826 has 3 MA's), (Start: 23 @39784 has 187 MA's), (29, 39715), (30, 39712), (31, 39709), (39, 39655), (66, 39442), (81, 39235),

Gene: Bluephacebaby\_46 Start: 39982, Stop: 39422, Start Num: 23

Candidate Starts for Bluephacebaby\_46:

(Start: 6 @40066 has 12 MA's), (7, 40060), (8, 40057), (Start: 23 @39982 has 187 MA's), (29, 39913), (30, 39910), (31, 39907), (57, 39742), (66, 39640), (81, 39433),

Gene: Boehler\_47 Start: 40288, Stop: 39728, Start Num: 23



Candidate Starts for Boehler\_47:

(Start: 6 @40372 has 12 MA's), (7, 40366), (8, 40363), (Start: 23 @40288 has 187 MA's), (29, 40219), (30, 40216), (31, 40213), (39, 40159), (66, 39946), (81, 39739),

Gene: Brilliant\_47 Start: 39981, Stop: 39427, Start Num: 23

Candidate Starts for Brilliant\_47:

(Start: 6 @40065 has 12 MA's), (7, 40059), (8, 40056), (Start: 23 @39981 has 187 MA's), (29, 39918), (30, 39915), (31, 39912), (39, 39858), (66, 39645), (74, 39579), (81, 39438),

Gene: Buckeye\_47 Start: 40302, Stop: 39742, Start Num: 23

Candidate Starts for Buckeye\_47:

(Start: 6 @40386 has 12 MA's), (7, 40380), (8, 40377), (Start: 23 @40302 has 187 MA's), (29, 40233), (30, 40230), (31, 40227), (39, 40173), (57, 40062), (66, 39960), (81, 39753),

Gene: Burr\_46 Start: 39976, Stop: 39416, Start Num: 23

Candidate Starts for Burr\_46:

(Start: 6 @40060 has 12 MA's), (7, 40054), (8, 40051), (Start: 23 @39976 has 187 MA's), (29, 39907), (30, 39904), (31, 39901), (39, 39847), (66, 39634), (81, 39427),

Gene: CaiB\_42 Start: 35854, Stop: 35279, Start Num: 20

Candidate Starts for CaiB\_42:

(Start: 20 @35854 has 8 MA's), (24, 35815), (40, 35704), (46, 35665), (60, 35542), (62, 35530), (64, 35521), (67, 35479), (68, 35476), (69, 35473), (70, 35464),

Gene: CamL\_47 Start: 40271, Stop: 39717, Start Num: 23

Candidate Starts for CamL\_47:

(Start: 6 @40355 has 12 MA's), (7, 40349), (8, 40346), (Start: 23 @40271 has 187 MA's), (29, 40208), (30, 40205), (31, 40202), (39, 40148), (66, 39935), (74, 39869), (81, 39728),

Gene: CampRoach\_48 Start: 40405, Stop: 39845, Start Num: 23

Candidate Starts for CampRoach\_48:

(Start: 6 @40489 has 12 MA's), (7, 40483), (8, 40480), (Start: 23 @40405 has 187 MA's), (29, 40336), (30, 40333), (31, 40330), (39, 40276), (66, 40063),

Gene: Cannibal\_47 Start: 40254, Stop: 39700, Start Num: 23

Candidate Starts for Cannibal\_47:

(Start: 6 @40338 has 12 MA's), (7, 40332), (8, 40329), (Start: 23 @40254 has 187 MA's), (29, 40191), (30, 40188), (31, 40185), (39, 40131), (66, 39918), (74, 39852), (81, 39711),

Gene: Carthage\_45 Start: 39189, Stop: 38629, Start Num: 23

Candidate Starts for Carthage\_45:

(Start: 6 @39273 has 12 MA's), (7, 39267), (8, 39264), (15, 39246), (Start: 23 @39189 has 187 MA's), (29, 39120), (30, 39117), (31, 39114), (39, 39060), (57, 38949), (66, 38847), (81, 38640),

Gene: Chaelin\_47 Start: 39977, Stop: 39417, Start Num: 23

Candidate Starts for Chaelin\_47:

(Start: 6 @40061 has 12 MA's), (7, 40055), (8, 40052), (Start: 23 @39977 has 187 MA's), (29, 39908), (30, 39905), (31, 39902), (39, 39848), (66, 39635), (81, 39428),

Gene: Charles1\_47 Start: 40262, Stop: 39702, Start Num: 23

Candidate Starts for Charles1\_47:

(Start: 6 @40346 has 12 MA's), (7, 40340), (8, 40337), (Start: 23 @40262 has 187 MA's), (29, 40193), (30, 40190), (31, 40187), (39, 40133), (57, 40022), (66, 39920), (81, 39713),

Gene: CharlieGBrown\_46 Start: 39852, Stop: 39292, Start Num: 23

Candidate Starts for CharlieGBrown\_46:

(Start: 6 @39936 has 12 MA's), (7, 39930), (8, 39927), (Start: 23 @39852 has 187 MA's), (29, 39783), (30, 39780), (31, 39777), (39, 39723), (66, 39510), (81, 39303),

Gene: Cher\_46 Start: 39999, Stop: 39439, Start Num: 23

Candidate Starts for Cher\_46:

(Start: 6 @40083 has 12 MA's), (7, 40077), (8, 40074), (Start: 23 @39999 has 187 MA's), (29, 39930), (30, 39927), (31, 39924), (57, 39759), (66, 39657), (74, 39591), (81, 39450),

Gene: Childish\_46 Start: 40002, Stop: 39442, Start Num: 23

Candidate Starts for Childish\_46:

(Start: 6 @40086 has 12 MA's), (7, 40080), (8, 40077), (Start: 23 @40002 has 187 MA's), (29, 39933), (30, 39930), (31, 39927), (39, 39873), (66, 39660), (81, 39453),

Gene: Chorkpop\_47 Start: 39998, Stop: 39438, Start Num: 23

Candidate Starts for Chorkpop\_47:

(Start: 6 @40082 has 12 MA's), (7, 40076), (8, 40073), (Start: 23 @39998 has 187 MA's), (29, 39929), (30, 39926), (31, 39923), (57, 39758), (66, 39656), (81, 39449),

Gene: Chunky\_47 Start: 40285, Stop: 39725, Start Num: 23

Candidate Starts for Chunky\_47:

(Start: 6 @40369 has 12 MA's), (7, 40363), (8, 40360), (Start: 23 @40285 has 187 MA's), (29, 40216), (30, 40213), (31, 40210), (39, 40156), (57, 40045), (66, 39943), (81, 39736),

Gene: CloverMinnie\_42 Start: 35794, Stop: 35219, Start Num: 20

Candidate Starts for CloverMinnie\_42:

(Start: 20 @35794 has 8 MA's), (24, 35755), (40, 35644), (46, 35605), (60, 35482), (62, 35470), (64, 35461), (67, 35419), (68, 35416), (69, 35413),

Gene: Cobra\_47 Start: 40283, Stop: 39723, Start Num: 23

Candidate Starts for Cobra\_47:

(Start: 6 @40367 has 12 MA's), (7, 40361), (8, 40358), (Start: 23 @40283 has 187 MA's), (29, 40214), (30, 40211), (31, 40208), (57, 40043), (66, 39941), (81, 39734),

Gene: Cornobble\_46 Start: 39840, Stop: 39280, Start Num: 23

Candidate Starts for Cornobble\_46:

(Start: 6 @39924 has 12 MA's), (7, 39918), (8, 39915), (Start: 23 @39840 has 187 MA's), (29, 39771), (30, 39768), (31, 39765), (39, 39711), (66, 39498), (81, 39291),

Gene: Cosmolli16\_46 Start: 39990, Stop: 39430, Start Num: 23

Candidate Starts for Cosmolli16\_46:

(Start: 6 @40074 has 12 MA's), (7, 40068), (8, 40065), (Start: 23 @39990 has 187 MA's), (29, 39921), (30, 39918), (31, 39915), (57, 39750), (66, 39648), (81, 39441),

Gene: Craff\_48 Start: 40418, Stop: 39858, Start Num: 23

Candidate Starts for Craff\_48:

(Start: 6 @40502 has 12 MA's), (7, 40496), (8, 40493), (Start: 23 @40418 has 187 MA's), (29, 40349), (30, 40346), (31, 40343), (39, 40289), (66, 40076),

Gene: Crownjwl\_47 Start: 40059, Stop: 39499, Start Num: 23

Candidate Starts for Crownjwl\_47:

(Start: 6 @40143 has 12 MA's), (7, 40137), (8, 40134), (Start: 23 @40059 has 187 MA's), (29, 39990), (30, 39987), (31, 39984), (39, 39930), (66, 39717), (81, 39510),

Gene: DaddyDaniels\_47 Start: 39971, Stop: 39411, Start Num: 23

Candidate Starts for DaddyDaniels\_47:

(Start: 6 @40055 has 12 MA's), (7, 40049), (8, 40046), (Start: 23 @39971 has 187 MA's), (29, 39902), (30, 39899), (31, 39896), (39, 39842), (66, 39629), (81, 39422),

Gene: Daffy\_47 Start: 39996, Stop: 39442, Start Num: 23

Candidate Starts for Daffy\_47:

(Start: 6 @40080 has 12 MA's), (7, 40074), (8, 40071), (Start: 23 @39996 has 187 MA's), (29, 39933), (30, 39930), (31, 39927), (39, 39873), (66, 39660), (74, 39594), (81, 39453),

Gene: Daka\_48 Start: 40275, Stop: 39715, Start Num: 23

Candidate Starts for Daka\_48:

(Start: 6 @40359 has 12 MA's), (7, 40353), (8, 40350), (Start: 23 @40275 has 187 MA's), (29, 40206), (30, 40203), (31, 40200), (39, 40146), (66, 39933), (81, 39726),

Gene: DalanDe\_65 Start: 59026, Stop: 59634, Start Num: 20

Candidate Starts for DalanDe\_65:

(9, 58969), (Start: 20 @59026 has 8 MA's), (44, 59206), (47, 59233), (50, 59251), (54, 59287), (58, 59299), (59, 59308), (65, 59386), (78, 59554),

Gene: Dati\_47 Start: 39999, Stop: 39439, Start Num: 23

Candidate Starts for Dati\_47:

(Start: 6 @40083 has 12 MA's), (7, 40077), (8, 40074), (Start: 23 @39999 has 187 MA's), (29, 39930), (30, 39927), (31, 39924), (39, 39870), (57, 39759), (66, 39657), (81, 39450),

Gene: DelRivs\_46 Start: 40003, Stop: 39443, Start Num: 23

Candidate Starts for DelRivs\_46:

(Start: 6 @40087 has 12 MA's), (7, 40081), (8, 40078), (Start: 23 @40003 has 187 MA's), (29, 39934), (30, 39931), (31, 39928), (57, 39763), (66, 39661), (81, 39454),

Gene: Derpp\_46 Start: 39841, Stop: 39281, Start Num: 23

Candidate Starts for Derpp\_46:

(Start: 6 @39925 has 12 MA's), (7, 39919), (8, 39916), (Start: 23 @39841 has 187 MA's), (29, 39772), (30, 39769), (31, 39766), (57, 39601), (66, 39499), (81, 39292),

Gene: Dice\_49 Start: 39967, Stop: 39413, Start Num: 23

Candidate Starts for Dice\_49:

(Start: 6 @40051 has 12 MA's), (7, 40045), (8, 40042), (Start: 23 @39967 has 187 MA's), (29, 39904), (30, 39901), (31, 39898), (39, 39844), (66, 39631), (74, 39565), (81, 39424),

Gene: Dingo\_47 Start: 40265, Stop: 39705, Start Num: 23

Candidate Starts for Dingo\_47:

(Start: 18 @40307 has 3 MA's), (Start: 23 @40265 has 187 MA's), (29, 40196), (30, 40193), (31, 40190), (39, 40136), (66, 39923), (81, 39716),

Gene: Dione\_46 Start: 39975, Stop: 39421, Start Num: 23

Candidate Starts for Dione\_46:

(Start: 6 @40059 has 12 MA's), (7, 40053), (8, 40050), (Start: 23 @39975 has 187 MA's), (29, 39912), (30, 39909), (31, 39906), (39, 39852), (66, 39639), (74, 39573), (81, 39432),

Gene: DirtJuice\_47 Start: 40265, Stop: 39705, Start Num: 23

Candidate Starts for DirtJuice\_47:

(Start: 6 @40349 has 12 MA's), (7, 40343), (8, 40340), (Start: 23 @40265 has 187 MA's), (29, 40196), (30, 40193), (31, 40190), (39, 40136), (57, 40025), (66, 39923), (81, 39716),

Gene: Doddsville\_47 Start: 39995, Stop: 39435, Start Num: 23

Candidate Starts for Doddsville\_47:

(Start: 6 @40079 has 12 MA's), (7, 40073), (8, 40070), (Start: 23 @39995 has 187 MA's), (29, 39926), (30, 39923), (31, 39920), (39, 39866), (66, 39653), (81, 39446),

Gene: DonSanchon\_46 Start: 39978, Stop: 39418, Start Num: 23

Candidate Starts for DonSanchon\_46:

(Start: 6 @40062 has 12 MA's), (7, 40056), (8, 40053), (Start: 23 @39978 has 187 MA's), (29, 39909), (30, 39906), (31, 39903), (57, 39738), (66, 39636), (81, 39429),

Gene: DuchessDung\_46 Start: 39267, Stop: 38707, Start Num: 23

Candidate Starts for DuchessDung\_46:

(Start: 6 @39351 has 12 MA's), (7, 39345), (8, 39342), (Start: 23 @39267 has 187 MA's), (29, 39198), (30, 39195), (31, 39192), (66, 38925),

Gene: Duggie\_46 Start: 39997, Stop: 39437, Start Num: 23

Candidate Starts for Duggie\_46:

(Start: 6 @40081 has 12 MA's), (7, 40075), (8, 40072), (Start: 23 @39997 has 187 MA's), (29, 39928), (30, 39925), (31, 39922), (39, 39868), (66, 39655), (81, 39448),

Gene: Durga\_48 Start: 40433, Stop: 39873, Start Num: 23

Candidate Starts for Durga\_48:

(Start: 6 @40517 has 12 MA's), (7, 40511), (8, 40508), (Start: 23 @40433 has 187 MA's), (29, 40364), (30, 40361), (31, 40358), (39, 40304), (66, 40091),

Gene: Emiris\_48 Start: 40401, Stop: 39841, Start Num: 23

Candidate Starts for Emiris\_48:

(Start: 6 @40485 has 12 MA's), (7, 40479), (8, 40476), (Start: 23 @40401 has 187 MA's), (29, 40332), (30, 40329), (31, 40326), (39, 40272), (66, 40059),

Gene: EmpTee\_47 Start: 40281, Stop: 39721, Start Num: 23

Candidate Starts for EmpTee\_47:

(Start: 6 @40365 has 12 MA's), (7, 40359), (8, 40356), (Start: 23 @40281 has 187 MA's), (29, 40212), (30, 40209), (31, 40206), (39, 40152), (66, 39939), (81, 39732),

Gene: Eremos\_47 Start: 40274, Stop: 39714, Start Num: 23

Candidate Starts for Eremos\_47:

(Start: 6 @40358 has 12 MA's), (7, 40352), (8, 40349), (Start: 23 @40274 has 187 MA's), (29, 40205), (30, 40202), (31, 40199), (39, 40145), (66, 39932), (81, 39725),

Gene: Etaye\_47 Start: 40268, Stop: 39708, Start Num: 23

Candidate Starts for Etaye\_47:

(Start: 6 @40352 has 12 MA's), (7, 40346), (8, 40343), (Start: 23 @40268 has 187 MA's), (29, 40199), (30, 40196), (31, 40193), (39, 40139), (57, 40028), (66, 39926), (81, 39719),

Gene: Eugenia\_47 Start: 40278, Stop: 39724, Start Num: 23

Candidate Starts for Eugenia\_47:

(Start: 6 @40362 has 12 MA's), (7, 40356), (8, 40353), (Start: 23 @40278 has 187 MA's), (29, 40215), (30, 40212), (31, 40209), (39, 40155), (66, 39942), (74, 39876), (81, 39735),

Gene: Evaa\_40 Start: 34989, Stop: 34357, Start Num: 20

Candidate Starts for Evaa\_40:

(12, 35028), (13, 35025), (Start: 20 @34989 has 8 MA's), (27, 34905), (38, 34824), (43, 34788), (49, 34737), (78, 34434),

Gene: Fozzie\_46 Start: 40303, Stop: 39743, Start Num: 23

Candidate Starts for Fozzie\_46:

(Start: 6 @40387 has 12 MA's), (7, 40381), (8, 40378), (Start: 23 @40303 has 187 MA's), (29, 40234), (30, 40231), (31, 40228), (39, 40174), (66, 39961), (81, 39754),

Gene: Frankicide\_47 Start: 40293, Stop: 39733, Start Num: 23

Candidate Starts for Frankicide\_47:

(Start: 6 @40377 has 12 MA's), (7, 40371), (8, 40368), (Start: 23 @40293 has 187 MA's), (29, 40224), (30, 40221), (31, 40218), (39, 40164), (57, 40053), (66, 39951), (81, 39744),

Gene: Freya\_46 Start: 39966, Stop: 39412, Start Num: 23

Candidate Starts for Freya\_46:

(Start: 6 @40050 has 12 MA's), (7, 40044), (8, 40041), (Start: 23 @39966 has 187 MA's), (29, 39903), (30, 39900), (31, 39897), (39, 39843), (66, 39630), (74, 39564), (81, 39423),

Gene: FriarPreacher\_46 Start: 40305, Stop: 39745, Start Num: 23

Candidate Starts for FriarPreacher\_46:

(Start: 6 @40389 has 12 MA's), (7, 40383), (8, 40380), (Start: 23 @40305 has 187 MA's), (29, 40236), (30, 40233), (31, 40230), (57, 40065), (66, 39963), (81, 39756),

Gene: Fringe\_48 Start: 40402, Stop: 39842, Start Num: 23

Candidate Starts for Fringe\_48:

(Start: 6 @40486 has 12 MA's), (7, 40480), (8, 40477), (Start: 23 @40402 has 187 MA's), (29, 40333), (30, 40330), (31, 40327), (39, 40273), (66, 40060),

Gene: FugateOSU\_46 Start: 39980, Stop: 39420, Start Num: 23

Candidate Starts for FugateOSU\_46:

(Start: 6 @40064 has 12 MA's), (7, 40058), (8, 40055), (Start: 23 @39980 has 187 MA's), (29, 39911), (30, 39908), (31, 39905), (39, 39851), (51, 39770), (66, 39638), (81, 39431),

Gene: Gareth\_46 Start: 39974, Stop: 39420, Start Num: 23

Candidate Starts for Gareth\_46:

(Start: 6 @40058 has 12 MA's), (7, 40052), (8, 40049), (Start: 23 @39974 has 187 MA's), (29, 39911), (30, 39908), (31, 39905), (39, 39851), (66, 39638), (74, 39572), (81, 39431),

Gene: GeneCoco\_47 Start: 40289, Stop: 39729, Start Num: 23

Candidate Starts for GeneCoco\_47:

(Start: 6 @40373 has 12 MA's), (7, 40367), (8, 40364), (Start: 23 @40289 has 187 MA's), (29, 40220), (30, 40217), (31, 40214), (57, 40049), (66, 39947), (81, 39740),

Gene: Ghobes\_19 Start: 17373, Stop: 16780, Start Num: 22

Candidate Starts for Ghobes\_19:

(Start: 22 @17373 has 1 MA's), (26, 17325), (36, 17253), (63, 17028), (73, 16929), (75, 16917),

Gene: Gophee\_47 Start: 40272, Stop: 39712, Start Num: 23

Candidate Starts for Gophee\_47:

(Start: 6 @40356 has 12 MA's), (7, 40350), (8, 40347), (Start: 23 @40272 has 187 MA's), (29, 40203), (30, 40200), (31, 40197), (39, 40143), (66, 39930), (81, 39723),

Gene: Grand2040\_46 Start: 39992, Stop: 39438, Start Num: 23

Candidate Starts for Grand2040\_46:

(Start: 6 @40076 has 12 MA's), (7, 40070), (8, 40067), (Start: 23 @39992 has 187 MA's), (29, 39929), (30, 39926), (31, 39923), (39, 39869), (66, 39656), (74, 39590), (81, 39449),

Gene: Gwilliam\_48 Start: 40278, Stop: 39718, Start Num: 23

Candidate Starts for Gwilliam\_48:

(Start: 6 @40362 has 12 MA's), (7, 40356), (8, 40353), (Start: 23 @40278 has 187 MA's), (29, 40209), (30, 40206), (31, 40203), (39, 40149), (66, 39936), (81, 39729),

Gene: HSavage\_47 Start: 40284, Stop: 39724, Start Num: 23

Candidate Starts for HSavage\_47:

(Start: 6 @40368 has 12 MA's), (7, 40362), (8, 40359), (Start: 23 @40284 has 187 MA's), (29, 40215), (30, 40212), (31, 40209), (39, 40155), (57, 40044), (66, 39942), (81, 39735),

Gene: Haimas\_47 Start: 40278, Stop: 39718, Start Num: 23

Candidate Starts for Haimas\_47:

(Start: 6 @40362 has 12 MA's), (7, 40356), (8, 40353), (Start: 23 @40278 has 187 MA's), (29, 40209), (30, 40206), (31, 40203), (39, 40149), (66, 39936), (81, 39729),

Gene: Haleema\_46 Start: 39992, Stop: 39438, Start Num: 23

Candidate Starts for Haleema\_46:

(Start: 6 @40076 has 12 MA's), (7, 40070), (8, 40067), (Start: 23 @39992 has 187 MA's), (29, 39929), (30, 39926), (31, 39923), (39, 39869), (66, 39656), (74, 39590), (81, 39449),

Gene: Hamish\_47 Start: 40270, Stop: 39710, Start Num: 23

Candidate Starts for Hamish\_47:

(Start: 6 @40354 has 12 MA's), (7, 40348), (8, 40345), (Start: 23 @40270 has 187 MA's), (29, 40201), (30, 40198), (31, 40195), (39, 40141), (66, 39928), (81, 39721),

Gene: Harvey\_47 Start: 40380, Stop: 39736, Start Num: 6

Candidate Starts for Harvey\_47:

(Start: 6 @40380 has 12 MA's), (7, 40374), (8, 40371), (Start: 23 @40296 has 187 MA's), (29, 40227), (30, 40224), (31, 40221), (57, 40056), (66, 39954), (81, 39747),

Gene: Held\_47 Start: 39982, Stop: 39422, Start Num: 23

Candidate Starts for Held\_47:

(Start: 6 @40066 has 12 MA's), (7, 40060), (8, 40057), (Start: 23 @39982 has 187 MA's), (29, 39913), (30, 39910), (31, 39907), (57, 39742), (66, 39640), (81, 39433),

Gene: HenryJackson\_46 Start: 39992, Stop: 39438, Start Num: 23

Candidate Starts for HenryJackson\_46:

(Start: 6 @40076 has 12 MA's), (7, 40070), (8, 40067), (Start: 23 @39992 has 187 MA's), (29, 39929), (30, 39926), (31, 39923), (39, 39869), (66, 39656), (74, 39590), (81, 39449),

Gene: Hetaeria\_47 Start: 40294, Stop: 39734, Start Num: 23

Candidate Starts for Hetaeria\_47:

(Start: 6 @40378 has 12 MA's), (7, 40372), (8, 40369), (Start: 23 @40294 has 187 MA's), (29, 40225), (30, 40222), (31, 40219), (57, 40054), (66, 39952), (81, 39745),

Gene: HighStump\_47 Start: 40119, Stop: 39559, Start Num: 23

Candidate Starts for HighStump\_47:

(Start: 6 @40203 has 12 MA's), (7, 40197), (8, 40194), (Start: 23 @40119 has 187 MA's), (29, 40050), (30, 40047), (31, 40044), (39, 39990), (66, 39777),

Gene: Hocus\_46 Start: 39981, Stop: 39427, Start Num: 23

Candidate Starts for Hocus\_46:

(Start: 6 @40065 has 12 MA's), (7, 40059), (8, 40056), (Start: 23 @39981 has 187 MA's), (29, 39918), (30, 39915), (31, 39912), (39, 39858), (66, 39645), (74, 39579), (81, 39438),

Gene: Horchata\_47 Start: 40272, Stop: 39712, Start Num: 23

Candidate Starts for Horchata\_47:

(Start: 6 @40356 has 12 MA's), (7, 40350), (8, 40347), (Start: 23 @40272 has 187 MA's), (29, 40203), (30, 40200), (31, 40197), (39, 40143), (66, 39930), (81, 39723),

Gene: Inchworm\_48 Start: 40405, Stop: 39845, Start Num: 23

Candidate Starts for Inchworm\_48:

(Start: 6 @40489 has 12 MA's), (7, 40483), (8, 40480), (Start: 23 @40405 has 187 MA's), (29, 40336), (30, 40333), (31, 40330), (39, 40276), (66, 40063),

Gene: Iridoclysis\_47 Start: 40264, Stop: 39704, Start Num: 23

Candidate Starts for Iridoclysis\_47:

(Start: 6 @40348 has 12 MA's), (7, 40342), (8, 40339), (Start: 23 @40264 has 187 MA's), (29, 40195), (30, 40192), (31, 40189), (39, 40135), (66, 39922), (81, 39715),

Gene: JDog\_47 Start: 40085, Stop: 39441, Start Num: 6

Candidate Starts for JDog\_47:

(Start: 6 @40085 has 12 MA's), (7, 40079), (8, 40076), (Start: 23 @40001 has 187 MA's), (29, 39932), (30, 39929), (31, 39926), (39, 39872), (57, 39761), (66, 39659), (81, 39452),

Gene: JakeO\_46 Start: 40000, Stop: 39440, Start Num: 23

Candidate Starts for JakeO\_46:

(Start: 6 @40084 has 12 MA's), (7, 40078), (8, 40075), (Start: 23 @40000 has 187 MA's), (29, 39931), (30, 39928), (31, 39925), (39, 39871), (66, 39658), (81, 39451),

Gene: JangoPhett\_47 Start: 40275, Stop: 39715, Start Num: 23

Candidate Starts for JangoPhett\_47:

(Start: 6 @40359 has 12 MA's), (7, 40353), (8, 40350), (Start: 23 @40275 has 187 MA's), (29, 40206), (30, 40203), (31, 40200), (57, 40035), (66, 39933), (81, 39726),

Gene: Jillium\_46 Start: 39994, Stop: 39434, Start Num: 23

Candidate Starts for Jillium\_46:

(Start: 6 @40078 has 12 MA's), (7, 40072), (8, 40069), (Start: 23 @39994 has 187 MA's), (29, 39925), (30, 39922), (31, 39919), (57, 39754), (66, 39652), (81, 39445),

Gene: Jiminy\_46 Start: 39835, Stop: 39275, Start Num: 23

Candidate Starts for Jiminy\_46:

(Start: 6 @39919 has 12 MA's), (7, 39913), (8, 39910), (Start: 23 @39835 has 187 MA's), (29, 39766), (30, 39763), (31, 39760), (39, 39706), (66, 39493), (81, 39286),

Gene: Jiraiya\_48 Start: 39988, Stop: 39428, Start Num: 23

Candidate Starts for Jiraiya\_48:

(Start: 6 @40072 has 12 MA's), (7, 40066), (8, 40063), (Start: 23 @39988 has 187 MA's), (29, 39919), (30, 39916), (31, 39913), (39, 39859), (66, 39646), (81, 39439),

Gene: KLucky39\_47 Start: 40279, Stop: 39719, Start Num: 23

Candidate Starts for KLucky39\_47:

(Start: 6 @40363 has 12 MA's), (7, 40357), (8, 40354), (Start: 23 @40279 has 187 MA's), (29, 40210), (30, 40207), (31, 40204), (39, 40150), (57, 40039), (66, 39937), (81, 39730),

Gene: Kahve\_46 Start: 39989, Stop: 39435, Start Num: 23

Candidate Starts for Kahve\_46:

(Start: 6 @40073 has 12 MA's), (7, 40067), (8, 40064), (Start: 23 @39989 has 187 MA's), (29, 39926), (30, 39923), (31, 39920), (39, 39866), (66, 39653), (74, 39587), (81, 39446),

Gene: Kailash\_47 Start: 40336, Stop: 39776, Start Num: 23

Candidate Starts for Kailash\_47:

(Start: 6 @40420 has 12 MA's), (7, 40414), (8, 40411), (Start: 23 @40336 has 187 MA's), (30, 40264), (31, 40261), (39, 40207), (57, 40096), (66, 39994), (81, 39787),

Gene: Katniss\_48 Start: 40432, Stop: 39872, Start Num: 23

Candidate Starts for Katniss\_48:

(Start: 6 @40516 has 12 MA's), (7, 40510), (8, 40507), (Start: 23 @40432 has 187 MA's), (29, 40363), (30, 40360), (31, 40357), (39, 40303), (66, 40090),

Gene: Keitherie\_47 Start: 40335, Stop: 39775, Start Num: 23

Candidate Starts for Keitherie\_47:

(Start: 6 @40419 has 12 MA's), (7, 40413), (8, 40410), (Start: 23 @40335 has 187 MA's), (29, 40266), (30, 40263), (31, 40260), (39, 40206), (66, 39993), (81, 39786),

Gene: Kimbrough\_47 Start: 39996, Stop: 39436, Start Num: 23

Candidate Starts for Kimbrough\_47:

(Start: 6 @40080 has 12 MA's), (7, 40074), (8, 40071), (Start: 23 @39996 has 187 MA's), (29, 39927), (30, 39924), (31, 39921), (39, 39867), (66, 39654), (81, 39447),

Gene: KingTut\_38 Start: 35659, Stop: 35099, Start Num: 23

Candidate Starts for KingTut\_38:

(Start: 6 @35743 has 12 MA's), (7, 35737), (8, 35734), (Start: 23 @35659 has 187 MA's), (29, 35590), (30, 35587), (31, 35584), (39, 35530), (66, 35317), (81, 35110),

Gene: KingVeVeVe\_47 Start: 40266, Stop: 39706, Start Num: 23

Candidate Starts for KingVeVeVe\_47:

(Start: 18 @40308 has 3 MA's), (Start: 23 @40266 has 187 MA's), (29, 40197), (30, 40194), (31, 40191), (39, 40137), (66, 39924), (81, 39717),

Gene: Kloppinator\_47 Start: 40299, Stop: 39739, Start Num: 23

Candidate Starts for Kloppinator\_47:

(5, 40392), (7, 40377), (8, 40374), (Start: 23 @40299 has 187 MA's), (29, 40230), (30, 40227), (31, 40224), (57, 40059), (66, 39957), (81, 39750),

Gene: Kwadwo\_46 Start: 39971, Stop: 39417, Start Num: 23

Candidate Starts for Kwadwo\_46:

(Start: 6 @40055 has 12 MA's), (7, 40049), (8, 40046), (Start: 23 @39971 has 187 MA's), (29, 39908), (30, 39905), (31, 39902), (39, 39848), (66, 39635), (74, 39569), (81, 39428),



Gene: Kwksand96\_46 Start: 39846, Stop: 39286, Start Num: 23

Candidate Starts for Kwksand96\_46:

(Start: 6 @39930 has 12 MA's), (7, 39924), (8, 39921), (Start: 23 @39846 has 187 MA's), (29, 39777), (30, 39774), (31, 39771), (57, 39606), (66, 39504), (81, 39297),

Gene: Labeouficaum\_46 Start: 39841, Stop: 39281, Start Num: 23

Candidate Starts for Labeouficaum\_46:

(Start: 6 @39925 has 12 MA's), (7, 39919), (8, 39916), (Start: 23 @39841 has 187 MA's), (29, 39772), (30, 39769), (31, 39766), (57, 39601), (66, 39499), (81, 39292),

Gene: LasagnaCat\_48 Start: 40417, Stop: 39857, Start Num: 23

Candidate Starts for LasagnaCat\_48:

(Start: 6 @40501 has 12 MA's), (7, 40495), (8, 40492), (Start: 23 @40417 has 187 MA's), (29, 40348), (30, 40345), (31, 40342), (39, 40288), (66, 40075),

Gene: Lasso\_47 Start: 40246, Stop: 39692, Start Num: 23

Candidate Starts for Lasso\_47:

(Start: 6 @40330 has 12 MA's), (7, 40324), (8, 40321), (Start: 23 @40246 has 187 MA's), (29, 40183), (30, 40180), (31, 40177), (39, 40123), (66, 39910), (74, 39844), (81, 39703),

Gene: Lego3393\_46 Start: 40426, Stop: 39866, Start Num: 23

Candidate Starts for Lego3393\_46:

(Start: 6 @40510 has 12 MA's), (7, 40504), (8, 40501), (Start: 23 @40426 has 187 MA's), (29, 40357), (30, 40354), (31, 40351), (39, 40297), (66, 40084),

Gene: Legolas\_47 Start: 40016, Stop: 39462, Start Num: 23

Candidate Starts for Legolas\_47:

(Start: 6 @40100 has 12 MA's), (7, 40094), (8, 40091), (Start: 23 @40016 has 187 MA's), (29, 39953), (30, 39950), (31, 39947), (39, 39893), (66, 39680), (74, 39614), (81, 39473),

Gene: LeiMonet\_48 Start: 39978, Stop: 39424, Start Num: 23

Candidate Starts for LeiMonet\_48:

(Start: 6 @40062 has 12 MA's), (7, 40056), (8, 40053), (Start: 23 @39978 has 187 MA's), (29, 39915), (30, 39912), (31, 39909), (39, 39855), (66, 39642), (81, 39435),

Gene: LemonSlice\_47 Start: 39983, Stop: 39423, Start Num: 23

Candidate Starts for LemonSlice\_47:

(Start: 6 @40067 has 12 MA's), (7, 40061), (8, 40058), (Start: 23 @39983 has 187 MA's), (29, 39914), (30, 39911), (31, 39908), (57, 39743), (66, 39641), (81, 39434),

Gene: Longacauda\_46 Start: 39979, Stop: 39425, Start Num: 23

Candidate Starts for Longacauda\_46:

(Start: 6 @40063 has 12 MA's), (7, 40057), (8, 40054), (Start: 23 @39979 has 187 MA's), (29, 39916), (30, 39913), (31, 39910), (39, 39856), (66, 39643), (74, 39577), (81, 39436),

Gene: LostAndPhound\_46 Start: 39986, Stop: 39426, Start Num: 23

Candidate Starts for LostAndPhound\_46:

(Start: 6 @40070 has 12 MA's), (7, 40064), (8, 40061), (Start: 23 @39986 has 187 MA's), (29, 39917), (30, 39914), (31, 39911), (66, 39644), (74, 39578), (81, 39437),

Gene: LuckyMarjie\_46 Start: 39986, Stop: 39432, Start Num: 23

Candidate Starts for LuckyMarjie\_46:

(Start: 6 @40070 has 12 MA's), (7, 40064), (8, 40061), (Start: 23 @39986 has 187 MA's), (29, 39923), (30, 39920), (31, 39917), (39, 39863), (66, 39650), (74, 39584), (81, 39443),

Gene: Lulumae\_46 Start: 40055, Stop: 39417, Start Num: 6

Candidate Starts for Lulumae\_46:

(Start: 6 @40055 has 12 MA's), (7, 40049), (8, 40046), (Start: 23 @39971 has 187 MA's), (29, 39908), (30, 39905), (31, 39902), (39, 39848), (66, 39635), (74, 39569), (81, 39428),

Gene: Lulwa\_47 Start: 40264, Stop: 39704, Start Num: 23

Candidate Starts for Lulwa\_47:

(Start: 6 @40348 has 12 MA's), (7, 40342), (8, 40339), (Start: 23 @40264 has 187 MA's), (29, 40195), (30, 40192), (31, 40189), (39, 40135), (57, 40024), (66, 39922), (81, 39715),

Gene: Lumine\_46 Start: 39967, Stop: 39413, Start Num: 23

Candidate Starts for Lumine\_46:

(Start: 6 @40051 has 12 MA's), (7, 40045), (8, 40042), (Start: 23 @39967 has 187 MA's), (29, 39904), (30, 39901), (31, 39898), (39, 39844), (66, 39631), (74, 39565), (81, 39424),

Gene: MRabcd\_46 Start: 39977, Stop: 39417, Start Num: 23

Candidate Starts for MRabcd\_46:

(Start: 6 @40061 has 12 MA's), (7, 40055), (8, 40052), (Start: 23 @39977 has 187 MA's), (29, 39908), (30, 39905), (31, 39902), (39, 39848), (66, 39635), (81, 39428),

Gene: Mag7\_46 Start: 39886, Stop: 39326, Start Num: 23

Candidate Starts for Mag7\_46:

(Start: 6 @39970 has 12 MA's), (7, 39964), (8, 39961), (Start: 23 @39886 has 187 MA's), (30, 39814), (31, 39811), (39, 39757), (57, 39646), (66, 39544), (81, 39337),

Gene: Magic8\_47 Start: 40321, Stop: 39761, Start Num: 23

Candidate Starts for Magic8\_47:

(Start: 6 @40405 has 12 MA's), (7, 40399), (8, 40396), (Start: 23 @40321 has 187 MA's), (30, 40249), (31, 40246), (39, 40192), (57, 40081), (66, 39979), (81, 39772),

Gene: MakoManhole\_42 Start: 35872, Stop: 35297, Start Num: 20

Candidate Starts for MakoManhole\_42:

(Start: 20 @35872 has 8 MA's), (24, 35833), (40, 35722), (46, 35683), (60, 35560), (62, 35548), (64, 35539), (67, 35497), (68, 35494), (69, 35491), (70, 35482),

Gene: Mana\_46 Start: 39986, Stop: 39432, Start Num: 23

Candidate Starts for Mana\_46:

(Start: 6 @40070 has 12 MA's), (8, 40061), (Start: 23 @39986 has 187 MA's), (29, 39923), (30, 39920), (31, 39917), (39, 39863), (66, 39650), (74, 39584), (81, 39443),

Gene: Maru\_46 Start: 39929, Stop: 39375, Start Num: 23

Candidate Starts for Maru\_46:

(Start: 6 @40013 has 12 MA's), (7, 40007), (8, 40004), (Start: 23 @39929 has 187 MA's), (29, 39866), (30, 39863), (31, 39860), (39, 39806), (66, 39593), (74, 39527), (81, 39386),

Gene: Mecca\_46 Start: 39984, Stop: 39424, Start Num: 23

Candidate Starts for Mecca\_46:

(Start: 6 @40068 has 12 MA's), (7, 40062), (8, 40059), (Start: 23 @39984 has 187 MA's), (29, 39915), (30, 39912), (31, 39909), (39, 39855), (66, 39642), (81, 39435),

Gene: Megamind20\_47 Start: 40006, Stop: 39446, Start Num: 23  
Candidate Starts for Megamind20\_47:  
(Start: 6 @40090 has 12 MA's), (7, 40084), (8, 40081), (Start: 23 @40006 has 187 MA's), (29, 39937), (30, 39934), (31, 39931), (39, 39877), (66, 39664), (81, 39457),

Gene: Melc17\_47 Start: 40360, Stop: 39716, Start Num: 6  
Candidate Starts for Melc17\_47:  
(Start: 6 @40360 has 12 MA's), (7, 40354), (8, 40351), (Start: 23 @40276 has 187 MA's), (29, 40207), (30, 40204), (31, 40201), (39, 40147), (57, 40036), (66, 39934), (81, 39727),

Gene: MelsMeow\_47 Start: 40017, Stop: 39457, Start Num: 23  
Candidate Starts for MelsMeow\_47:  
(Start: 6 @40101 has 12 MA's), (7, 40095), (8, 40092), (Start: 23 @40017 has 187 MA's), (29, 39948), (30, 39945), (31, 39942), (39, 39888), (66, 39675),

Gene: Mesh1\_47 Start: 40293, Stop: 39733, Start Num: 23  
Candidate Starts for Mesh1\_47:  
(Start: 6 @40377 has 12 MA's), (7, 40371), (8, 40368), (Start: 23 @40293 has 187 MA's), (29, 40224), (30, 40221), (31, 40218), (57, 40053), (66, 39951), (81, 39744),

Gene: MichaelPhcott\_46 Start: 39883, Stop: 39323, Start Num: 23  
Candidate Starts for MichaelPhcott\_46:  
(Start: 6 @39967 has 12 MA's), (7, 39961), (8, 39958), (Start: 23 @39883 has 187 MA's), (30, 39811), (31, 39808), (39, 39754), (57, 39643), (66, 39541), (81, 39334),

Gene: Mikota\_47 Start: 40263, Stop: 39703, Start Num: 23  
Candidate Starts for Mikota\_47:  
(Start: 18 @40305 has 3 MA's), (Start: 23 @40263 has 187 MA's), (29, 40194), (30, 40191), (31, 40188), (39, 40134), (66, 39921), (81, 39714),

Gene: MiniBoss\_47 Start: 40269, Stop: 39709, Start Num: 23  
Candidate Starts for MiniBoss\_47:  
(Start: 18 @40311 has 3 MA's), (Start: 23 @40269 has 187 MA's), (29, 40200), (30, 40197), (31, 40194), (66, 39927), (74, 39861), (81, 39720),

Gene: MitKao\_47 Start: 39984, Stop: 39424, Start Num: 23  
Candidate Starts for MitKao\_47:  
(Start: 6 @40068 has 12 MA's), (7, 40062), (8, 40059), (Start: 23 @39984 has 187 MA's), (29, 39915), (30, 39912), (31, 39909), (57, 39744), (66, 39642), (81, 39435),

Gene: Morgushi\_47 Start: 39985, Stop: 39425, Start Num: 23  
Candidate Starts for Morgushi\_47:  
(Start: 6 @40069 has 12 MA's), (7, 40063), (8, 40060), (Start: 23 @39985 has 187 MA's), (29, 39916), (30, 39913), (31, 39910), (39, 39856), (66, 39643), (74, 39577), (81, 39436),

Gene: Morty\_48 Start: 40423, Stop: 39863, Start Num: 23  
Candidate Starts for Morty\_48:  
(Start: 6 @40507 has 12 MA's), (7, 40501), (8, 40498), (Start: 23 @40423 has 187 MA's), (29, 40354), (30, 40351), (31, 40348), (39, 40294), (66, 40081),

Gene: MossRose\_42 Start: 35851, Stop: 35276, Start Num: 20  
Candidate Starts for MossRose\_42:

(Start: 20 @35851 has 8 MA's), (24, 35812), (40, 35701), (46, 35662), (60, 35539), (62, 35527), (64, 35518), (67, 35476), (68, 35473), (69, 35470), (70, 35461),

Gene: MrPhizzler\_46 Start: 39987, Stop: 39433, Start Num: 23

Candidate Starts for MrPhizzler\_46:

(Start: 6 @40071 has 12 MA's), (7, 40065), (8, 40062), (Start: 23 @39987 has 187 MA's), (29, 39924), (30, 39921), (31, 39918), (39, 39864), (66, 39651), (74, 39585), (81, 39444),

Gene: Mulan\_47 Start: 40140, Stop: 39580, Start Num: 23

Candidate Starts for Mulan\_47:

(Start: 6 @40224 has 12 MA's), (7, 40218), (8, 40215), (Start: 23 @40140 has 187 MA's), (29, 40071), (30, 40068), (31, 40065), (39, 40011), (66, 39798),

Gene: Murdoc\_47 Start: 40355, Stop: 39717, Start Num: 6

Candidate Starts for Murdoc\_47:

(Start: 6 @40355 has 12 MA's), (7, 40349), (8, 40346), (Start: 23 @40271 has 187 MA's), (29, 40208), (30, 40205), (31, 40202), (39, 40148), (66, 39935), (74, 39869), (81, 39728),

Gene: Mutante\_46 Start: 39990, Stop: 39430, Start Num: 23

Candidate Starts for Mutante\_46:

(Start: 6 @40074 has 12 MA's), (7, 40068), (8, 40065), (Start: 23 @39990 has 187 MA's), (29, 39921), (30, 39918), (31, 39915), (39, 39861), (66, 39648), (81, 39441),

Gene: Mysterious\_47 Start: 41019, Stop: 40390, Start Num: 18

Candidate Starts for Mysterious\_47:

(Start: 18 @41019 has 3 MA's), (26, 40938), (30, 40902), (35, 40875), (36, 40869), (45, 40806), (57, 40710), (66, 40608), (67, 40596),

Gene: NHagos\_40 Start: 34451, Stop: 33894, Start Num: 20

Candidate Starts for NHagos\_40:

(1, 34970), (2, 34805), (5, 34526), (14, 34490), (16, 34481), (Start: 20 @34451 has 8 MA's), (27, 34388), (33, 34352), (41, 34301), (52, 34226), (64, 34136), (72, 34049), (80, 33914),

Gene: Nicole21\_47 Start: 40277, Stop: 39717, Start Num: 23

Candidate Starts for Nicole21\_47:

(Start: 6 @40361 has 12 MA's), (7, 40355), (8, 40352), (Start: 23 @40277 has 187 MA's), (30, 40205), (31, 40202), (39, 40148), (57, 40037), (66, 39935), (81, 39728),

Gene: Numberten\_47 Start: 40283, Stop: 39723, Start Num: 23

Candidate Starts for Numberten\_47:

(Start: 6 @40367 has 12 MA's), (7, 40361), (8, 40358), (Start: 23 @40283 has 187 MA's), (29, 40214), (30, 40211), (31, 40208), (39, 40154), (57, 40043), (66, 39941), (81, 39734),

Gene: Oline\_46 Start: 39845, Stop: 39285, Start Num: 23

Candidate Starts for Oline\_46:

(Start: 6 @39929 has 12 MA's), (7, 39923), (8, 39920), (Start: 23 @39845 has 187 MA's), (29, 39776), (30, 39773), (31, 39770), (39, 39716), (57, 39605), (66, 39503), (81, 39296),

Gene: Omniscient\_47 Start: 40291, Stop: 39731, Start Num: 23

Candidate Starts for Omniscient\_47:

(Start: 6 @40375 has 12 MA's), (7, 40369), (8, 40366), (Start: 23 @40291 has 187 MA's), (29, 40222), (30, 40219), (31, 40216), (39, 40162), (66, 39949), (81, 39742),

Gene: Orfeu\_47 Start: 39978, Stop: 39424, Start Num: 23

Candidate Starts for Orfeu\_47:

(Start: 6 @40062 has 12 MA's), (7, 40056), (8, 40053), (Start: 23 @39978 has 187 MA's), (29, 39915), (30, 39912), (31, 39909), (39, 39855), (66, 39642), (74, 39576), (81, 39435),

Gene: Orion\_48 Start: 40412, Stop: 39852, Start Num: 23

Candidate Starts for Orion\_48:

(Start: 6 @40496 has 12 MA's), (7, 40490), (8, 40487), (Start: 23 @40412 has 187 MA's), (29, 40343), (30, 40340), (31, 40337), (39, 40283), (66, 40070),

Gene: PG1\_48 Start: 40425, Stop: 39865, Start Num: 23

Candidate Starts for PG1\_48:

(Start: 6 @40509 has 12 MA's), (7, 40503), (8, 40500), (Start: 23 @40425 has 187 MA's), (29, 40356), (30, 40353), (31, 40350), (39, 40296), (66, 40083),

Gene: PenguinLover67\_48 Start: 42106, Stop: 41504, Start Num: 21

Candidate Starts for PenguinLover67\_48:

(Start: 21 @42106 has 3 MA's), (30, 42019), (63, 41758), (66, 41722), (68, 41707), (71, 41683), (76, 41638), (79, 41584),

Gene: Phamished\_48 Start: 40420, Stop: 39860, Start Num: 23

Candidate Starts for Phamished\_48:

(Start: 6 @40504 has 12 MA's), (7, 40498), (8, 40495), (Start: 23 @40420 has 187 MA's), (29, 40351), (30, 40348), (31, 40345), (39, 40291), (66, 40078),

Gene: Phareon\_47 Start: 39980, Stop: 39426, Start Num: 23

Candidate Starts for Phareon\_47:

(Start: 6 @40064 has 12 MA's), (7, 40058), (8, 40055), (Start: 23 @39980 has 187 MA's), (29, 39917), (30, 39914), (31, 39911), (39, 39857), (66, 39644), (74, 39578), (81, 39437),

Gene: PhatCats2014\_48 Start: 40429, Stop: 39869, Start Num: 23

Candidate Starts for PhatCats2014\_48:

(Start: 6 @40513 has 12 MA's), (7, 40507), (8, 40504), (Start: 23 @40429 has 187 MA's), (29, 40360), (30, 40357), (31, 40354), (39, 40300), (66, 40087),

Gene: PhatLouie\_47 Start: 40283, Stop: 39723, Start Num: 23

Candidate Starts for PhatLouie\_47:

(Start: 6 @40367 has 12 MA's), (7, 40361), (8, 40358), (Start: 23 @40283 has 187 MA's), (29, 40214), (30, 40211), (31, 40208), (57, 40043), (66, 39941), (81, 39734),

Gene: Phelemich\_45 Start: 41018, Stop: 40389, Start Num: 18

Candidate Starts for Phelemich\_45:

(Start: 18 @41018 has 3 MA's), (26, 40937), (30, 40901), (35, 40874), (36, 40868), (45, 40805), (57, 40709), (66, 40607), (67, 40595),

Gene: Pherdinand\_48 Start: 40420, Stop: 39860, Start Num: 23

Candidate Starts for Pherdinand\_48:

(Start: 6 @40504 has 12 MA's), (7, 40498), (8, 40495), (Start: 23 @40420 has 187 MA's), (29, 40351), (30, 40348), (31, 40345), (39, 40291), (66, 40078),

Gene: PhrodoBaggins\_47 Start: 40408, Stop: 39848, Start Num: 23

Candidate Starts for PhrodoBaggins\_47:

(Start: 6 @40492 has 12 MA's), (7, 40486), (8, 40483), (Start: 23 @40408 has 187 MA's), (29, 40339), (30, 40336), (31, 40333), (39, 40279), (66, 40066),

Gene: Phunky\_47 Start: 40277, Stop: 39723, Start Num: 23

Candidate Starts for Phunky\_47:

(Start: 6 @40361 has 12 MA's), (7, 40355), (8, 40352), (Start: 23 @40277 has 187 MA's), (29, 40214), (30, 40211), (31, 40208), (39, 40154), (66, 39941), (81, 39734),

Gene: Piglet\_0046 Start: 40390, Stop: 39830, Start Num: 23

Candidate Starts for Piglet\_0046:

(Start: 6 @40474 has 12 MA's), (7, 40468), (8, 40465), (Start: 23 @40390 has 187 MA's), (29, 40321), (30, 40318), (31, 40315), (39, 40261), (57, 40150), (66, 40048), (81, 39841),

Gene: PinheadLarry\_47 Start: 39990, Stop: 39436, Start Num: 23

Candidate Starts for PinheadLarry\_47:

(Start: 6 @40074 has 12 MA's), (7, 40068), (8, 40065), (Start: 23 @39990 has 187 MA's), (29, 39927), (30, 39924), (31, 39921), (39, 39867), (66, 39654), (74, 39588), (81, 39447),

Gene: Pinkman\_46 Start: 39839, Stop: 39279, Start Num: 23

Candidate Starts for Pinkman\_46:

(Start: 6 @39923 has 12 MA's), (7, 39917), (8, 39914), (Start: 23 @39839 has 187 MA's), (29, 39770), (30, 39767), (31, 39764), (57, 39599), (66, 39497), (81, 39290),

Gene: Placalicious\_46 Start: 39977, Stop: 39417, Start Num: 23

Candidate Starts for Placalicious\_46:

(Start: 6 @40061 has 12 MA's), (7, 40055), (8, 40052), (Start: 23 @39977 has 187 MA's), (29, 39908), (30, 39905), (31, 39902), (57, 39737), (66, 39635), (81, 39428),

Gene: Plmatters\_47 Start: 40280, Stop: 39720, Start Num: 23

Candidate Starts for Plmatters\_47:

(Start: 6 @40364 has 12 MA's), (7, 40358), (8, 40355), (Start: 23 @40280 has 187 MA's), (29, 40211), (30, 40208), (31, 40205), (39, 40151), (57, 40040), (66, 39938), (81, 39731),

Gene: Podrick\_47 Start: 40271, Stop: 39711, Start Num: 23

Candidate Starts for Podrick\_47:

(Start: 6 @40355 has 12 MA's), (7, 40349), (8, 40346), (Start: 23 @40271 has 187 MA's), (29, 40202), (30, 40199), (31, 40196), (39, 40142), (57, 40031), (66, 39929), (81, 39722),

Gene: Pops\_47 Start: 40295, Stop: 39735, Start Num: 23

Candidate Starts for Pops\_47:

(Start: 6 @40379 has 12 MA's), (7, 40373), (8, 40370), (Start: 23 @40295 has 187 MA's), (29, 40226), (30, 40223), (31, 40220), (39, 40166), (57, 40055), (66, 39953), (81, 39746),

Gene: Potter\_46 Start: 39995, Stop: 39435, Start Num: 23

Candidate Starts for Potter\_46:

(Start: 6 @40079 has 12 MA's), (7, 40073), (8, 40070), (Start: 23 @39995 has 187 MA's), (29, 39926), (30, 39923), (31, 39920), (57, 39755), (66, 39653), (81, 39446),

Gene: Prickles\_47 Start: 40271, Stop: 39711, Start Num: 23

Candidate Starts for Prickles\_47:

(Start: 6 @40355 has 12 MA's), (7, 40349), (8, 40346), (Start: 23 @40271 has 187 MA's), (29, 40202), (30, 40199), (31, 40196), (39, 40142), (66, 39929), (81, 39722),

Gene: ProfessorX\_47 Start: 40272, Stop: 39712, Start Num: 23  
Candidate Starts for ProfessorX\_47:  
(Start: 6 @40356 has 12 MA's), (7, 40350), (8, 40347), (Start: 23 @40272 has 187 MA's), (29, 40203),  
(30, 40200), (31, 40197), (39, 40143), (66, 39930), (81, 39723),

Gene: Puhltonio\_47 Start: 40365, Stop: 39727, Start Num: 6  
Candidate Starts for Puhltonio\_47:  
(Start: 6 @40365 has 12 MA's), (7, 40359), (8, 40356), (Start: 23 @40281 has 187 MA's), (29, 40218),  
(30, 40215), (31, 40212), (39, 40158), (66, 39945), (74, 39879), (81, 39738),

Gene: Puppies\_48 Start: 36822, Stop: 36238, Start Num: 19  
Candidate Starts for Puppies\_48:  
(17, 36834), (Start: 19 @36822 has 2 MA's), (Start: 20 @36813 has 8 MA's), (32, 36717), (48, 36612),  
(53, 36591), (55, 36561), (80, 36258),

Gene: QueenBeane\_47 Start: 40271, Stop: 39717, Start Num: 23  
Candidate Starts for QueenBeane\_47:  
(Start: 6 @40355 has 12 MA's), (7, 40349), (8, 40346), (Start: 23 @40271 has 187 MA's), (29, 40208),  
(30, 40205), (31, 40202), (39, 40148), (66, 39935), (74, 39869), (81, 39728),

Gene: Quesadilla\_48 Start: 42077, Stop: 41490, Start Num: 21  
Candidate Starts for Quesadilla\_48:  
(Start: 21 @42077 has 3 MA's), (30, 41996), (31, 41993), (37, 41948), (63, 41744), (66, 41708), (68,  
41693), (71, 41669),

Gene: Quisquilliae\_47 Start: 40308, Stop: 39748, Start Num: 23  
Candidate Starts for Quisquilliae\_47:  
(Start: 6 @40392 has 12 MA's), (7, 40386), (8, 40383), (Start: 23 @40308 has 187 MA's), (29, 40239),  
(30, 40236), (31, 40233), (39, 40179), (57, 40068), (66, 39966), (81, 39759),

Gene: Qyrzula\_43 Start: 40579, Stop: 40082, Start Num: 28  
Candidate Starts for Qyrzula\_43:  
(Start: 28 @40579 has 1 MA's), (42, 40495), (57, 40402), (61, 40351), (66, 40300), (71, 40261),

Gene: RedMaple\_47 Start: 40422, Stop: 39862, Start Num: 23  
Candidate Starts for RedMaple\_47:  
(Start: 6 @40506 has 12 MA's), (7, 40500), (8, 40497), (Start: 23 @40422 has 187 MA's), (29, 40353),  
(30, 40350), (31, 40347), (39, 40293), (66, 40080),

Gene: Reprobate\_46 Start: 41023, Stop: 40394, Start Num: 18  
Candidate Starts for Reprobate\_46:  
(Start: 18 @41023 has 3 MA's), (26, 40942), (30, 40906), (35, 40879), (36, 40873), (45, 40810), (57,  
40714), (66, 40612), (67, 40600),

Gene: Ricotta\_47 Start: 39994, Stop: 39440, Start Num: 23  
Candidate Starts for Ricotta\_47:  
(Start: 6 @40078 has 12 MA's), (7, 40072), (8, 40069), (Start: 23 @39994 has 187 MA's), (29, 39931),  
(30, 39928), (31, 39925), (39, 39871), (66, 39658), (74, 39592), (81, 39451),

Gene: Riggan\_47 Start: 40267, Stop: 39707, Start Num: 23  
Candidate Starts for Riggan\_47:  
(Start: 6 @40351 has 12 MA's), (7, 40345), (8, 40342), (Start: 23 @40267 has 187 MA's), (29, 40198),  
(30, 40195), (31, 40192), (39, 40138), (66, 39925), (81, 39718),

Gene: Rimu\_49 Start: 40007, Stop: 39453, Start Num: 23

Candidate Starts for Rimu\_49:

(Start: 6 @40091 has 12 MA's), (7, 40085), (8, 40082), (Start: 23 @40007 has 187 MA's), (29, 39944), (30, 39941), (31, 39938), (39, 39884), (66, 39671), (74, 39605), (81, 39464),

Gene: Robyn\_46 Start: 39851, Stop: 39291, Start Num: 23

Candidate Starts for Robyn\_46:

(Start: 6 @39935 has 12 MA's), (7, 39929), (8, 39926), (Start: 23 @39851 has 187 MA's), (29, 39782), (30, 39779), (31, 39776), (57, 39611), (66, 39509), (81, 39302),

Gene: Roliet\_47 Start: 40279, Stop: 39719, Start Num: 23

Candidate Starts for Roliet\_47:

(Start: 18 @40321 has 3 MA's), (Start: 23 @40279 has 187 MA's), (29, 40210), (30, 40207), (31, 40204), (39, 40150), (66, 39937), (81, 39730),

Gene: Roscoe\_48 Start: 40517, Stop: 39957, Start Num: 23

Candidate Starts for Roscoe\_48:

(Start: 6 @40601 has 12 MA's), (7, 40595), (8, 40592), (Start: 23 @40517 has 187 MA's), (29, 40448), (30, 40445), (31, 40442), (39, 40388), (66, 40175), (81, 39968),

Gene: Roy17\_47 Start: 40055, Stop: 39417, Start Num: 6

Candidate Starts for Roy17\_47:

(Start: 6 @40055 has 12 MA's), (7, 40049), (8, 40046), (Start: 23 @39971 has 187 MA's), (29, 39908), (30, 39905), (31, 39902), (39, 39848), (66, 39635), (74, 39569), (81, 39428),

Gene: SDcharge11\_47 Start: 40299, Stop: 39697, Start Num: 18

Candidate Starts for SDcharge11\_47:

(Start: 18 @40299 has 3 MA's), (Start: 23 @40257 has 187 MA's), (29, 40188), (30, 40185), (31, 40182), (39, 40128), (66, 39915), (81, 39708),

Gene: Saguaro\_48 Start: 41742, Stop: 41140, Start Num: 21

Candidate Starts for Saguaro\_48:

(10, 41793), (11, 41790), (Start: 21 @41742 has 3 MA's), (25, 41700), (30, 41655), (31, 41652), (34, 41640), (56, 41463), (57, 41460), (63, 41394), (66, 41358), (71, 41319),

Gene: Samaymay\_47 Start: 40271, Stop: 39717, Start Num: 23

Candidate Starts for Samaymay\_47:

(Start: 6 @40355 has 12 MA's), (7, 40349), (8, 40346), (Start: 23 @40271 has 187 MA's), (29, 40208), (30, 40205), (31, 40202), (39, 40148), (66, 39935), (74, 39869), (81, 39728),

Gene: SassyCat97\_46 Start: 39983, Stop: 39423, Start Num: 23

Candidate Starts for SassyCat97\_46:

(Start: 6 @40067 has 12 MA's), (7, 40061), (8, 40058), (Start: 23 @39983 has 187 MA's), (29, 39914), (30, 39911), (31, 39908), (57, 39743), (66, 39641), (81, 39434),

Gene: Schadenfreude\_46 Start: 39825, Stop: 39265, Start Num: 23

Candidate Starts for Schadenfreude\_46:

(Start: 6 @39909 has 12 MA's), (7, 39903), (8, 39900), (Start: 23 @39825 has 187 MA's), (29, 39756), (30, 39753), (31, 39750), (57, 39585), (66, 39483), (81, 39276),

Gene: Schueller\_47 Start: 39996, Stop: 39436, Start Num: 23

Candidate Starts for Schueller\_47:



(Start: 6 @40080 has 12 MA's), (7, 40074), (8, 40071), (Start: 23 @39996 has 187 MA's), (29, 39927), (30, 39924), (31, 39921), (39, 39867), (66, 39654), (81, 39447),

Gene: Scoot17C\_48 Start: 40414, Stop: 39854, Start Num: 23

Candidate Starts for Scoot17C\_48:

(Start: 6 @40498 has 12 MA's), (7, 40492), (8, 40489), (Start: 23 @40414 has 187 MA's), (29, 40345), (30, 40342), (31, 40339), (39, 40285), (66, 40072),

Gene: Scrick\_47 Start: 40007, Stop: 39447, Start Num: 23

Candidate Starts for Scrick\_47:

(Start: 6 @40091 has 12 MA's), (7, 40085), (8, 40082), (Start: 23 @40007 has 187 MA's), (29, 39938), (30, 39935), (31, 39932), (39, 39878), (57, 39767), (66, 39665), (81, 39458),

Gene: Serendipity\_47 Start: 40295, Stop: 39741, Start Num: 23

Candidate Starts for Serendipity\_47:

(Start: 6 @40379 has 12 MA's), (7, 40373), (8, 40370), (Start: 23 @40295 has 187 MA's), (29, 40232), (30, 40229), (31, 40226), (39, 40172), (66, 39959), (74, 39893), (81, 39752),

Gene: Sheila\_47 Start: 40319, Stop: 39759, Start Num: 23

Candidate Starts for Sheila\_47:

(Start: 18 @40361 has 3 MA's), (Start: 23 @40319 has 187 MA's), (29, 40250), (30, 40247), (31, 40244), (39, 40190), (66, 39977), (81, 39770),

Gene: ShiVal\_47 Start: 40281, Stop: 39721, Start Num: 23

Candidate Starts for ShiVal\_47:

(Start: 6 @40365 has 12 MA's), (7, 40359), (8, 40356), (Start: 23 @40281 has 187 MA's), (29, 40212), (30, 40209), (31, 40206), (39, 40152), (66, 39939), (81, 39732),

Gene: Simielle\_46 Start: 39964, Stop: 39410, Start Num: 23

Candidate Starts for Simielle\_46:

(Start: 6 @40048 has 12 MA's), (7, 40042), (8, 40039), (Start: 23 @39964 has 187 MA's), (29, 39901), (30, 39898), (31, 39895), (39, 39841), (66, 39628), (74, 39562), (81, 39421),

Gene: Skippy\_47 Start: 40265, Stop: 39705, Start Num: 23

Candidate Starts for Skippy\_47:

(Start: 6 @40349 has 12 MA's), (7, 40343), (8, 40340), (Start: 23 @40265 has 187 MA's), (29, 40196), (30, 40193), (31, 40190), (39, 40136), (66, 39923), (81, 39716),

Gene: Slatt\_47 Start: 40291, Stop: 39731, Start Num: 23

Candidate Starts for Slatt\_47:

(Start: 6 @40375 has 12 MA's), (7, 40369), (8, 40366), (Start: 23 @40291 has 187 MA's), (29, 40222), (30, 40219), (31, 40216), (39, 40162), (57, 40051), (66, 39949), (81, 39742),

Gene: Soile\_47 Start: 39994, Stop: 39434, Start Num: 23

Candidate Starts for Soile\_47:

(Start: 6 @40078 has 12 MA's), (7, 40072), (8, 40069), (Start: 23 @39994 has 187 MA's), (29, 39925), (30, 39922), (31, 39919), (39, 39865), (66, 39652), (81, 39445),

Gene: Solosis\_46 Start: 39992, Stop: 39432, Start Num: 23

Candidate Starts for Solosis\_46:

(Start: 6 @40076 has 12 MA's), (7, 40070), (8, 40067), (Start: 23 @39992 has 187 MA's), (29, 39923), (30, 39920), (31, 39917), (39, 39863), (66, 39650), (81, 39443),

Gene: Sophia\_46 Start: 39986, Stop: 39432, Start Num: 23

Candidate Starts for Sophia\_46:

(Start: 6 @40070 has 12 MA's), (7, 40064), (8, 40061), (Start: 23 @39986 has 187 MA's), (29, 39923), (30, 39920), (31, 39917), (39, 39863), (66, 39650), (74, 39584), (81, 39443),

Gene: Soto\_47 Start: 40291, Stop: 39731, Start Num: 23

Candidate Starts for Soto\_47:

(Start: 18 @40333 has 3 MA's), (Start: 23 @40291 has 187 MA's), (29, 40222), (30, 40219), (31, 40216), (39, 40162), (66, 39949), (81, 39742),

Gene: Spartan300\_47 Start: 40277, Stop: 39717, Start Num: 23

Candidate Starts for Spartan300\_47:

(Start: 6 @40361 has 12 MA's), (7, 40355), (8, 40352), (Start: 23 @40277 has 187 MA's), (29, 40208), (30, 40205), (31, 40202), (39, 40148), (66, 39935), (81, 39728),

Gene: Squiggle\_47 Start: 40001, Stop: 39441, Start Num: 23

Candidate Starts for Squiggle\_47:

(Start: 6 @40085 has 12 MA's), (7, 40079), (8, 40076), (Start: 23 @40001 has 187 MA's), (29, 39932), (30, 39929), (31, 39926), (39, 39872), (66, 39659), (81, 39452),

Gene: Struggle\_46 Start: 39833, Stop: 39273, Start Num: 23

Candidate Starts for Struggle\_46:

(Start: 6 @39917 has 12 MA's), (7, 39911), (8, 39908), (Start: 23 @39833 has 187 MA's), (29, 39764), (30, 39761), (31, 39758), (39, 39704), (66, 39491), (81, 39284),

Gene: Suffolk\_47 Start: 40282, Stop: 39722, Start Num: 23

Candidate Starts for Suffolk\_47:

(Start: 6 @40366 has 12 MA's), (7, 40360), (8, 40357), (Start: 23 @40282 has 187 MA's), (29, 40213), (30, 40210), (31, 40207), (39, 40153), (66, 39940), (81, 39733),

Gene: Surely\_47 Start: 40288, Stop: 39728, Start Num: 23

Candidate Starts for Surely\_47:

(Start: 6 @40372 has 12 MA's), (7, 40366), (8, 40363), (Start: 23 @40288 has 187 MA's), (29, 40219), (30, 40216), (31, 40213), (57, 40048), (66, 39946), (81, 39739),

Gene: Swish\_48 Start: 40406, Stop: 39846, Start Num: 23

Candidate Starts for Swish\_48:

(Start: 6 @40490 has 12 MA's), (7, 40484), (8, 40481), (Start: 23 @40406 has 187 MA's), (29, 40337), (30, 40334), (31, 40331), (39, 40277), (66, 40064),

Gene: TallGrassMM\_47 Start: 39985, Stop: 39347, Start Num: 6

Candidate Starts for TallGrassMM\_47:

(Start: 6 @39985 has 12 MA's), (7, 39979), (8, 39976), (Start: 23 @39901 has 187 MA's), (29, 39838), (30, 39835), (31, 39832), (39, 39778), (66, 39565), (74, 39499), (81, 39358),

Gene: Telesworld\_46 Start: 39980, Stop: 39420, Start Num: 23

Candidate Starts for Telesworld\_46:

(Start: 6 @40064 has 12 MA's), (7, 40058), (8, 40055), (Start: 23 @39980 has 187 MA's), (29, 39911), (30, 39908), (31, 39905), (39, 39851), (57, 39740), (66, 39638), (81, 39431),

Gene: Thora\_47 Start: 40287, Stop: 39727, Start Num: 23

Candidate Starts for Thora\_47:

(Start: 6 @40371 has 12 MA's), (7, 40365), (8, 40362), (Start: 23 @40287 has 187 MA's), (29, 40218), (30, 40215), (31, 40212), (57, 40047), (66, 39945), (81, 39738),

Gene: Timmi\_46 Start: 39987, Stop: 39433, Start Num: 23

Candidate Starts for Timmi\_46:

(Start: 6 @40071 has 12 MA's), (7, 40065), (8, 40062), (Start: 23 @39987 has 187 MA's), (29, 39924), (30, 39921), (31, 39918), (39, 39864), (66, 39651), (74, 39585), (81, 39444),

Gene: TomBombadil\_47 Start: 40272, Stop: 39718, Start Num: 23

Candidate Starts for TomBombadil\_47:

(Start: 6 @40356 has 12 MA's), (7, 40350), (8, 40347), (Start: 23 @40272 has 187 MA's), (29, 40209), (30, 40206), (31, 40203), (39, 40149), (66, 39936), (74, 39870), (81, 39729),

Gene: Tomlarah\_47 Start: 40275, Stop: 39715, Start Num: 23

Candidate Starts for Tomlarah\_47:

(Start: 6 @40359 has 12 MA's), (7, 40353), (8, 40350), (Start: 23 @40275 has 187 MA's), (29, 40206), (30, 40203), (31, 40200), (39, 40146), (66, 39933), (81, 39726),

Gene: Toni\_46 Start: 39979, Stop: 39425, Start Num: 23

Candidate Starts for Toni\_46:

(Start: 6 @40063 has 12 MA's), (7, 40057), (8, 40054), (Start: 23 @39979 has 187 MA's), (29, 39916), (30, 39913), (31, 39910), (39, 39856), (66, 39643), (74, 39577), (81, 39436),

Gene: Tooj\_47 Start: 40342, Stop: 39782, Start Num: 23

Candidate Starts for Tooj\_47:

(Start: 6 @40426 has 12 MA's), (7, 40420), (8, 40417), (Start: 23 @40342 has 187 MA's), (29, 40273), (30, 40270), (31, 40267), (39, 40213), (57, 40102), (66, 40000), (81, 39793),

Gene: True\_46 Start: 39985, Stop: 39425, Start Num: 23

Candidate Starts for True\_46:

(Start: 6 @40069 has 12 MA's), (7, 40063), (8, 40060), (Start: 23 @39985 has 187 MA's), (29, 39916), (30, 39913), (31, 39910), (57, 39745), (66, 39643), (81, 39436),

Gene: TyrionL\_46 Start: 39841, Stop: 39281, Start Num: 23

Candidate Starts for TyrionL\_46:

(Start: 6 @39925 has 12 MA's), (7, 39919), (8, 39916), (Start: 23 @39841 has 187 MA's), (29, 39772), (30, 39769), (31, 39766), (57, 39601), (66, 39499), (81, 39292),

Gene: UAch1\_47 Start: 40294, Stop: 39734, Start Num: 23

Candidate Starts for UAch1\_47:

(Start: 6 @40378 has 12 MA's), (7, 40372), (8, 40369), (Start: 23 @40294 has 187 MA's), (29, 40225), (30, 40222), (31, 40219), (57, 40054), (66, 39952), (81, 39745),

Gene: Usavi\_47 Start: 40282, Stop: 39722, Start Num: 23

Candidate Starts for Usavi\_47:

(Start: 23 @40282 has 187 MA's), (29, 40213), (30, 40210), (31, 40207), (39, 40153), (66, 39940), (81, 39733),

Gene: Vaishali24\_46 Start: 40027, Stop: 39383, Start Num: 6

Candidate Starts for Vaishali24\_46:

(Start: 6 @40027 has 12 MA's), (7, 40021), (8, 40018), (Start: 23 @39943 has 187 MA's), (29, 39874), (30, 39871), (31, 39868), (39, 39814), (57, 39703), (66, 39601), (81, 39394),

Gene: Valjean\_47 Start: 40280, Stop: 39720, Start Num: 23

Candidate Starts for Valjean\_47:

(Start: 6 @40364 has 12 MA's), (7, 40358), (8, 40355), (Start: 23 @40280 has 187 MA's), (29, 40211), (30, 40208), (31, 40205), (39, 40151), (66, 39938), (81, 39731),

Gene: Vaticameos\_43 Start: 38050, Stop: 37412, Start Num: 6

Candidate Starts for Vaticameos\_43:

(Start: 6 @38050 has 12 MA's), (7, 38044), (8, 38041), (Start: 23 @37966 has 187 MA's), (29, 37903), (30, 37900), (31, 37897), (39, 37843), (66, 37630), (74, 37564), (81, 37423),

Gene: Veritas\_46 Start: 39847, Stop: 39287, Start Num: 23

Candidate Starts for Veritas\_46:

(Start: 6 @39931 has 12 MA's), (7, 39925), (8, 39922), (Start: 23 @39847 has 187 MA's), (30, 39775), (31, 39772), (39, 39718), (57, 39607), (66, 39505), (81, 39298),

Gene: Virapocalypse\_47 Start: 40275, Stop: 39715, Start Num: 23

Candidate Starts for Virapocalypse\_47:

(Start: 6 @40359 has 12 MA's), (7, 40353), (8, 40350), (Start: 23 @40275 has 187 MA's), (29, 40206), (30, 40203), (31, 40200), (57, 40035), (66, 39933), (81, 39726),

Gene: Virgeve\_46 Start: 40052, Stop: 39492, Start Num: 23

Candidate Starts for Virgeve\_46:

(Start: 6 @40136 has 12 MA's), (7, 40130), (8, 40127), (Start: 23 @40052 has 187 MA's), (29, 39983), (30, 39980), (31, 39977), (39, 39923), (66, 39710), (81, 39503),

Gene: Vortex\_47 Start: 40066, Stop: 39428, Start Num: 6

Candidate Starts for Vortex\_47:

(Start: 6 @40066 has 12 MA's), (7, 40060), (8, 40057), (Start: 23 @39982 has 187 MA's), (29, 39919), (30, 39916), (31, 39913), (39, 39859), (66, 39646), (74, 39580), (81, 39439),

Gene: Wallhey\_46 Start: 39845, Stop: 39285, Start Num: 23

Candidate Starts for Wallhey\_46:

(Start: 6 @39929 has 12 MA's), (7, 39923), (8, 39920), (Start: 23 @39845 has 187 MA's), (29, 39776), (30, 39773), (31, 39770), (57, 39605), (66, 39503), (81, 39296),

Gene: Weher20\_47 Start: 40276, Stop: 39716, Start Num: 23

Candidate Starts for Weher20\_47:

(Start: 6 @40360 has 12 MA's), (7, 40354), (8, 40351), (Start: 23 @40276 has 187 MA's), (29, 40207), (30, 40204), (31, 40201), (39, 40147), (57, 40036), (66, 39934), (81, 39727),

Gene: Widow\_49 Start: 37464, Stop: 36880, Start Num: 19

Candidate Starts for Widow\_49:

(3, 37569), (4, 37536), (17, 37476), (Start: 19 @37464 has 2 MA's), (Start: 20 @37455 has 8 MA's), (32, 37359), (48, 37254), (55, 37203), (77, 36993), (80, 36900),

Gene: Windsor\_46 Start: 39981, Stop: 39421, Start Num: 23

Candidate Starts for Windsor\_46:

(Start: 6 @40065 has 12 MA's), (7, 40059), (8, 40056), (Start: 23 @39981 has 187 MA's), (29, 39912), (30, 39909), (31, 39906), (39, 39852), (66, 39639), (81, 39432),

Gene: Wooper\_42 Start: 35889, Stop: 35314, Start Num: 20

Candidate Starts for Wooper\_42:

(Start: 20 @35889 has 8 MA's), (24, 35850), (40, 35739), (46, 35700), (60, 35577), (62, 35565), (64, 35556), (67, 35514), (68, 35511), (69, 35508), (70, 35499),

Gene: Xavier\_46 Start: 40073, Stop: 39435, Start Num: 6

Candidate Starts for Xavier\_46:

(Start: 6 @40073 has 12 MA's), (7, 40067), (8, 40064), (Start: 23 @39989 has 187 MA's), (29, 39926), (30, 39923), (31, 39920), (39, 39866), (66, 39653), (74, 39587), (81, 39446),

Gene: Yoshand\_48 Start: 40419, Stop: 39859, Start Num: 23

Candidate Starts for Yoshand\_48:

(Start: 6 @40503 has 12 MA's), (7, 40497), (8, 40494), (Start: 23 @40419 has 187 MA's), (29, 40350), (30, 40347), (31, 40344), (39, 40290), (66, 40077),

Gene: YouGoGlencoco\_47 Start: 40279, Stop: 39719, Start Num: 23

Candidate Starts for YouGoGlencoco\_47:

(Start: 6 @40363 has 12 MA's), (7, 40357), (8, 40354), (Start: 23 @40279 has 187 MA's), (29, 40210), (30, 40207), (31, 40204), (57, 40039), (66, 39937), (81, 39730),

Gene: Zaider\_48 Start: 40509, Stop: 39949, Start Num: 23

Candidate Starts for Zaider\_48:

(Start: 6 @40593 has 12 MA's), (7, 40587), (8, 40584), (Start: 23 @40509 has 187 MA's), (29, 40440), (30, 40437), (31, 40434), (57, 40269), (66, 40167), (81, 39960),

Gene: Zelda\_47 Start: 40326, Stop: 39766, Start Num: 23

Candidate Starts for Zelda\_47:

(Start: 6 @40410 has 12 MA's), (7, 40404), (8, 40401), (Start: 23 @40326 has 187 MA's), (29, 40257), (30, 40254), (31, 40251), (57, 40086), (66, 39984), (81, 39777),

Gene: Zonia\_47 Start: 40296, Stop: 39736, Start Num: 23

Candidate Starts for Zonia\_47:

(Start: 6 @40380 has 12 MA's), (7, 40374), (8, 40371), (Start: 23 @40296 has 187 MA's), (29, 40227), (30, 40224), (31, 40221), (57, 40056), (66, 39954), (81, 39747),