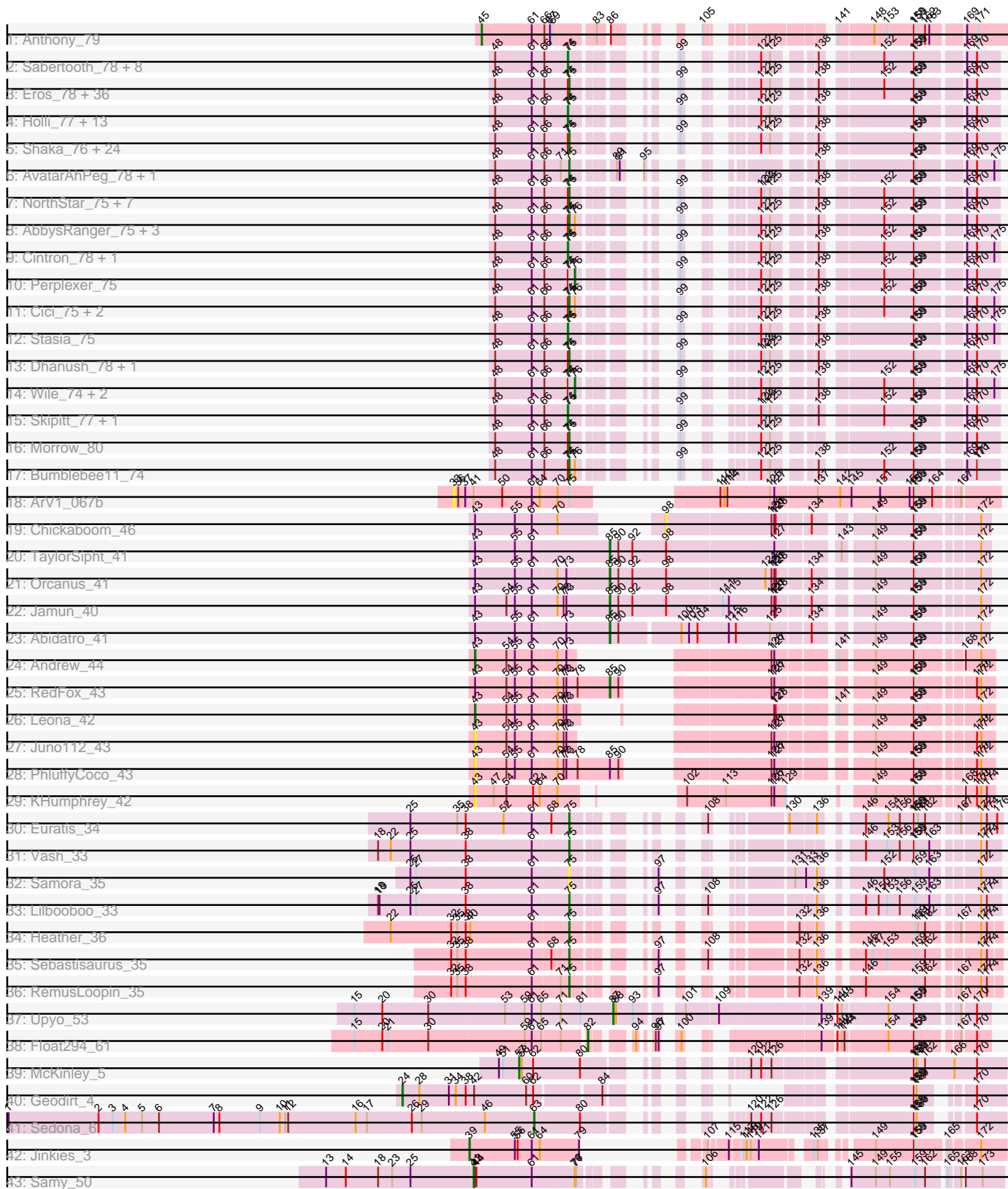


# Pham 156192



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 156192 Report

This analysis was run 04/12/24 on database version 558.

Pham number 156192 has 142 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Anthony\_79
- Track 2 : Sabertooth\_78, Mazhar510\_78, Connomayer\_78, Polymorphads\_79, TygerBlood\_78, Koreni\_77, LHTSCC\_80, Tinybot\_77, Pumbaa\_78
- Track 3 : Eros\_78, OKaNui\_77, DirtyDunning\_77, MeeZee\_77, Obama12\_79, Maverick\_77, Iceman\_76, Happiness\_77, HamSlice\_74, Peaches\_76, Burger\_76, Phacado\_78, Millski\_77, PeterPeter\_78, Avle17\_78, Broseidon\_78, Datway\_75, Commander\_76, Lorenzo\_78, Cocoaberry\_78, ICleared\_77, Alberto7\_79, Wander\_78, Relief\_77, Kyee\_78, Arturo\_75, Houdini22\_77, LittleGuy\_78, Scamp\_78, Nemo27\_77, Gadost\_78, LappelDuVide\_74, Eapen\_78, NotAPhaseMom\_77, Annyong\_77, Phighter1804\_78, Xena\_74
- Track 4 : Holli\_77, Kingmustik0402\_78, Sparxx\_79, Blackmoor\_77, Maxo\_80, Ohfah\_79, JetBlade\_79, Nyxis\_77, Bartimeaus\_78, TroyPia\_79, BangNhom\_75, YoSam321\_78, Baby16\_78, Eurydice\_79
- Track 5 : Shaka\_76, TiroTheta9\_77, Caelakin\_76, LochMonster\_79, Kampy\_77, Eagle\_77, Iracema64\_78, ChampagnePapi\_81, BellusTerra\_79, Deano\_75, Spino\_77, Roosevelt\_76, Phelipe\_79, Abdiel\_77, SheldonCooper\_78, Taquarus\_77, Cerulean\_80, CentreCat\_78, Citius\_78, Lunsford\_75, Phontbonne\_78, Nebs\_79, Medusa\_77, Ulysses\_77, Druantia\_77
- Track 6 : AvatarAhPeg\_78, Miramae\_78
- Track 7 : NorthStar\_75, Romney\_77, Melvin\_80, Wilbur\_78, Pipcraft\_74, Ruin\_78, Lemur\_78, Flux\_79
- Track 8 : AbbysRanger\_75, Badger\_74, PetiteSangsue\_75, Backyardigan\_73
- Track 9 : Cintron\_78, Kremtemulon\_72
- Track 10 : Perplexer\_75
- Track 11 : Cici\_75, Morpher26\_75, Shygu2\_76
- Track 12 : Stasia\_75
- Track 13 : Dhanush\_78, Chaph\_78
- Track 14 : Wile\_74, Wizard007\_75, Katalie136\_75
- Track 15 : Skipitt\_77, Bombshell\_78
- Track 16 : Morrow\_80
- Track 17 : Bumblebee11\_74
- Track 18 : ArV1\_067b
- Track 19 : Chickaboom\_46
- Track 20 : TaylorSipht\_41
- Track 21 : Orcanus\_41
- Track 22 : Jamun\_40
- Track 23 : Abidatro\_41

- Track 24 : Andrew\_44
- Track 25 : RedFox\_43
- Track 26 : Leona\_42
- Track 27 : Juno112\_43
- Track 28 : PhluffyCoco\_43
- Track 29 : KHumphrey\_42
- Track 30 : Euratis\_34
- Track 31 : Vash\_33
- Track 32 : Samora\_35
- Track 33 : Lilbooboo\_33
- Track 34 : Heather\_36
- Track 35 : Sebastisaurus\_35
- Track 36 : RemusLoopin\_35
- Track 37 : Upyo\_53
- Track 38 : Float294\_61
- Track 39 : McKinley\_5
- Track 40 : Geodirt\_4
- Track 41 : Sedona\_6
- Track 42 : Jinkies\_3
- Track 43 : Samy\_50

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

The start number called the most often in the published annotations is 75, it was called in 87 of the 133 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• AbbysRanger\_75, Abdiel\_77, Alberto7\_79, Annyong\_77, Arturo\_75, AvatarAhPeg\_78, Avle17\_78, Backyardigan\_73, Badger\_74, BellusTerra\_79, Broseidon\_78, Bumblebee11\_74, Burger\_76, Caelakin\_76, CentreCat\_78, Cerulean\_80, ChampagnePapi\_81, Chaph\_78, Cici\_75, Citius\_78, Cocoaberry\_78, Commander\_76, Datway\_75, Deano\_75, Dhanush\_78, DirtyDunning\_77, Druantia\_77, Eagle\_77, Eapen\_78, Eros\_78, Euratis\_34, Flux\_79, Gadost\_78, HamSlice\_74, Happiness\_77, Heather\_36, Houdini22\_77, ICleared\_77, Iceman\_76, Iracema64\_78, Kamy\_77, Kyee\_78, LappelDuVide\_74, Lemur\_78, Lilbooboo\_33, LittleGuy\_78, LochMonster\_79, Lorenzo\_78, Lunsford\_75, Maverick\_77, Medusa\_77, MeeZee\_77, Melvin\_80, Millski\_77, Miramae\_78, Morpher26\_75, Morrow\_80, Nebs\_79, Nemo27\_77, NorthStar\_75, NotAPhaseMom\_77, OKaNui\_77, Obama12\_79, Peaches\_76, PeterPeter\_78, PetiteSangsue\_75, Phacado\_78, Phelipe\_79, Phighter1804\_78, Phontbonne\_78, Pipcraft\_74, Relief\_77, RemusLoopin\_35, Romney\_77, Roosevelt\_76, Ruin\_78, Samora\_35, Scamp\_78, Sebastisaurus\_35, Shaka\_76, SheldonCooper\_78, Shygu2\_76, Spino\_77, Taquarus\_77, TiroTheta9\_77, Ulysses\_77, Vash\_33, Wander\_78, Wilbur\_78, Xena\_74,

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

• ArV1\_067b, Baby16\_78, BangNhom\_75, Bartimeaus\_78, Blackmoor\_77, Bombshell\_78, Cintron\_78, Connomayer\_78, Eurydice\_79, Holli\_77, JetBlade\_79, Katalie136\_75, Kingmustik0402\_78, Koreni\_77, Kremtemulon\_72, LHTSCC\_80, Maxo\_80, Mazhar510\_78, Nyxis\_77, Ohfah\_79, Perplexer\_75, Polymorphads\_79,

Pumbaa\_78, Sabertooth\_78, Skipitt\_77, Sparxx\_79, Stasia\_75, Tinybot\_77, TroyPia\_79, TygerBlood\_78, Wile\_74, Wizard007\_75, YoSam321\_78,

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

• Abidatro\_41, Andrew\_44, Anthony\_79, Chickaboom\_46, Float294\_61, Geodirt\_4, Jamun\_40, Jinkies\_3, Juno112\_43, KHumphrey\_42, Leona\_42, McKinley\_5, Orcanus\_41, PhluffyCoco\_43, RedFox\_43, Samy\_50, Sedona\_6, TaylorSipht\_41, Upyo\_53,

### Summary by start number:

Start 24:

- Found in 1 of 142 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Geodirt\_4 (DE1),

Start 33:

- Found in 1 of 142 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ArV1\_067b (AR),

Start 39:

- Found in 1 of 142 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jinkies\_3 (FL),

Start 41:

- Found in 2 of 142 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Samy\_50 (singleton),

Start 43:

- Found in 12 of 142 ( 8.5% ) of genes in pham
- Manual Annotations of this start: 2 of 133
- Called 41.7% of time when present
- Phage (with cluster) where this start called: Andrew\_44 (AS3), Juno112\_43 (AS3), KHumphrey\_42 (AS3), Leona\_42 (AS3), PhluffyCoco\_43 (AS3),

Start 45:

- Found in 1 of 142 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anthony\_79 (A20),

Start 57:

- Found in 1 of 142 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: McKinley\_5 (DE1),

Start 63:

- Found in 1 of 142 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sedona\_6 (DE1),

Start 74:

- Found in 113 of 142 ( 79.6% ) of genes in pham
- Manual Annotations of this start: 27 of 133
- Called 24.8% of time when present
- Phage (with cluster) where this start called: Baby16\_78 (A4), BangNhom\_75 (A4), Bartimeaus\_78 (A4), Blackmoor\_77 (A4), Bombshell\_78 (A4), Cintron\_78 (A4), Connomayer\_78 (A4), Eurydice\_79 (A4), Holli\_77 (A4), JetBlade\_79 (A4), Kingmustik0402\_78 (A4), Koreni\_77 (A4), Kremtemulon\_72 (A4), LHTSCC\_80 (A4), Maxo\_80 (A4), Mazhar510\_78 (A4), Nyxis\_77 (A4), Ohfah\_79 (A4), Polymorphads\_79 (A4), Pumbaa\_78 (A4), Sabertooth\_78 (A4), Skipitt\_77 (A4), Sparxx\_79 (A4), Stasia\_75 (A4), Tinybot\_77 (A4), TroyPia\_79 (A4), TygerBlood\_78 (A4), YoSam321\_78 (A4),

Start 75:

- Found in 123 of 142 ( 86.6% ) of genes in pham
- Manual Annotations of this start: 87 of 133
- Called 73.2% of time when present
- Phage (with cluster) where this start called: AbbysRanger\_75 (A4), Abdiel\_77 (A4), Alberto7\_79 (A4), Annyong\_77 (A4), Arturo\_75 (A4), AvatarAhPeg\_78 (A4), Avle17\_78 (A4), Backyardigan\_73 (A4), Badger\_74 (A4), BellusTerra\_79 (A4), Broseidon\_78 (A4), Bumblebee11\_74 (A4), Burger\_76 (A4), Caelakin\_76 (A4), CentreCat\_78 (A4), Cerulean\_80 (A4), ChampagnePapi\_81 (A4), Chaph\_78 (A4), Cici\_75 (A4), Citius\_78 (A4), Cocoaberry\_78 (A4), Commander\_76 (A4), Datway\_75 (A4), Deano\_75 (A4), Dhanush\_78 (A4), DirtyDunning\_77 (A4), Druantia\_77 (A4), Eagle\_77 (A4), Eapen\_78 (A4), Eros\_78 (A4), Euratis\_34 (BB1), Flux\_79 (A4), Gadost\_78 (A4), HamSlice\_74 (A4), Happiness\_77 (A4), Heather\_36 (BB2), Houdini22\_77 (A4), ICleared\_77 (A4), Iceman\_76 (A4), Iracema64\_78 (A4), Kamy\_77 (A4), Kyee\_78 (A4), LappelDuVide\_74 (A4), Lemur\_78 (A4), Lilbooboo\_33 (BB1), LittleGuy\_78 (A4), LochMonster\_79 (A4), Lorenzo\_78 (A4), Lunsford\_75 (A4), Maverick\_77 (A4), Medusa\_77 (A4), MeeZee\_77 (A4), Melvin\_80 (A4), Millski\_77 (A4), Miramae\_78 (A4), Morpher26\_75 (A4), Morrow\_80 (A4), Nebs\_79 (A4), Nemo27\_77 (A4), NorthStar\_75 (A4), NotAPhaseMom\_77 (A4), OKaNui\_77 (A4), Obama12\_79 (A4), Peaches\_76 (A4), PeterPeter\_78 (A4), PetiteSangsue\_75 (A4), Phacado\_78 (A4), Phelipe\_79 (A4), Phighter1804\_78 (A4), Phontbonne\_78 (A4), Pipcraft\_74 (A4), Relief\_77 (A4), RemusLoopin\_35 (BB2), Romney\_77 (A4), Roosevelt\_76 (A4), Ruin\_78 (A4), Samora\_35 (BB1), Scamp\_78 (A4), Sebastisaurus\_35 (BB2), Shaka\_76 (A4), SheldonCooper\_78 (A4), Shygu2\_76 (A4), Spino\_77 (A4), Taquarus\_77 (A4), TiroTheta9\_77 (A4), Ulysses\_77 (A4), Vash\_33 (BB1), Wander\_78 (A4), Wilbur\_78 (A4), Xena\_74 (A4),

Start 76:

- Found in 13 of 142 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 4 of 133
- Called 30.8% of time when present
- Phage (with cluster) where this start called: Katalie136\_75 (A4), Perplexer\_75 (A4), Wile\_74 (A4), Wizard007\_75 (A4),

Start 82:

- Found in 1 of 142 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Float294\_61 (CR3),

Start 85:

- Found in 6 of 142 ( 4.2% ) of genes in pham
- Manual Annotations of this start: 5 of 133
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Abidatro\_41 (AS1), Jamun\_40 (AS1), Orcanus\_41 (AS1), RedFox\_43 (AS3), TaylorSipht\_41 (AS1),

Start 87:

- Found in 1 of 142 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 133
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Upyo\_53 (CD),

Start 98:

- Found in 4 of 142 ( 2.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Chickaboom\_46 (AS1),

**Summary by clusters:**

There are 12 clusters represented in this pham: AS3, A20, AS1, CR3, DE1, singleton, CD, AR, A4, FL, BB2, BB1,

Info for manual annotations of cluster A20:

- Start number 45 was manually annotated 1 time for cluster A20.

Info for manual annotations of cluster A4:

- Start number 74 was manually annotated 27 times for cluster A4.
- Start number 75 was manually annotated 81 times for cluster A4.
- Start number 76 was manually annotated 4 times for cluster A4.

Info for manual annotations of cluster AS1:

- Start number 85 was manually annotated 4 times for cluster AS1.

Info for manual annotations of cluster AS3:

- Start number 43 was manually annotated 2 times for cluster AS3.
- Start number 85 was manually annotated 1 time for cluster AS3.

Info for manual annotations of cluster BB1:

- Start number 75 was manually annotated 3 times for cluster BB1.

Info for manual annotations of cluster BB2:

- Start number 75 was manually annotated 3 times for cluster BB2.

Info for manual annotations of cluster CD:

- Start number 87 was manually annotated 1 time for cluster CD.

Info for manual annotations of cluster CR3:

- Start number 82 was manually annotated 1 time for cluster CR3.

Info for manual annotations of cluster DE1:

- Start number 24 was manually annotated 1 time for cluster DE1.
- Start number 57 was manually annotated 1 time for cluster DE1.
- Start number 63 was manually annotated 1 time for cluster DE1.

Info for manual annotations of cluster FL:

- Start number 39 was manually annotated 1 time for cluster FL.

### **Gene Information:**

Gene: AbbysRanger\_75 Start: 46560, Stop: 45976, Start Num: 75

Candidate Starts for AbbysRanger\_75:

(48, 46710), (61, 46632), (66, 46611), (Start: 74 @46563 has 27 MA's), (Start: 75 @46560 has 87 MA's), (Start: 76 @46548 has 4 MA's), (99, 46455), (122, 46383), (125, 46365), (138, 46299), (152, 46194), (158, 46134), (159, 46131), (169, 46044), (170, 46023),

Gene: Abdiel\_77 Start: 46760, Stop: 46176, Start Num: 75

Candidate Starts for Abdiel\_77:

(48, 46910), (61, 46832), (66, 46811), (Start: 74 @46763 has 27 MA's), (Start: 75 @46760 has 87 MA's), (99, 46655), (122, 46583), (125, 46565), (138, 46499), (158, 46334), (159, 46331), (169, 46244), (170, 46223),

Gene: Abidatro\_41 Start: 27763, Stop: 28476, Start Num: 85

Candidate Starts for Abidatro\_41:

(Start: 43 @27487 has 2 MA's), (55, 27568), (61, 27604), (73, 27670), (Start: 85 @27763 has 5 MA's), (90, 27781), (100, 27901), (103, 27916), (104, 27934), (115, 28000), (116, 28015), (125, 28087), (134, 28162), (149, 28264), (158, 28339), (159, 28342), (172, 28459),

Gene: Alberto7\_79 Start: 47085, Stop: 46501, Start Num: 75

Candidate Starts for Alberto7\_79:

(48, 47235), (61, 47157), (66, 47136), (Start: 74 @47088 has 27 MA's), (Start: 75 @47085 has 87 MA's), (99, 46980), (122, 46908), (125, 46890), (138, 46824), (152, 46719), (158, 46659), (159, 46656), (169, 46569), (170, 46548),

Gene: Andrew\_44 Start: 27053, Stop: 27850, Start Num: 43

Candidate Starts for Andrew\_44:

(Start: 43 @27053 has 2 MA's), (54, 27119), (55, 27134), (61, 27170), (70, 27218), (73, 27236), (126, 27452), (127, 27458), (141, 27563), (149, 27626), (158, 27701), (159, 27704), (168, 27788), (172, 27821),

Gene: Annyong\_77 Start: 46793, Stop: 46209, Start Num: 75

Candidate Starts for Annyong\_77:

(48, 46943), (61, 46865), (66, 46844), (Start: 74 @46796 has 27 MA's), (Start: 75 @46793 has 87 MA's), (99, 46688), (122, 46616), (125, 46598), (138, 46532), (152, 46427), (158, 46367), (159, 46364), (169, 46277), (170, 46256),

Gene: Anthony\_79 Start: 47520, Stop: 46663, Start Num: 45

Candidate Starts for Anthony\_79:

(Start: 45 @47520 has 1 MA's), (61, 47415), (66, 47394), (67, 47382), (69, 47376), (83, 47298), (86, 47280), (105, 47214), (141, 47034), (148, 46965), (153, 46941), (158, 46887), (159, 46884), (162, 46863), (163, 46854), (169, 46791), (171, 46767),

Gene: ArV1\_067b Start: 51785, Stop: 52711, Start Num: 33

Candidate Starts for ArV1\_067b:

(33, 51785), (36, 51794), (37, 51809), (Start: 41 @51827 has 1 MA's), (50, 51887), (61, 51944), (64, 51959), (70, 51992), (Start: 75 @52016 has 87 MA's), (110, 52154), (112, 52163), (114, 52169), (125, 52256), (127, 52265), (137, 52352), (142, 52400), (145, 52424), (151, 52484), (157, 52547), (158, 52556), (159, 52559), (164, 52589), (167, 52634),

Gene: Arturo\_75 Start: 46876, Stop: 46292, Start Num: 75

Candidate Starts for Arturo\_75:

(48, 47026), (61, 46948), (66, 46927), (Start: 74 @46879 has 27 MA's), (Start: 75 @46876 has 87 MA's), (99, 46771), (122, 46699), (125, 46681), (138, 46615), (152, 46510), (158, 46450), (159, 46447), (169, 46360), (170, 46339),

Gene: AvatarAhPeg\_78 Start: 46909, Stop: 46328, Start Num: 75

Candidate Starts for AvatarAhPeg\_78:

(48, 47059), (61, 46981), (66, 46960), (71, 46927), (Start: 75 @46909 has 87 MA's), (89, 46840), (91, 46834), (95, 46822), (138, 46651), (158, 46486), (159, 46483), (169, 46396), (170, 46375), (175, 46339),

Gene: Avle17\_78 Start: 46742, Stop: 46158, Start Num: 75

Candidate Starts for Avle17\_78:

(48, 46892), (61, 46814), (66, 46793), (Start: 74 @46745 has 27 MA's), (Start: 75 @46742 has 87 MA's), (99, 46637), (122, 46565), (125, 46547), (138, 46481), (152, 46376), (158, 46316), (159, 46313), (169, 46226), (170, 46205),

Gene: Baby16\_78 Start: 46762, Stop: 46175, Start Num: 74

Candidate Starts for Baby16\_78:

(48, 46909), (61, 46831), (66, 46810), (Start: 74 @46762 has 27 MA's), (Start: 75 @46759 has 87 MA's), (99, 46654), (122, 46582), (125, 46564), (138, 46498), (158, 46333), (159, 46330), (169, 46243), (170, 46222),

Gene: Backyardigan\_73 Start: 46576, Stop: 45992, Start Num: 75

Candidate Starts for Backyardigan\_73:

(48, 46726), (61, 46648), (66, 46627), (Start: 74 @46579 has 27 MA's), (Start: 75 @46576 has 87 MA's), (Start: 76 @46564 has 4 MA's), (99, 46471), (122, 46399), (125, 46381), (138, 46315), (152, 46210), (158, 46150), (159, 46147), (169, 46060), (170, 46039),

Gene: Badger\_74 Start: 46542, Stop: 45958, Start Num: 75

Candidate Starts for Badger\_74:

(48, 46692), (61, 46614), (66, 46593), (Start: 74 @46545 has 27 MA's), (Start: 75 @46542 has 87 MA's), (Start: 76 @46530 has 4 MA's), (99, 46437), (122, 46365), (125, 46347), (138, 46281), (152, 46176), (158, 46116), (159, 46113), (169, 46026), (170, 46005),

Gene: BangNhom\_75 Start: 47188, Stop: 46601, Start Num: 74

Candidate Starts for BangNhom\_75:



(48, 47335), (61, 47257), (66, 47236), (Start: 74 @47188 has 27 MA's), (Start: 75 @47185 has 87 MA's), (99, 47080), (122, 47008), (125, 46990), (138, 46924), (158, 46759), (159, 46756), (169, 46669), (170, 46648),

Gene: Bartimeaus\_78 Start: 46753, Stop: 46166, Start Num: 74

Candidate Starts for Bartimeaus\_78:

(48, 46900), (61, 46822), (66, 46801), (Start: 74 @46753 has 27 MA's), (Start: 75 @46750 has 87 MA's), (99, 46645), (122, 46573), (125, 46555), (138, 46489), (158, 46324), (159, 46321), (169, 46234), (170, 46213),

Gene: BellusTerra\_79 Start: 46789, Stop: 46205, Start Num: 75

Candidate Starts for BellusTerra\_79:

(48, 46939), (61, 46861), (66, 46840), (Start: 74 @46792 has 27 MA's), (Start: 75 @46789 has 87 MA's), (99, 46684), (122, 46612), (125, 46594), (138, 46528), (158, 46363), (159, 46360), (169, 46273), (170, 46252),

Gene: Blackmoor\_77 Start: 46753, Stop: 46166, Start Num: 74

Candidate Starts for Blackmoor\_77:

(48, 46900), (61, 46822), (66, 46801), (Start: 74 @46753 has 27 MA's), (Start: 75 @46750 has 87 MA's), (99, 46645), (122, 46573), (125, 46555), (138, 46489), (158, 46324), (159, 46321), (169, 46234), (170, 46213),

Gene: Bombshell\_78 Start: 46748, Stop: 46161, Start Num: 74

Candidate Starts for Bombshell\_78:

(48, 46895), (61, 46817), (66, 46796), (Start: 74 @46748 has 27 MA's), (Start: 75 @46745 has 87 MA's), (99, 46640), (122, 46568), (123, 46562), (125, 46550), (138, 46484), (152, 46379), (158, 46319), (159, 46316), (169, 46229), (170, 46208),

Gene: Broseidon\_78 Start: 46751, Stop: 46167, Start Num: 75

Candidate Starts for Broseidon\_78:

(48, 46901), (61, 46823), (66, 46802), (Start: 74 @46754 has 27 MA's), (Start: 75 @46751 has 87 MA's), (99, 46646), (122, 46574), (125, 46556), (138, 46490), (152, 46385), (158, 46325), (159, 46322), (169, 46235), (170, 46214),

Gene: Bumblebee11\_74 Start: 46542, Stop: 45958, Start Num: 75

Candidate Starts for Bumblebee11\_74:

(48, 46692), (61, 46614), (66, 46593), (Start: 74 @46545 has 27 MA's), (Start: 75 @46542 has 87 MA's), (Start: 76 @46530 has 4 MA's), (99, 46437), (122, 46365), (125, 46347), (138, 46281), (152, 46176), (158, 46116), (159, 46113), (169, 46026), (170, 46005), (171, 46002),

Gene: Burger\_76 Start: 46748, Stop: 46164, Start Num: 75

Candidate Starts for Burger\_76:

(48, 46898), (61, 46820), (66, 46799), (Start: 74 @46751 has 27 MA's), (Start: 75 @46748 has 87 MA's), (99, 46643), (122, 46571), (125, 46553), (138, 46487), (152, 46382), (158, 46322), (159, 46319), (169, 46232), (170, 46211),

Gene: Caelakin\_76 Start: 46748, Stop: 46164, Start Num: 75

Candidate Starts for Caelakin\_76:

(48, 46898), (61, 46820), (66, 46799), (Start: 74 @46751 has 27 MA's), (Start: 75 @46748 has 87 MA's), (99, 46643), (122, 46571), (125, 46553), (138, 46487), (158, 46322), (159, 46319), (169, 46232), (170, 46211),

Gene: CentreCat\_78 Start: 46788, Stop: 46204, Start Num: 75

Candidate Starts for CentreCat\_78:

(48, 46938), (61, 46860), (66, 46839), (Start: 74 @46791 has 27 MA's), (Start: 75 @46788 has 87 MA's), (99, 46683), (122, 46611), (125, 46593), (138, 46527), (158, 46362), (159, 46359), (169, 46272), (170, 46251),

Gene: Cerulean\_80 Start: 47186, Stop: 46602, Start Num: 75

Candidate Starts for Cerulean\_80:

(48, 47336), (61, 47258), (66, 47237), (Start: 74 @47189 has 27 MA's), (Start: 75 @47186 has 87 MA's), (99, 47081), (122, 47009), (125, 46991), (138, 46925), (158, 46760), (159, 46757), (169, 46670), (170, 46649),

Gene: ChampagnePapi\_81 Start: 47188, Stop: 46604, Start Num: 75

Candidate Starts for ChampagnePapi\_81:

(48, 47338), (61, 47260), (66, 47239), (Start: 74 @47191 has 27 MA's), (Start: 75 @47188 has 87 MA's), (99, 47083), (122, 47011), (125, 46993), (138, 46927), (158, 46762), (159, 46759), (169, 46672), (170, 46651),

Gene: Chaph\_78 Start: 46759, Stop: 46175, Start Num: 75

Candidate Starts for Chaph\_78:

(48, 46909), (61, 46831), (66, 46810), (Start: 74 @46762 has 27 MA's), (Start: 75 @46759 has 87 MA's), (99, 46654), (122, 46582), (123, 46576), (125, 46564), (138, 46498), (158, 46333), (159, 46330), (169, 46243), (170, 46222),

Gene: Chickaboom\_46 Start: 27783, Stop: 28385, Start Num: 98

Candidate Starts for Chickaboom\_46:

(Start: 43 @27504 has 2 MA's), (55, 27585), (61, 27621), (70, 27669), (98, 27783), (126, 27996), (127, 28002), (128, 28005), (134, 28068), (149, 28170), (158, 28245), (159, 28248), (172, 28365),

Gene: Cici\_75 Start: 46555, Stop: 45971, Start Num: 75

Candidate Starts for Cici\_75:

(48, 46705), (61, 46627), (66, 46606), (Start: 74 @46558 has 27 MA's), (Start: 75 @46555 has 87 MA's), (Start: 76 @46543 has 4 MA's), (99, 46450), (122, 46378), (125, 46360), (138, 46294), (152, 46189), (158, 46129), (159, 46126), (169, 46039), (170, 46018), (175, 45982),

Gene: Cintron\_78 Start: 46867, Stop: 46280, Start Num: 74

Candidate Starts for Cintron\_78:

(48, 47014), (61, 46936), (66, 46915), (Start: 74 @46867 has 27 MA's), (Start: 75 @46864 has 87 MA's), (99, 46759), (122, 46687), (125, 46669), (138, 46603), (152, 46498), (158, 46438), (159, 46435), (169, 46348), (170, 46327), (175, 46291),

Gene: Citius\_78 Start: 46769, Stop: 46185, Start Num: 75

Candidate Starts for Citius\_78:

(48, 46919), (61, 46841), (66, 46820), (Start: 74 @46772 has 27 MA's), (Start: 75 @46769 has 87 MA's), (99, 46664), (122, 46592), (125, 46574), (138, 46508), (158, 46343), (159, 46340), (169, 46253), (170, 46232),

Gene: Cocoaberry\_78 Start: 46749, Stop: 46165, Start Num: 75

Candidate Starts for Cocoaberry\_78:

(48, 46899), (61, 46821), (66, 46800), (Start: 74 @46752 has 27 MA's), (Start: 75 @46749 has 87 MA's), (99, 46644), (122, 46572), (125, 46554), (138, 46488), (152, 46383), (158, 46323), (159, 46320), (169, 46233), (170, 46212),

Gene: Commander\_76 Start: 46746, Stop: 46162, Start Num: 75

Candidate Starts for Commander\_76:

(48, 46896), (61, 46818), (66, 46797), (Start: 74 @46749 has 27 MA's), (Start: 75 @46746 has 87 MA's), (99, 46641), (122, 46569), (125, 46551), (138, 46485), (152, 46380), (158, 46320), (159, 46317), (169, 46230), (170, 46209),

Gene: Connomayer\_78 Start: 46751, Stop: 46164, Start Num: 74

Candidate Starts for Connomayer\_78:

(48, 46898), (61, 46820), (66, 46799), (Start: 74 @46751 has 27 MA's), (Start: 75 @46748 has 87 MA's), (99, 46643), (122, 46571), (125, 46553), (138, 46487), (152, 46382), (158, 46322), (159, 46319), (169, 46232), (170, 46211),

Gene: Datway\_75 Start: 46559, Stop: 45975, Start Num: 75

Candidate Starts for Datway\_75:

(48, 46709), (61, 46631), (66, 46610), (Start: 74 @46562 has 27 MA's), (Start: 75 @46559 has 87 MA's), (99, 46454), (122, 46382), (125, 46364), (138, 46298), (152, 46193), (158, 46133), (159, 46130), (169, 46043), (170, 46022),

Gene: Deano\_75 Start: 46756, Stop: 46172, Start Num: 75

Candidate Starts for Deano\_75:

(48, 46906), (61, 46828), (66, 46807), (Start: 74 @46759 has 27 MA's), (Start: 75 @46756 has 87 MA's), (99, 46651), (122, 46579), (125, 46561), (138, 46495), (158, 46330), (159, 46327), (169, 46240), (170, 46219),

Gene: Dhanush\_78 Start: 46751, Stop: 46167, Start Num: 75

Candidate Starts for Dhanush\_78:

(48, 46901), (61, 46823), (66, 46802), (Start: 74 @46754 has 27 MA's), (Start: 75 @46751 has 87 MA's), (99, 46646), (122, 46574), (123, 46568), (125, 46556), (138, 46490), (158, 46325), (159, 46322), (169, 46235), (170, 46214),

Gene: DirtyDunning\_77 Start: 46760, Stop: 46176, Start Num: 75

Candidate Starts for DirtyDunning\_77:

(48, 46910), (61, 46832), (66, 46811), (Start: 74 @46763 has 27 MA's), (Start: 75 @46760 has 87 MA's), (99, 46655), (122, 46583), (125, 46565), (138, 46499), (152, 46394), (158, 46334), (159, 46331), (169, 46244), (170, 46223),

Gene: Druantia\_77 Start: 46751, Stop: 46167, Start Num: 75

Candidate Starts for Druantia\_77:

(48, 46901), (61, 46823), (66, 46802), (Start: 74 @46754 has 27 MA's), (Start: 75 @46751 has 87 MA's), (99, 46646), (122, 46574), (125, 46556), (138, 46490), (158, 46325), (159, 46322), (169, 46235), (170, 46214),

Gene: Eagle\_77 Start: 46810, Stop: 46226, Start Num: 75

Candidate Starts for Eagle\_77:

(48, 46960), (61, 46882), (66, 46861), (Start: 74 @46813 has 27 MA's), (Start: 75 @46810 has 87 MA's), (99, 46705), (122, 46633), (125, 46615), (138, 46549), (158, 46384), (159, 46381), (169, 46294), (170, 46273),

Gene: Eapen\_78 Start: 46743, Stop: 46159, Start Num: 75

Candidate Starts for Eapen\_78:

(48, 46893), (61, 46815), (66, 46794), (Start: 74 @46746 has 27 MA's), (Start: 75 @46743 has 87 MA's), (99, 46638), (122, 46566), (125, 46548), (138, 46482), (152, 46377), (158, 46317), (159, 46314), (169, 46227), (170, 46206),

Gene: Eros\_78 Start: 46750, Stop: 46166, Start Num: 75

Candidate Starts for Eros\_78:

(48, 46900), (61, 46822), (66, 46801), (Start: 74 @46753 has 27 MA's), (Start: 75 @46750 has 87 MA's), (99, 46645), (122, 46573), (125, 46555), (138, 46489), (152, 46384), (158, 46324), (159, 46321), (169, 46234), (170, 46213),

Gene: Euratis\_34 Start: 26257, Stop: 26847, Start Num: 75

Candidate Starts for Euratis\_34:

(25, 25936), (35, 26032), (38, 26047), (52, 26125), (61, 26185), (68, 26221), (Start: 75 @26257 has 87 MA's), (108, 26392), (130, 26482), (136, 26530), (146, 26587), (154, 26635), (156, 26656), (158, 26686), (159, 26689), (161, 26695), (162, 26710), (167, 26767), (172, 26803), (174, 26815), (176, 26836),

Gene: Eurydice\_79 Start: 46788, Stop: 46201, Start Num: 74

Candidate Starts for Eurydice\_79:

(48, 46935), (61, 46857), (66, 46836), (Start: 74 @46788 has 27 MA's), (Start: 75 @46785 has 87 MA's), (99, 46680), (122, 46608), (125, 46590), (138, 46524), (158, 46359), (159, 46356), (169, 46269), (170, 46248),

Gene: Float294\_61 Start: 49716, Stop: 49099, Start Num: 82

Candidate Starts for Float294\_61:

(15, 50178), (20, 50121), (21, 50109), (30, 50025), (59, 49830), (61, 49815), (65, 49797), (71, 49761), (Start: 82 @49716 has 1 MA's), (94, 49653), (96, 49638), (97, 49632), (100, 49617), (139, 49413), (140, 49386), (143, 49377), (144, 49371), (154, 49287), (158, 49236), (159, 49233), (167, 49155), (170, 49128),

Gene: Flux\_79 Start: 46746, Stop: 46162, Start Num: 75

Candidate Starts for Flux\_79:

(48, 46896), (61, 46818), (66, 46797), (Start: 74 @46749 has 27 MA's), (Start: 75 @46746 has 87 MA's), (99, 46641), (122, 46569), (123, 46563), (125, 46551), (138, 46485), (152, 46380), (158, 46320), (159, 46317), (169, 46230), (170, 46209),

Gene: Gadost\_78 Start: 46749, Stop: 46165, Start Num: 75

Candidate Starts for Gadost\_78:

(48, 46899), (61, 46821), (66, 46800), (Start: 74 @46752 has 27 MA's), (Start: 75 @46749 has 87 MA's), (99, 46644), (122, 46572), (125, 46554), (138, 46488), (152, 46383), (158, 46323), (159, 46320), (169, 46233), (170, 46212),

Gene: Geodirt\_4 Start: 2785, Stop: 3651, Start Num: 24

Candidate Starts for Geodirt\_4:

(Start: 24 @2785 has 1 MA's), (28, 2821), (31, 2884), (34, 2899), (38, 2920), (42, 2938), (60, 3049), (62, 3064), (84, 3181), (158, 3505), (159, 3508), (160, 3511), (170, 3589),

Gene: HamSlice\_74 Start: 46747, Stop: 46163, Start Num: 75

Candidate Starts for HamSlice\_74:

(48, 46897), (61, 46819), (66, 46798), (Start: 74 @46750 has 27 MA's), (Start: 75 @46747 has 87 MA's), (99, 46642), (122, 46570), (125, 46552), (138, 46486), (152, 46381), (158, 46321), (159, 46318), (169, 46231), (170, 46210),

Gene: Happiness\_77 Start: 46771, Stop: 46187, Start Num: 75

Candidate Starts for Happiness\_77:

(48, 46921), (61, 46843), (66, 46822), (Start: 74 @46774 has 27 MA's), (Start: 75 @46771 has 87 MA's), (99, 46666), (122, 46594), (125, 46576), (138, 46510), (152, 46405), (158, 46345), (159,

46342), (169, 46255), (170, 46234),

Gene: Heather\_36 Start: 27272, Stop: 27856, Start Num: 75

Candidate Starts for Heather\_36:

(22, 26909), (32, 27035), (35, 27047), (38, 27062), (40, 27071), (61, 27200), (Start: 75 @27272 has 87 MA's), (132, 27518), (136, 27545), (159, 27704), (161, 27710), (162, 27725), (167, 27782), (172, 27818), (174, 27830),

Gene: Holli\_77 Start: 46541, Stop: 45954, Start Num: 74

Candidate Starts for Holli\_77:

(48, 46688), (61, 46610), (66, 46589), (Start: 74 @46541 has 27 MA's), (Start: 75 @46538 has 87 MA's), (99, 46433), (122, 46361), (125, 46343), (138, 46277), (158, 46112), (159, 46109), (169, 46022), (170, 46001),

Gene: Houdini22\_77 Start: 46749, Stop: 46165, Start Num: 75

Candidate Starts for Houdini22\_77:

(48, 46899), (61, 46821), (66, 46800), (Start: 74 @46752 has 27 MA's), (Start: 75 @46749 has 87 MA's), (99, 46644), (122, 46572), (125, 46554), (138, 46488), (152, 46383), (158, 46323), (159, 46320), (169, 46233), (170, 46212),

Gene: ICleared\_77 Start: 46816, Stop: 46232, Start Num: 75

Candidate Starts for ICleared\_77:

(48, 46966), (61, 46888), (66, 46867), (Start: 74 @46819 has 27 MA's), (Start: 75 @46816 has 87 MA's), (99, 46711), (122, 46639), (125, 46621), (138, 46555), (152, 46450), (158, 46390), (159, 46387), (169, 46300), (170, 46279),

Gene: Iceman\_76 Start: 47038, Stop: 46454, Start Num: 75

Candidate Starts for Iceman\_76:

(48, 47188), (61, 47110), (66, 47089), (Start: 74 @47041 has 27 MA's), (Start: 75 @47038 has 87 MA's), (99, 46933), (122, 46861), (125, 46843), (138, 46777), (152, 46672), (158, 46612), (159, 46609), (169, 46522), (170, 46501),

Gene: Iracema64\_78 Start: 47012, Stop: 46428, Start Num: 75

Candidate Starts for Iracema64\_78:

(48, 47162), (61, 47084), (66, 47063), (Start: 74 @47015 has 27 MA's), (Start: 75 @47012 has 87 MA's), (99, 46907), (122, 46835), (125, 46817), (138, 46751), (158, 46586), (159, 46583), (169, 46496), (170, 46475),

Gene: Jamun\_40 Start: 27823, Stop: 28545, Start Num: 85

Candidate Starts for Jamun\_40:

(Start: 43 @27547 has 2 MA's), (54, 27613), (55, 27628), (61, 27664), (70, 27712), (72, 27724), (73, 27730), (Start: 85 @27823 has 5 MA's), (90, 27841), (92, 27871), (98, 27943), (111, 28057), (115, 28069), (126, 28156), (127, 28162), (128, 28165), (134, 28228), (149, 28330), (158, 28405), (159, 28408), (172, 28525),

Gene: JetBlade\_79 Start: 46779, Stop: 46192, Start Num: 74

Candidate Starts for JetBlade\_79:

(48, 46926), (61, 46848), (66, 46827), (Start: 74 @46779 has 27 MA's), (Start: 75 @46776 has 87 MA's), (99, 46671), (122, 46599), (125, 46581), (138, 46515), (158, 46350), (159, 46347), (169, 46260), (170, 46239),

Gene: Jinkies\_3 Start: 2349, Stop: 3125, Start Num: 39

Candidate Starts for Jinkies\_3:

(Start: 39 @2349 has 1 MA's), (55, 2442), (56, 2448), (61, 2478), (64, 2493), (79, 2571), (107, 2616), (115, 2649), (117, 2670), (118, 2676), (119, 2685), (121, 2700), (135, 2784), (137, 2793), (149, 2871), (158, 2952), (159, 2955), (165, 3015), (172, 3072),

Gene: Juno112\_43 Start: 27172, Stop: 27969, Start Num: 43

Candidate Starts for Juno112\_43:

(Start: 43 @27172 has 2 MA's), (54, 27238), (55, 27253), (61, 27289), (70, 27337), (72, 27349), (73, 27355), (126, 27571), (127, 27577), (149, 27745), (158, 27820), (159, 27823), (170, 27931), (172, 27940),

Gene: KHumphrey\_42 Start: 27171, Stop: 27866, Start Num: 43

Candidate Starts for KHumphrey\_42:

(Start: 43 @27171 has 2 MA's), (47, 27210), (54, 27237), (62, 27291), (64, 27303), (70, 27336), (102, 27399), (113, 27474), (126, 27564), (127, 27570), (129, 27591), (149, 27642), (158, 27717), (159, 27720), (168, 27804), (170, 27828), (172, 27837), (174, 27849),

Gene: Kamy\_77 Start: 46751, Stop: 46167, Start Num: 75

Candidate Starts for Kamy\_77:

(48, 46901), (61, 46823), (66, 46802), (Start: 74 @46754 has 27 MA's), (Start: 75 @46751 has 87 MA's), (99, 46646), (122, 46574), (125, 46556), (138, 46490), (158, 46325), (159, 46322), (169, 46235), (170, 46214),

Gene: Katalie136\_75 Start: 46530, Stop: 45958, Start Num: 76

Candidate Starts for Katalie136\_75:

(48, 46692), (61, 46614), (66, 46593), (Start: 74 @46545 has 27 MA's), (Start: 75 @46542 has 87 MA's), (Start: 76 @46530 has 4 MA's), (99, 46437), (122, 46365), (125, 46347), (138, 46281), (152, 46176), (158, 46116), (159, 46113), (169, 46026), (170, 46005), (175, 45969),

Gene: Kingmustik0402\_78 Start: 46740, Stop: 46153, Start Num: 74

Candidate Starts for Kingmustik0402\_78:

(48, 46887), (61, 46809), (66, 46788), (Start: 74 @46740 has 27 MA's), (Start: 75 @46737 has 87 MA's), (99, 46632), (122, 46560), (125, 46542), (138, 46476), (158, 46311), (159, 46308), (169, 46221), (170, 46200),

Gene: Koreni\_77 Start: 46432, Stop: 45845, Start Num: 74

Candidate Starts for Koreni\_77:

(48, 46579), (61, 46501), (66, 46480), (Start: 74 @46432 has 27 MA's), (Start: 75 @46429 has 87 MA's), (99, 46324), (122, 46252), (125, 46234), (138, 46168), (152, 46063), (158, 46003), (159, 46000), (169, 45913), (170, 45892),

Gene: Kremtemulon\_72 Start: 46631, Stop: 46044, Start Num: 74

Candidate Starts for Kremtemulon\_72:

(48, 46778), (61, 46700), (66, 46679), (Start: 74 @46631 has 27 MA's), (Start: 75 @46628 has 87 MA's), (99, 46523), (122, 46451), (125, 46433), (138, 46367), (152, 46262), (158, 46202), (159, 46199), (169, 46112), (170, 46091), (175, 46055),

Gene: Kyee\_78 Start: 46743, Stop: 46159, Start Num: 75

Candidate Starts for Kyee\_78:

(48, 46893), (61, 46815), (66, 46794), (Start: 74 @46746 has 27 MA's), (Start: 75 @46743 has 87 MA's), (99, 46638), (122, 46566), (125, 46548), (138, 46482), (152, 46377), (158, 46317), (159, 46314), (169, 46227), (170, 46206),

Gene: LHTSCC\_80 Start: 47191, Stop: 46604, Start Num: 74

Candidate Starts for LHTSCC\_80:

(48, 47338), (61, 47260), (66, 47239), (Start: 74 @47191 has 27 MA's), (Start: 75 @47188 has 87 MA's), (99, 47083), (122, 47011), (125, 46993), (138, 46927), (152, 46822), (158, 46762), (159, 46759), (169, 46672), (170, 46651),

Gene: LappelDuVide\_74 Start: 46748, Stop: 46164, Start Num: 75

Candidate Starts for LappelDuVide\_74:

(48, 46898), (61, 46820), (66, 46799), (Start: 74 @46751 has 27 MA's), (Start: 75 @46748 has 87 MA's), (99, 46643), (122, 46571), (125, 46553), (138, 46487), (152, 46382), (158, 46322), (159, 46319), (169, 46232), (170, 46211),

Gene: Lemur\_78 Start: 46745, Stop: 46161, Start Num: 75

Candidate Starts for Lemur\_78:

(48, 46895), (61, 46817), (66, 46796), (Start: 74 @46748 has 27 MA's), (Start: 75 @46745 has 87 MA's), (99, 46640), (122, 46568), (123, 46562), (125, 46550), (138, 46484), (152, 46379), (158, 46319), (159, 46316), (169, 46229), (170, 46208),

Gene: Leona\_42 Start: 27237, Stop: 28046, Start Num: 43

Candidate Starts for Leona\_42:

(Start: 43 @27237 has 2 MA's), (54, 27303), (55, 27318), (61, 27354), (70, 27402), (72, 27414), (73, 27420), (127, 27654), (128, 27657), (141, 27759), (149, 27822), (158, 27897), (159, 27900), (172, 28017),

Gene: Lilbooboo\_33 Start: 26272, Stop: 26859, Start Num: 75

Candidate Starts for Lilbooboo\_33:

(18, 25882), (19, 25885), (25, 25951), (27, 25963), (38, 26062), (61, 26200), (Start: 75 @26272 has 87 MA's), (97, 26374), (108, 26407), (136, 26545), (146, 26602), (150, 26629), (153, 26647), (156, 26671), (159, 26704), (163, 26734), (172, 26818), (174, 26830),

Gene: LittleGuy\_78 Start: 46633, Stop: 46049, Start Num: 75

Candidate Starts for LittleGuy\_78:

(48, 46783), (61, 46705), (66, 46684), (Start: 74 @46636 has 27 MA's), (Start: 75 @46633 has 87 MA's), (99, 46528), (122, 46456), (125, 46438), (138, 46372), (152, 46267), (158, 46207), (159, 46204), (169, 46117), (170, 46096),

Gene: LochMonster\_79 Start: 46985, Stop: 46401, Start Num: 75

Candidate Starts for LochMonster\_79:

(48, 47135), (61, 47057), (66, 47036), (Start: 74 @46988 has 27 MA's), (Start: 75 @46985 has 87 MA's), (99, 46880), (122, 46808), (125, 46790), (138, 46724), (158, 46559), (159, 46556), (169, 46469), (170, 46448),

Gene: Lorenzo\_78 Start: 46746, Stop: 46162, Start Num: 75

Candidate Starts for Lorenzo\_78:

(48, 46896), (61, 46818), (66, 46797), (Start: 74 @46749 has 27 MA's), (Start: 75 @46746 has 87 MA's), (99, 46641), (122, 46569), (125, 46551), (138, 46485), (152, 46380), (158, 46320), (159, 46317), (169, 46230), (170, 46209),

Gene: Lunsford\_75 Start: 46741, Stop: 46157, Start Num: 75

Candidate Starts for Lunsford\_75:

(48, 46891), (61, 46813), (66, 46792), (Start: 74 @46744 has 27 MA's), (Start: 75 @46741 has 87 MA's), (99, 46636), (122, 46564), (125, 46546), (138, 46480), (158, 46315), (159, 46312), (169, 46225), (170, 46204),

Gene: Maverick\_77 Start: 46745, Stop: 46161, Start Num: 75

Candidate Starts for Maverick\_77:

(48, 46895), (61, 46817), (66, 46796), (Start: 74 @46748 has 27 MA's), (Start: 75 @46745 has 87 MA's), (99, 46640), (122, 46568), (125, 46550), (138, 46484), (152, 46379), (158, 46319), (159, 46316), (169, 46229), (170, 46208),

Gene: Maxo\_80 Start: 46754, Stop: 46167, Start Num: 74

Candidate Starts for Maxo\_80:

(48, 46901), (61, 46823), (66, 46802), (Start: 74 @46754 has 27 MA's), (Start: 75 @46751 has 87 MA's), (99, 46646), (122, 46574), (125, 46556), (138, 46490), (158, 46325), (159, 46322), (169, 46235), (170, 46214),

Gene: Mazhar510\_78 Start: 46749, Stop: 46162, Start Num: 74

Candidate Starts for Mazhar510\_78:

(48, 46896), (61, 46818), (66, 46797), (Start: 74 @46749 has 27 MA's), (Start: 75 @46746 has 87 MA's), (99, 46641), (122, 46569), (125, 46551), (138, 46485), (152, 46380), (158, 46320), (159, 46317), (169, 46230), (170, 46209),

Gene: McKinley\_5 Start: 3198, Stop: 3983, Start Num: 57

Candidate Starts for McKinley\_5:

(49, 3156), (51, 3165), (Start: 57 @3198 has 1 MA's), (58, 3204), (62, 3228), (80, 3327), (120, 3495), (122, 3516), (126, 3537), (158, 3786), (159, 3789), (160, 3792), (162, 3810), (166, 3873), (170, 3921),

Gene: Medusa\_77 Start: 46761, Stop: 46177, Start Num: 75

Candidate Starts for Medusa\_77:

(48, 46911), (61, 46833), (66, 46812), (Start: 74 @46764 has 27 MA's), (Start: 75 @46761 has 87 MA's), (99, 46656), (122, 46584), (125, 46566), (138, 46500), (158, 46335), (159, 46332), (169, 46245), (170, 46224),

Gene: MeeZee\_77 Start: 46742, Stop: 46158, Start Num: 75

Candidate Starts for MeeZee\_77:

(48, 46892), (61, 46814), (66, 46793), (Start: 74 @46745 has 27 MA's), (Start: 75 @46742 has 87 MA's), (99, 46637), (122, 46565), (125, 46547), (138, 46481), (152, 46376), (158, 46316), (159, 46313), (169, 46226), (170, 46205),

Gene: Melvin\_80 Start: 46743, Stop: 46159, Start Num: 75

Candidate Starts for Melvin\_80:

(48, 46893), (61, 46815), (66, 46794), (Start: 74 @46746 has 27 MA's), (Start: 75 @46743 has 87 MA's), (99, 46638), (122, 46566), (123, 46560), (125, 46548), (138, 46482), (152, 46377), (158, 46317), (159, 46314), (169, 46227), (170, 46206),

Gene: Millski\_77 Start: 46749, Stop: 46165, Start Num: 75

Candidate Starts for Millski\_77:

(48, 46899), (61, 46821), (66, 46800), (Start: 74 @46752 has 27 MA's), (Start: 75 @46749 has 87 MA's), (99, 46644), (122, 46572), (125, 46554), (138, 46488), (152, 46383), (158, 46323), (159, 46320), (169, 46233), (170, 46212),

Gene: Miramae\_78 Start: 46572, Stop: 45991, Start Num: 75

Candidate Starts for Miramae\_78:

(48, 46722), (61, 46644), (66, 46623), (71, 46590), (Start: 75 @46572 has 87 MA's), (89, 46503), (91, 46497), (95, 46485), (138, 46314), (158, 46149), (159, 46146), (169, 46059), (170, 46038), (175, 46002),



Gene: Morpher26\_75 Start: 46563, Stop: 45979, Start Num: 75

Candidate Starts for Morpher26\_75:

(48, 46713), (61, 46635), (66, 46614), (Start: 74 @46566 has 27 MA's), (Start: 75 @46563 has 87 MA's), (Start: 76 @46551 has 4 MA's), (99, 46458), (122, 46386), (125, 46368), (138, 46302), (152, 46197), (158, 46137), (159, 46134), (169, 46047), (170, 46026), (175, 45990),

Gene: Morrow\_80 Start: 46788, Stop: 46204, Start Num: 75

Candidate Starts for Morrow\_80:

(48, 46938), (61, 46860), (66, 46839), (Start: 74 @46791 has 27 MA's), (Start: 75 @46788 has 87 MA's), (99, 46683), (122, 46611), (125, 46593), (158, 46362), (159, 46359), (169, 46272), (170, 46251),

Gene: Nebs\_79 Start: 46788, Stop: 46204, Start Num: 75

Candidate Starts for Nebs\_79:

(48, 46938), (61, 46860), (66, 46839), (Start: 74 @46791 has 27 MA's), (Start: 75 @46788 has 87 MA's), (99, 46683), (122, 46611), (125, 46593), (138, 46527), (158, 46362), (159, 46359), (169, 46272), (170, 46251),

Gene: Nemo27\_77 Start: 46744, Stop: 46160, Start Num: 75

Candidate Starts for Nemo27\_77:

(48, 46894), (61, 46816), (66, 46795), (Start: 74 @46747 has 27 MA's), (Start: 75 @46744 has 87 MA's), (99, 46639), (122, 46567), (125, 46549), (138, 46483), (152, 46378), (158, 46318), (159, 46315), (169, 46228), (170, 46207),

Gene: NorthStar\_75 Start: 46748, Stop: 46164, Start Num: 75

Candidate Starts for NorthStar\_75:

(48, 46898), (61, 46820), (66, 46799), (Start: 74 @46751 has 27 MA's), (Start: 75 @46748 has 87 MA's), (99, 46643), (122, 46571), (123, 46565), (125, 46553), (138, 46487), (152, 46382), (158, 46322), (159, 46319), (169, 46232), (170, 46211),

Gene: NotAPhaseMom\_77 Start: 46749, Stop: 46165, Start Num: 75

Candidate Starts for NotAPhaseMom\_77:

(48, 46899), (61, 46821), (66, 46800), (Start: 74 @46752 has 27 MA's), (Start: 75 @46749 has 87 MA's), (99, 46644), (122, 46572), (125, 46554), (138, 46488), (152, 46383), (158, 46323), (159, 46320), (169, 46233), (170, 46212),

Gene: Nyxis\_77 Start: 46630, Stop: 46043, Start Num: 74

Candidate Starts for Nyxis\_77:

(48, 46777), (61, 46699), (66, 46678), (Start: 74 @46630 has 27 MA's), (Start: 75 @46627 has 87 MA's), (99, 46522), (122, 46450), (125, 46432), (138, 46366), (158, 46201), (159, 46198), (169, 46111), (170, 46090),

Gene: OKaNui\_77 Start: 46799, Stop: 46215, Start Num: 75

Candidate Starts for OKaNui\_77:

(48, 46949), (61, 46871), (66, 46850), (Start: 74 @46802 has 27 MA's), (Start: 75 @46799 has 87 MA's), (99, 46694), (122, 46622), (125, 46604), (138, 46538), (152, 46433), (158, 46373), (159, 46370), (169, 46283), (170, 46262),

Gene: Obama12\_79 Start: 47172, Stop: 46588, Start Num: 75

Candidate Starts for Obama12\_79:

(48, 47322), (61, 47244), (66, 47223), (Start: 74 @47175 has 27 MA's), (Start: 75 @47172 has 87 MA's), (99, 47067), (122, 46995), (125, 46977), (138, 46911), (152, 46806), (158, 46746), (159, 46743), (169, 46656), (170, 46635),

Gene: Ohfah\_79 Start: 46791, Stop: 46204, Start Num: 74

Candidate Starts for Ohfah\_79:

(48, 46938), (61, 46860), (66, 46839), (Start: 74 @46791 has 27 MA's), (Start: 75 @46788 has 87 MA's), (99, 46683), (122, 46611), (125, 46593), (138, 46527), (158, 46362), (159, 46359), (169, 46272), (170, 46251),

Gene: Orcanus\_41 Start: 28182, Stop: 28904, Start Num: 85

Candidate Starts for Orcanus\_41:

(Start: 43 @27906 has 2 MA's), (55, 27987), (61, 28023), (70, 28071), (73, 28089), (Start: 85 @28182 has 5 MA's), (90, 28200), (92, 28230), (98, 28302), (124, 28503), (126, 28515), (127, 28521), (128, 28524), (134, 28587), (149, 28689), (158, 28764), (159, 28767), (172, 28884),

Gene: Peaches\_76 Start: 46747, Stop: 46163, Start Num: 75

Candidate Starts for Peaches\_76:

(48, 46897), (61, 46819), (66, 46798), (Start: 74 @46750 has 27 MA's), (Start: 75 @46747 has 87 MA's), (99, 46642), (122, 46570), (125, 46552), (138, 46486), (152, 46381), (158, 46321), (159, 46318), (169, 46231), (170, 46210),

Gene: Perplexer\_75 Start: 46531, Stop: 45959, Start Num: 76

Candidate Starts for Perplexer\_75:

(48, 46693), (61, 46615), (66, 46594), (Start: 74 @46546 has 27 MA's), (Start: 75 @46543 has 87 MA's), (Start: 76 @46531 has 4 MA's), (99, 46438), (122, 46366), (125, 46348), (138, 46282), (152, 46177), (158, 46117), (159, 46114), (169, 46027), (170, 46006),

Gene: PeterPeter\_78 Start: 46742, Stop: 46158, Start Num: 75

Candidate Starts for PeterPeter\_78:

(48, 46892), (61, 46814), (66, 46793), (Start: 74 @46745 has 27 MA's), (Start: 75 @46742 has 87 MA's), (99, 46637), (122, 46565), (125, 46547), (138, 46481), (152, 46376), (158, 46316), (159, 46313), (169, 46226), (170, 46205),

Gene: PetiteSangsue\_75 Start: 46546, Stop: 45962, Start Num: 75

Candidate Starts for PetiteSangsue\_75:

(48, 46696), (61, 46618), (66, 46597), (Start: 74 @46549 has 27 MA's), (Start: 75 @46546 has 87 MA's), (Start: 76 @46534 has 4 MA's), (99, 46441), (122, 46369), (125, 46351), (138, 46285), (152, 46180), (158, 46120), (159, 46117), (169, 46030), (170, 46009),

Gene: Phacado\_78 Start: 46744, Stop: 46160, Start Num: 75

Candidate Starts for Phacado\_78:

(48, 46894), (61, 46816), (66, 46795), (Start: 74 @46747 has 27 MA's), (Start: 75 @46744 has 87 MA's), (99, 46639), (122, 46567), (125, 46549), (138, 46483), (152, 46378), (158, 46318), (159, 46315), (169, 46228), (170, 46207),

Gene: Phelipe\_79 Start: 46788, Stop: 46204, Start Num: 75

Candidate Starts for Phelipe\_79:

(48, 46938), (61, 46860), (66, 46839), (Start: 74 @46791 has 27 MA's), (Start: 75 @46788 has 87 MA's), (99, 46683), (122, 46611), (125, 46593), (138, 46527), (158, 46362), (159, 46359), (169, 46272), (170, 46251),

Gene: Phighter1804\_78 Start: 46809, Stop: 46225, Start Num: 75

Candidate Starts for Phighter1804\_78:

(48, 46959), (61, 46881), (66, 46860), (Start: 74 @46812 has 27 MA's), (Start: 75 @46809 has 87 MA's), (99, 46704), (122, 46632), (125, 46614), (138, 46548), (152, 46443), (158, 46383), (159,

46380), (169, 46293), (170, 46272),

Gene: PhluffyCoco\_43 Start: 27168, Stop: 28064, Start Num: 43

Candidate Starts for PhluffyCoco\_43:

(Start: 43 @27168 has 2 MA's), (54, 27234), (55, 27249), (61, 27285), (70, 27333), (72, 27345), (73, 27351), (78, 27375), (Start: 85 @27444 has 5 MA's), (90, 27462), (126, 27666), (127, 27672), (149, 27840), (158, 27915), (159, 27918), (170, 28026), (172, 28035),

Gene: Phontbonne\_78 Start: 46643, Stop: 46059, Start Num: 75

Candidate Starts for Phontbonne\_78:

(48, 46793), (61, 46715), (66, 46694), (Start: 74 @46646 has 27 MA's), (Start: 75 @46643 has 87 MA's), (99, 46538), (122, 46466), (125, 46448), (138, 46382), (158, 46217), (159, 46214), (169, 46127), (170, 46106),

Gene: Pipcraft\_74 Start: 46749, Stop: 46165, Start Num: 75

Candidate Starts for Pipcraft\_74:

(48, 46899), (61, 46821), (66, 46800), (Start: 74 @46752 has 27 MA's), (Start: 75 @46749 has 87 MA's), (99, 46644), (122, 46572), (123, 46566), (125, 46554), (138, 46488), (152, 46383), (158, 46323), (159, 46320), (169, 46233), (170, 46212),

Gene: Polymorphads\_79 Start: 46772, Stop: 46185, Start Num: 74

Candidate Starts for Polymorphads\_79:

(48, 46919), (61, 46841), (66, 46820), (Start: 74 @46772 has 27 MA's), (Start: 75 @46769 has 87 MA's), (99, 46664), (122, 46592), (125, 46574), (138, 46508), (152, 46403), (158, 46343), (159, 46340), (169, 46253), (170, 46232),

Gene: Pumbaa\_78 Start: 46696, Stop: 46109, Start Num: 74

Candidate Starts for Pumbaa\_78:

(48, 46843), (61, 46765), (66, 46744), (Start: 74 @46696 has 27 MA's), (Start: 75 @46693 has 87 MA's), (99, 46588), (122, 46516), (125, 46498), (138, 46432), (152, 46327), (158, 46267), (159, 46264), (169, 46177), (170, 46156),

Gene: RedFox\_43 Start: 27443, Stop: 28063, Start Num: 85

Candidate Starts for RedFox\_43:

(Start: 43 @27167 has 2 MA's), (54, 27233), (55, 27248), (61, 27284), (70, 27332), (72, 27344), (73, 27350), (78, 27374), (Start: 85 @27443 has 5 MA's), (90, 27461), (126, 27665), (127, 27671), (149, 27839), (158, 27914), (159, 27917), (170, 28025), (172, 28034),

Gene: Relief\_77 Start: 46745, Stop: 46161, Start Num: 75

Candidate Starts for Relief\_77:

(48, 46895), (61, 46817), (66, 46796), (Start: 74 @46748 has 27 MA's), (Start: 75 @46745 has 87 MA's), (99, 46640), (122, 46568), (125, 46550), (138, 46484), (152, 46379), (158, 46319), (159, 46316), (169, 46229), (170, 46208),

Gene: RemusLoopin\_35 Start: 27467, Stop: 28051, Start Num: 75

Candidate Starts for RemusLoopin\_35:

(32, 27230), (35, 27242), (38, 27257), (61, 27395), (71, 27449), (Start: 75 @27467 has 87 MA's), (97, 27569), (132, 27713), (136, 27740), (146, 27797), (159, 27899), (162, 27920), (167, 27977), (172, 28013), (174, 28025),

Gene: Romney\_77 Start: 46745, Stop: 46161, Start Num: 75

Candidate Starts for Romney\_77:

(48, 46895), (61, 46817), (66, 46796), (Start: 74 @46748 has 27 MA's), (Start: 75 @46745 has 87 MA's), (99, 46640), (122, 46568), (123, 46562), (125, 46550), (138, 46484), (152, 46379), (158, 46319), (159, 46316), (169, 46229), (170, 46208),

Gene: Roosevelt\_76 Start: 46750, Stop: 46166, Start Num: 75

Candidate Starts for Roosevelt\_76:

(48, 46900), (61, 46822), (66, 46801), (Start: 74 @46753 has 27 MA's), (Start: 75 @46750 has 87 MA's), (99, 46645), (122, 46573), (125, 46555), (138, 46489), (158, 46324), (159, 46321), (169, 46234), (170, 46213),

Gene: Ruin\_78 Start: 46741, Stop: 46157, Start Num: 75

Candidate Starts for Ruin\_78:

(48, 46891), (61, 46813), (66, 46792), (Start: 74 @46744 has 27 MA's), (Start: 75 @46741 has 87 MA's), (99, 46636), (122, 46564), (123, 46558), (125, 46546), (138, 46480), (152, 46375), (158, 46315), (159, 46312), (169, 46225), (170, 46204),

Gene: Sabertooth\_78 Start: 46756, Stop: 46169, Start Num: 74

Candidate Starts for Sabertooth\_78:

(48, 46903), (61, 46825), (66, 46804), (Start: 74 @46756 has 27 MA's), (Start: 75 @46753 has 87 MA's), (99, 46648), (122, 46576), (125, 46558), (138, 46492), (152, 46387), (158, 46327), (159, 46324), (169, 46237), (170, 46216),

Gene: Samora\_35 Start: 26872, Stop: 27459, Start Num: 75

Candidate Starts for Samora\_35:

(25, 26551), (27, 26563), (38, 26662), (61, 26800), (Start: 75 @26872 has 87 MA's), (97, 26974), (131, 27109), (133, 27127), (136, 27145), (152, 27241), (159, 27304), (163, 27334), (172, 27418),

Gene: Samy\_50 Start: 33615, Stop: 34364, Start Num: 41

Candidate Starts for Samy\_50:

(13, 33303), (14, 33345), (18, 33414), (23, 33444), (25, 33483), (Start: 41 @33615 has 1 MA's), (Start: 43 @33618 has 2 MA's), (44, 33621), (61, 33735), (Start: 76 @33819 has 4 MA's), (77, 33822), (106, 33933), (145, 34071), (149, 34122), (155, 34152), (159, 34203), (162, 34224), (165, 34260), (167, 34281), (168, 34284), (173, 34320),

Gene: Scamp\_78 Start: 46750, Stop: 46166, Start Num: 75

Candidate Starts for Scamp\_78:

(48, 46900), (61, 46822), (66, 46801), (Start: 74 @46753 has 27 MA's), (Start: 75 @46750 has 87 MA's), (99, 46645), (122, 46573), (125, 46555), (138, 46489), (152, 46384), (158, 46324), (159, 46321), (169, 46234), (170, 46213),

Gene: Sebastisaurus\_35 Start: 27189, Stop: 27773, Start Num: 75

Candidate Starts for Sebastisaurus\_35:

(32, 26952), (35, 26964), (38, 26979), (61, 27117), (68, 27153), (Start: 75 @27189 has 87 MA's), (97, 27291), (108, 27324), (132, 27435), (136, 27462), (146, 27519), (147, 27534), (153, 27564), (159, 27621), (162, 27642), (172, 27735), (174, 27747),

Gene: Sedona\_6 Start: 4350, Stop: 5051, Start Num: 63

Candidate Starts for Sedona\_6:

(1, 3228), (2, 3420), (3, 3450), (4, 3477), (5, 3513), (6, 3549), (7, 3666), (8, 3678), (9, 3765), (10, 3807), (11, 3819), (12, 3825), (16, 3969), (17, 3993), (26, 4089), (29, 4110), (46, 4245), (Start: 63 @4350 has 1 MA's), (80, 4446), (120, 4614), (122, 4635), (126, 4656), (158, 4905), (159, 4908), (160, 4911), (170, 4989),

Gene: Shaka\_76 Start: 46746, Stop: 46162, Start Num: 75

Candidate Starts for Shaka\_76:

(48, 46896), (61, 46818), (66, 46797), (Start: 74 @46749 has 27 MA's), (Start: 75 @46746 has 87 MA's), (99, 46641), (122, 46569), (125, 46551), (138, 46485), (158, 46320), (159, 46317), (169, 46230), (170, 46209),

Gene: SheldonCooper\_78 Start: 47186, Stop: 46602, Start Num: 75

Candidate Starts for SheldonCooper\_78:

(48, 47336), (61, 47258), (66, 47237), (Start: 74 @47189 has 27 MA's), (Start: 75 @47186 has 87 MA's), (99, 47081), (122, 47009), (125, 46991), (138, 46925), (158, 46760), (159, 46757), (169, 46670), (170, 46649),

Gene: Shygu2\_76 Start: 46692, Stop: 46108, Start Num: 75

Candidate Starts for Shygu2\_76:

(48, 46842), (61, 46764), (66, 46743), (Start: 74 @46695 has 27 MA's), (Start: 75 @46692 has 87 MA's), (Start: 76 @46680 has 4 MA's), (99, 46587), (122, 46515), (125, 46497), (138, 46431), (152, 46326), (158, 46266), (159, 46263), (169, 46176), (170, 46155), (175, 46119),

Gene: Skipitt\_77 Start: 46745, Stop: 46158, Start Num: 74

Candidate Starts for Skipitt\_77:

(48, 46892), (61, 46814), (66, 46793), (Start: 74 @46745 has 27 MA's), (Start: 75 @46742 has 87 MA's), (99, 46637), (122, 46565), (123, 46559), (125, 46547), (138, 46481), (152, 46376), (158, 46316), (159, 46313), (169, 46226), (170, 46205),

Gene: Sparxx\_79 Start: 46747, Stop: 46160, Start Num: 74

Candidate Starts for Sparxx\_79:

(48, 46894), (61, 46816), (66, 46795), (Start: 74 @46747 has 27 MA's), (Start: 75 @46744 has 87 MA's), (99, 46639), (122, 46567), (125, 46549), (138, 46483), (158, 46318), (159, 46315), (169, 46228), (170, 46207),

Gene: Spino\_77 Start: 46748, Stop: 46164, Start Num: 75

Candidate Starts for Spino\_77:

(48, 46898), (61, 46820), (66, 46799), (Start: 74 @46751 has 27 MA's), (Start: 75 @46748 has 87 MA's), (99, 46643), (122, 46571), (125, 46553), (138, 46487), (158, 46322), (159, 46319), (169, 46232), (170, 46211),

Gene: Stasia\_75 Start: 46708, Stop: 46121, Start Num: 74

Candidate Starts for Stasia\_75:

(48, 46855), (61, 46777), (66, 46756), (Start: 74 @46708 has 27 MA's), (Start: 75 @46705 has 87 MA's), (99, 46600), (122, 46528), (125, 46510), (138, 46444), (158, 46279), (159, 46276), (169, 46189), (170, 46168), (175, 46132),

Gene: Taquarus\_77 Start: 46751, Stop: 46167, Start Num: 75

Candidate Starts for Taquarus\_77:

(48, 46901), (61, 46823), (66, 46802), (Start: 74 @46754 has 27 MA's), (Start: 75 @46751 has 87 MA's), (99, 46646), (122, 46574), (125, 46556), (138, 46490), (158, 46325), (159, 46322), (169, 46235), (170, 46214),

Gene: TaylorSipht\_41 Start: 27587, Stop: 28306, Start Num: 85

Candidate Starts for TaylorSipht\_41:

(Start: 43 @27311 has 2 MA's), (55, 27392), (61, 27428), (Start: 85 @27587 has 5 MA's), (90, 27605), (92, 27635), (98, 27707), (127, 27923), (143, 28034), (149, 28091), (158, 28166), (159, 28169), (172, 28286),

Gene: Tinybot\_77 Start: 46778, Stop: 46191, Start Num: 74

Candidate Starts for Tinybot\_77:

(48, 46925), (61, 46847), (66, 46826), (Start: 74 @46778 has 27 MA's), (Start: 75 @46775 has 87 MA's), (99, 46670), (122, 46598), (125, 46580), (138, 46514), (152, 46409), (158, 46349), (159, 46346), (169, 46259), (170, 46238),

Gene: TiroTheta9\_77 Start: 46742, Stop: 46158, Start Num: 75

Candidate Starts for TiroTheta9\_77:

(48, 46892), (61, 46814), (66, 46793), (Start: 74 @46745 has 27 MA's), (Start: 75 @46742 has 87 MA's), (99, 46637), (122, 46565), (125, 46547), (138, 46481), (158, 46316), (159, 46313), (169, 46226), (170, 46205),

Gene: TroyPia\_79 Start: 46786, Stop: 46199, Start Num: 74

Candidate Starts for TroyPia\_79:

(48, 46933), (61, 46855), (66, 46834), (Start: 74 @46786 has 27 MA's), (Start: 75 @46783 has 87 MA's), (99, 46678), (122, 46606), (125, 46588), (138, 46522), (158, 46357), (159, 46354), (169, 46267), (170, 46246),

Gene: TygerBlood\_78 Start: 46751, Stop: 46164, Start Num: 74

Candidate Starts for TygerBlood\_78:

(48, 46898), (61, 46820), (66, 46799), (Start: 74 @46751 has 27 MA's), (Start: 75 @46748 has 87 MA's), (99, 46643), (122, 46571), (125, 46553), (138, 46487), (152, 46382), (158, 46322), (159, 46319), (169, 46232), (170, 46211),

Gene: Ulysses\_77 Start: 46431, Stop: 45847, Start Num: 75

Candidate Starts for Ulysses\_77:

(48, 46581), (61, 46503), (66, 46482), (Start: 74 @46434 has 27 MA's), (Start: 75 @46431 has 87 MA's), (99, 46326), (122, 46254), (125, 46236), (138, 46170), (158, 46005), (159, 46002), (169, 45915), (170, 45894),

Gene: Upyo\_53 Start: 39312, Stop: 38611, Start Num: 87

Candidate Starts for Upyo\_53:

(15, 39840), (20, 39783), (30, 39687), (53, 39534), (59, 39492), (61, 39477), (65, 39459), (71, 39423), (81, 39381), (Start: 87 @39312 has 1 MA's), (88, 39306), (93, 39270), (101, 39198), (109, 39132), (139, 38925), (140, 38898), (143, 38889), (154, 38799), (158, 38748), (159, 38745), (167, 38667), (170, 38640),

Gene: Vash\_33 Start: 26115, Stop: 26702, Start Num: 75

Candidate Starts for Vash\_33:

(18, 25725), (22, 25752), (25, 25794), (38, 25905), (61, 26043), (Start: 75 @26115 has 87 MA's), (146, 26445), (153, 26490), (156, 26514), (158, 26544), (159, 26547), (163, 26577), (172, 26661), (174, 26673),

Gene: Wander\_78 Start: 46742, Stop: 46158, Start Num: 75

Candidate Starts for Wander\_78:

(48, 46892), (61, 46814), (66, 46793), (Start: 74 @46745 has 27 MA's), (Start: 75 @46742 has 87 MA's), (99, 46637), (122, 46565), (125, 46547), (138, 46481), (152, 46376), (158, 46316), (159, 46313), (169, 46226), (170, 46205),

Gene: Wilbur\_78 Start: 46745, Stop: 46161, Start Num: 75

Candidate Starts for Wilbur\_78:

(48, 46895), (61, 46817), (66, 46796), (Start: 74 @46748 has 27 MA's), (Start: 75 @46745 has 87 MA's), (99, 46640), (122, 46568), (123, 46562), (125, 46550), (138, 46484), (152, 46379), (158, 46319), (159, 46316), (169, 46229), (170, 46208),

Gene: Wile\_74 Start: 46560, Stop: 45988, Start Num: 76

Candidate Starts for Wile\_74:

(48, 46722), (61, 46644), (66, 46623), (Start: 74 @46575 has 27 MA's), (Start: 75 @46572 has 87 MA's), (Start: 76 @46560 has 4 MA's), (99, 46467), (122, 46395), (125, 46377), (138, 46311), (152, 46206), (158, 46146), (159, 46143), (169, 46056), (170, 46035), (175, 45999),

Gene: Wizard007\_75 Start: 46286, Stop: 45714, Start Num: 76

Candidate Starts for Wizard007\_75:

(48, 46448), (61, 46370), (66, 46349), (Start: 74 @46301 has 27 MA's), (Start: 75 @46298 has 87 MA's), (Start: 76 @46286 has 4 MA's), (99, 46193), (122, 46121), (125, 46103), (138, 46037), (152, 45932), (158, 45872), (159, 45869), (169, 45782), (170, 45761), (175, 45725),

Gene: Xena\_74 Start: 46567, Stop: 45983, Start Num: 75

Candidate Starts for Xena\_74:

(48, 46717), (61, 46639), (66, 46618), (Start: 74 @46570 has 27 MA's), (Start: 75 @46567 has 87 MA's), (99, 46462), (122, 46390), (125, 46372), (138, 46306), (152, 46201), (158, 46141), (159, 46138), (169, 46051), (170, 46030),

Gene: YoSam321\_78 Start: 46746, Stop: 46159, Start Num: 74

Candidate Starts for YoSam321\_78:

(48, 46893), (61, 46815), (66, 46794), (Start: 74 @46746 has 27 MA's), (Start: 75 @46743 has 87 MA's), (99, 46638), (122, 46566), (125, 46548), (138, 46482), (158, 46317), (159, 46314), (169, 46227), (170, 46206),