

Pham 311426



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 311426 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311426 has 101 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Mischief19\_47
- Track 2 : Quico\_66, Brushbloom\_60, Sandalphon\_59, Whatsapiecost\_58, Minnie\_61, Veteran\_54, Girafales\_67, Squirty\_60, Chevrolet\_63, Florinda\_69, ArcusAngelus\_60, MilleniumForce\_61, Ramsey\_57
- Track 3 : Bubbles123\_54, Ogopogo\_63, SuperGrey\_61
- Track 4 : SassyB\_52, Moonbeam\_56, PopTart\_52, StAnnes\_56
- Track 5 : Frankie\_65, LilSpotty\_59, LordVader\_56, TootsiePop\_57, Misha28\_57, Awesomesauce\_59
- Track 6 : MilanaBonita\_48, Phanphagia\_55, Tweety\_57, XFactor\_56, Ardmore\_50, Shauna1\_56, Hamulus\_59, Donkeykong\_61, Akhila\_49, DLane\_53, Bobi\_63, Filuzino\_56, Okabe\_53, Wachhund\_59, Emma\_59, Flathead\_58, Aubs\_58, TDanisky\_65, Sparkdehlily\_65, Phalconet\_56, SilverChicken\_68, PhesterPhotato\_58
- Track 7 : ChickenDinner\_59, DocMcStuffins\_59, MulchSalad\_59, Piper2020\_60, Aloeri\_60
- Track 8 : Batiatus\_56
- Track 9 : Juniper1\_58
- Track 10 : Fruitloop\_55
- Track 11 : Tchotchke\_58
- Track 12 : QueenHazel\_40, Xula\_39
- Track 13 : Rebel\_41, Spinach\_49, Purgamenstris\_49, Nenae\_49, Redi\_49, Raymond7\_43, Impisi\_50, BabeRuth\_50, Silvy\_43, PhancyPhin\_49, ShrimpFriedEgg\_49, Aggie\_43
- Track 14 : Melville\_48, Schnauzer\_46, Fulbright\_44, Jamie19\_43, Tessdabest\_46, Parmesanjohn\_45, Panchino\_42, Phloss\_43, Magsby\_45, Scitech\_42, Silvafighter\_46, Tortoise12\_44, SpongeBob\_43, Gex\_45, Xerxes\_45, Carcharodon\_45, Pipsqueaks\_45, Smurph\_45, Snekmaggedon\_43, Tapioca\_47, Duplicity\_45, Chewbacca\_47
- Track 15 : MichelleMyBell\_45, Rubeelu\_48, Kevin1\_47, Butters\_48
- Track 16 : Cubone\_47
- Track 17 : Bosection6\_43
- Track 18 : MooMoo\_58

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

The start number called the most often in the published annotations is 16, it was called in 38 of the 91 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aggie\_43, BabeRuth\_50, Bosection6\_43, Butters\_48, Carcharodon\_45, Chewbacca\_47, Duplicity\_45, Fulbright\_44, Gex\_45, Impisi\_50, Jamie19\_43, Juniper1\_58, Kevin1\_47, Magsby\_45, Melville\_48, MichelleMyBell\_45, Mischief19\_47, Nenae\_49, Panchino\_42, Parmesanjohn\_45, PhancyPhin\_49, Phloss\_43, Pipsqueaks\_45, Purgamenstris\_49, Raymond7\_43, Rebel\_41, Redi\_49, Rubeelu\_48, Schnauzer\_46, Scitech\_42, ShrimpFriedEgg\_49, Silvafighter\_46, Silvy\_43, Smurph\_45, Snekmaggedon\_43, Spinach\_49, SpongeBob\_43, Tapioca\_47, Tessdabest\_46, Tortoise12\_44, Xerxes\_45,

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

- Akhila\_49, ArcusAngelus\_60, Ardmore\_50, Aubs\_58, Batiatus\_56, Bobi\_63, Brushbloom\_60, Bubbles123\_54, Chevrolet\_63, DLane\_53, Donkeykong\_61, Emma\_59, Filuzino\_56, Flathead\_58, Florinda\_69, Fruitloop\_55, Girafales\_67, Hamulus\_59, MilanaBonita\_48, MilleniumForce\_61, Minnie\_61, Moonbeam\_56, Ogopogo\_63, Okabe\_53, Phalconet\_56, Phanphagia\_55, PhesterPhotato\_58, PopTart\_52, Quico\_66, Ramsey\_57, Sandalphon\_59, SassyB\_52, Shauna1\_56, SilverChicken\_68, Sparkdehlily\_65, Squirty\_60, StAnnes\_56, SuperGrey\_61, TDanisky\_65, Tchotchke\_58, Tweety\_57, Veteran\_54, Wachhund\_59, Whatsapiecost\_58, XFactor\_56,

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

- Aleri\_60, Awesomesauce\_59, ChickenDinner\_59, Cubone\_47, DocMcStuffins\_59, Frankie\_65, LilSpotty\_59, LordVader\_56, Misha28\_57, MooMoo\_58, MulchSalad\_59, Piper2020\_60, QueenHazel\_40, TootsiePop\_57, Xula\_39,

### Summary by start number:

Start 16:

- Found in 86 of 101 ( 85.1% ) of genes in pham
- Manual Annotations of this start: 38 of 91
- Called 47.7% of time when present
- Phage (with cluster) where this start called: Aggie\_43 (N), BabeRuth\_50 (N), Bosection6\_43 (N), Butters\_48 (N), Carcharodon\_45 (N), Chewbacca\_47 (N), Duplicity\_45 (N), Fulbright\_44 (N), Gex\_45 (N), Impisi\_50 (N), Jamie19\_43 (N), Juniper1\_58 (F1), Kevin1\_47 (N), Magsby\_45 (N), Melville\_48 (N), MichelleMyBell\_45 (N), Mischief19\_47 (BG), Nenae\_49 (N), Panchino\_42 (N), Parmesanjohn\_45 (N), PhancyPhin\_49 (N), Phloss\_43 (N), Pipsqueaks\_45 (N), Purgamenstris\_49 (N), Raymond7\_43 (N), Rebel\_41 (N), Redi\_49 (N), Rubeelu\_48 (N), Schnauzer\_46 (N), Scitech\_42 (N), ShrimpFriedEgg\_49 (N), Silvafighter\_46 (N), Silvy\_43 (N), Smurph\_45 (N), Snekmaggedon\_43 (N), Spinach\_49 (N), SpongeBob\_43 (N), Tapioca\_47 (N), Tessdabest\_46 (N), Tortoise12\_44 (N), Xerxes\_45 (N),

Start 17:

- Found in 71 of 101 ( 70.3% ) of genes in pham
- Manual Annotations of this start: 6 of 91
- Called 8.5% of time when present
- Phage (with cluster) where this start called: Moonbeam\_56 (F1), PopTart\_52 (F1), QueenHazel\_40 (I1), SassyB\_52 (F1), StAnnes\_56 (F1), Xula\_39 (I1),

#### Start 18:

- Found in 45 of 101 ( 44.6% ) of genes in pham
- Manual Annotations of this start: 37 of 91
- Called 91.1% of time when present
- Phage (with cluster) where this start called: Akhila\_49 (F1), ArcusAngelus\_60 (F1), Ardmore\_50 (F1), Aubs\_58 (F1), Batiatus\_56 (F1), Bobi\_63 (F1), Brushbloom\_60 (F1), Bubbles123\_54 (F1), Chevrolet\_63 (F1), DLane\_53 (F1), Donkeykong\_61 (F1), Emma\_59 (F1), Filuzino\_56 (F1), Flathead\_58 (F1), Florinda\_69 (F1), Fruitloop\_55 (F1), Girafales\_67 (F1), Hamulus\_59 (F1), MilanaBonita\_48 (F1), MilleniumForce\_61 (F1), Minnie\_61 (F1), Ogopogo\_63 (F1), Okabe\_53 (F8), Phalconet\_56 (F1), Phanphagia\_55 (F1), PhesterPhotato\_58 (F1), Quico\_66 (F1), Ramsey\_57 (F1), Sandalphon\_59 (F1), Shauna1\_56 (F1), SilverChicken\_68 (F2), Sparkdehlily\_65 (F1), Squirty\_60 (F3), SuperGrey\_61 (F1), TDanisky\_65 (F1), Tchotchke\_58 (F1), Tweety\_57 (F1), Veteran\_54 (F1), Wachhund\_59 (F1), Whatsapiecost\_58 (F1), XFactor\_56 (F1),

#### Start 19:

- Found in 1 of 101 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 91
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MooMoo\_58 (singleton),

#### Start 21:

- Found in 12 of 101 ( 11.9% ) of genes in pham
- Manual Annotations of this start: 9 of 91
- Called 91.7% of time when present
- Phage (with cluster) where this start called: Aloeri\_60 (F1), Awesomesauce\_59 (F1), ChickenDinner\_59 (F1), DocMcStuffins\_59 (F1), Frankie\_65 (F1), LilSpotty\_59 (singleton), LordVader\_56 (F), Misha28\_57 (F1), MulchSalad\_59 (F7), Piper2020\_60 (F1), TootsiePop\_57 (F1),

#### Start 26:

- Found in 13 of 101 ( 12.9% ) of genes in pham
- No Manual Annotations of this start.
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Cubone\_47 (N),

### Summary by clusters:

There are 10 clusters represented in this pham: F1, singleton, BG, F, I1, F7, F2, N, F8, F3,

Info for manual annotations of cluster BG:

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

Info for manual annotations of cluster F1:

- Start number 16 was manually annotated 1 time for cluster F1.
- Start number 17 was manually annotated 4 times for cluster F1.
- Start number 18 was manually annotated 36 times for cluster F1.
- Start number 21 was manually annotated 8 times for cluster F1.

Info for manual annotations of cluster F3:

- Start number 18 was manually annotated 1 time for cluster F3.

Info for manual annotations of cluster I1:

- Start number 17 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster N:

- Start number 16 was manually annotated 36 times for cluster N.

### **Gene Information:**

Gene: Aggie\_43 Start: 30482, Stop: 30862, Start Num: 16

Candidate Starts for Aggie\_43:

(2, 30200), (3, 30203), (6, 30347), (Start: 16 @30482 has 38 MA's), (28, 30578), (31, 30641), (35, 30704), (36, 30728), (45, 30779), (48, 30821), (51, 30851),

Gene: Akhila\_49 Start: 35492, Stop: 35893, Start Num: 18

Candidate Starts for Akhila\_49:

(Start: 16 @35483 has 38 MA's), (Start: 17 @35489 has 6 MA's), (Start: 18 @35492 has 37 MA's), (22, 35516), (37, 35744), (38, 35753), (40, 35768), (41, 35771), (50, 35861),

Gene: Aloeri\_60 Start: 39346, Stop: 39699, Start Num: 21

Candidate Starts for Aloeri\_60:

(Start: 21 @39346 has 9 MA's), (26, 39388), (30, 39457), (35, 39538), (36, 39562), (46, 39619), (52, 39688),

Gene: ArcusAngelus\_60 Start: 40045, Stop: 40452, Start Num: 18

Candidate Starts for ArcusAngelus\_60:

(Start: 16 @40036 has 38 MA's), (Start: 17 @40042 has 6 MA's), (Start: 18 @40045 has 37 MA's), (39, 40315), (50, 40420),

Gene: Ardmore\_50 Start: 37578, Stop: 37979, Start Num: 18

Candidate Starts for Ardmore\_50:

(Start: 16 @37569 has 38 MA's), (Start: 17 @37575 has 6 MA's), (Start: 18 @37578 has 37 MA's), (22, 37602), (37, 37830), (38, 37839), (40, 37854), (41, 37857), (50, 37947),

Gene: Aubs\_58 Start: 39742, Stop: 40143, Start Num: 18

Candidate Starts for Aubs\_58:

(Start: 16 @39733 has 38 MA's), (Start: 17 @39739 has 6 MA's), (Start: 18 @39742 has 37 MA's), (22, 39766), (37, 39994), (38, 40003), (40, 40018), (41, 40021), (50, 40111),

Gene: Awesomesauce\_59 Start: 38429, Stop: 38782, Start Num: 21

Candidate Starts for Awesomesauce\_59:

(12, 38378), (13, 38384), (Start: 21 @38429 has 9 MA's), (26, 38471), (30, 38540), (35, 38621), (36, 38645), (46, 38702), (52, 38771),

Gene: BabeRuth\_50 Start: 32627, Stop: 33007, Start Num: 16

Candidate Starts for BabeRuth\_50:

(2, 32345), (3, 32348), (6, 32492), (Start: 16 @32627 has 38 MA's), (28, 32723), (31, 32786), (35, 32849), (36, 32873), (45, 32924), (48, 32966), (51, 32996),

Gene: Batiatus\_56 Start: 39446, Stop: 39853, Start Num: 18

Candidate Starts for Batiatus\_56:

(Start: 16 @39437 has 38 MA's), (Start: 17 @39443 has 6 MA's), (Start: 18 @39446 has 37 MA's), (22, 39470), (39, 39716), (50, 39821),

Gene: Bobi\_63 Start: 41055, Stop: 41456, Start Num: 18

Candidate Starts for Bobi\_63:

(Start: 16 @41046 has 38 MA's), (Start: 17 @41052 has 6 MA's), (Start: 18 @41055 has 37 MA's), (22, 41079), (37, 41307), (38, 41316), (40, 41331), (41, 41334), (50, 41424),

Gene: Bosection6\_43 Start: 30372, Stop: 30755, Start Num: 16

Candidate Starts for Bosection6\_43:

(2, 30090), (3, 30093), (6, 30237), (12, 30348), (Start: 16 @30372 has 38 MA's), (Start: 17 @30378 has 6 MA's), (28, 30471), (31, 30534), (35, 30597), (36, 30621), (45, 30672), (48, 30714), (51, 30744),

Gene: Brushbloom\_60 Start: 40378, Stop: 40785, Start Num: 18

Candidate Starts for Brushbloom\_60:

(Start: 16 @40369 has 38 MA's), (Start: 17 @40375 has 6 MA's), (Start: 18 @40378 has 37 MA's), (39, 40648), (50, 40753),

Gene: Bubbles123\_54 Start: 39367, Stop: 39762, Start Num: 18

Candidate Starts for Bubbles123\_54:

(Start: 16 @39358 has 38 MA's), (Start: 17 @39364 has 6 MA's), (Start: 18 @39367 has 37 MA's), (37, 39613), (38, 39622), (40, 39637), (41, 39640), (50, 39730),

Gene: Butters\_48 Start: 32426, Stop: 32803, Start Num: 16

Candidate Starts for Butters\_48:

(1, 32126), (6, 32291), (Start: 16 @32426 has 38 MA's), (28, 32519), (31, 32582), (35, 32645), (36, 32669), (45, 32720),

Gene: Carcharodon\_45 Start: 31721, Stop: 32104, Start Num: 16

Candidate Starts for Carcharodon\_45:

(6, 31586), (12, 31697), (Start: 16 @31721 has 38 MA's), (Start: 17 @31727 has 6 MA's), (28, 31820), (31, 31883), (35, 31946), (36, 31970), (45, 32021), (48, 32063), (51, 32093),

Gene: Chevrolet\_63 Start: 40046, Stop: 40453, Start Num: 18

Candidate Starts for Chevrolet\_63:

(Start: 16 @40037 has 38 MA's), (Start: 17 @40043 has 6 MA's), (Start: 18 @40046 has 37 MA's), (39, 40316), (50, 40421),

Gene: Chewbacca\_47 Start: 31721, Stop: 32104, Start Num: 16

Candidate Starts for Chewbacca\_47:

(6, 31586), (12, 31697), (Start: 16 @31721 has 38 MA's), (Start: 17 @31727 has 6 MA's), (28, 31820), (31, 31883), (35, 31946), (36, 31970), (45, 32021), (48, 32063), (51, 32093),

Gene: ChickenDinner\_59 Start: 39346, Stop: 39699, Start Num: 21

Candidate Starts for ChickenDinner\_59:

(Start: 21 @39346 has 9 MA's), (26, 39388), (30, 39457), (35, 39538), (36, 39562), (46, 39619), (52, 39688),

Gene: Cubone\_47 Start: 30625, Stop: 30936, Start Num: 26

Candidate Starts for Cubone\_47:

(12, 30532), (13, 30538), (Start: 21 @30583 has 9 MA's), (26, 30625), (28, 30649), (29, 30691), (30, 30694), (35, 30775), (36, 30799), (46, 30856), (52, 30925),

Gene: DLane\_53 Start: 38102, Stop: 38503, Start Num: 18

Candidate Starts for DLane\_53:

(Start: 16 @38093 has 38 MA's), (Start: 17 @38099 has 6 MA's), (Start: 18 @38102 has 37 MA's), (22, 38126), (37, 38354), (38, 38363), (40, 38378), (41, 38381), (50, 38471),

Gene: DocMcStuffins\_59 Start: 39346, Stop: 39699, Start Num: 21

Candidate Starts for DocMcStuffins\_59:

(Start: 21 @39346 has 9 MA's), (26, 39388), (30, 39457), (35, 39538), (36, 39562), (46, 39619), (52, 39688),

Gene: Donkeykong\_61 Start: 41997, Stop: 42398, Start Num: 18

Candidate Starts for Donkeykong\_61:

(Start: 16 @41988 has 38 MA's), (Start: 17 @41994 has 6 MA's), (Start: 18 @41997 has 37 MA's), (22, 42021), (37, 42249), (38, 42258), (40, 42273), (41, 42276), (50, 42366),

Gene: Duplicity\_45 Start: 31730, Stop: 32113, Start Num: 16

Candidate Starts for Duplicity\_45:

(6, 31595), (12, 31706), (Start: 16 @31730 has 38 MA's), (Start: 17 @31736 has 6 MA's), (28, 31829), (31, 31892), (35, 31955), (36, 31979), (45, 32030), (48, 32072), (51, 32102),

Gene: Emma\_59 Start: 39114, Stop: 39515, Start Num: 18

Candidate Starts for Emma\_59:

(Start: 16 @39105 has 38 MA's), (Start: 17 @39111 has 6 MA's), (Start: 18 @39114 has 37 MA's), (22, 39138), (37, 39366), (38, 39375), (40, 39390), (41, 39393), (50, 39483),

Gene: Filuzino\_56 Start: 38404, Stop: 38805, Start Num: 18

Candidate Starts for Filuzino\_56:

(Start: 16 @38395 has 38 MA's), (Start: 17 @38401 has 6 MA's), (Start: 18 @38404 has 37 MA's), (22, 38428), (37, 38656), (38, 38665), (40, 38680), (41, 38683), (50, 38773),

Gene: Flathead\_58 Start: 39871, Stop: 40272, Start Num: 18

Candidate Starts for Flathead\_58:

(Start: 16 @39862 has 38 MA's), (Start: 17 @39868 has 6 MA's), (Start: 18 @39871 has 37 MA's), (22, 39895), (37, 40123), (38, 40132), (40, 40147), (41, 40150), (50, 40240),

Gene: Florinda\_69 Start: 41495, Stop: 41902, Start Num: 18

Candidate Starts for Florinda\_69:

(Start: 16 @41486 has 38 MA's), (Start: 17 @41492 has 6 MA's), (Start: 18 @41495 has 37 MA's), (39, 41765), (50, 41870),

Gene: Frankie\_65 Start: 41824, Stop: 42177, Start Num: 21

Candidate Starts for Frankie\_65:

(12, 41773), (13, 41779), (Start: 21 @41824 has 9 MA's), (26, 41866), (30, 41935), (35, 42016), (36, 42040), (46, 42097), (52, 42166),

Gene: Fruitloop\_55 Start: 39718, Stop: 40119, Start Num: 18

Candidate Starts for Fruitloop\_55:

(Start: 16 @39709 has 38 MA's), (Start: 17 @39715 has 6 MA's), (Start: 18 @39718 has 37 MA's), (22, 39742), (37, 39970), (38, 39979), (40, 39994), (41, 39997),

Gene: Fulbright\_44 Start: 30810, Stop: 31193, Start Num: 16

Candidate Starts for Fulbright\_44:

(6, 30675), (12, 30786), (Start: 16 @30810 has 38 MA's), (Start: 17 @30816 has 6 MA's), (28, 30909), (31, 30972), (35, 31035), (36, 31059), (45, 31110), (48, 31152), (51, 31182),

Gene: Gex\_45 Start: 31737, Stop: 32120, Start Num: 16

Candidate Starts for Gex\_45:

(6, 31602), (12, 31713), (Start: 16 @31737 has 38 MA's), (Start: 17 @31743 has 6 MA's), (28, 31836), (31, 31899), (35, 31962), (36, 31986), (45, 32037), (48, 32079), (51, 32109),

Gene: Girafales\_67 Start: 41286, Stop: 41693, Start Num: 18

Candidate Starts for Girafales\_67:

(Start: 16 @41277 has 38 MA's), (Start: 17 @41283 has 6 MA's), (Start: 18 @41286 has 37 MA's), (39, 41556), (50, 41661),

Gene: Hamulus\_59 Start: 39858, Stop: 40259, Start Num: 18

Candidate Starts for Hamulus\_59:

(Start: 16 @39849 has 38 MA's), (Start: 17 @39855 has 6 MA's), (Start: 18 @39858 has 37 MA's), (22, 39882), (37, 40110), (38, 40119), (40, 40134), (41, 40137), (50, 40227),

Gene: Impisi\_50 Start: 32424, Stop: 32804, Start Num: 16

Candidate Starts for Impisi\_50:

(2, 32142), (3, 32145), (6, 32289), (Start: 16 @32424 has 38 MA's), (28, 32520), (31, 32583), (35, 32646), (36, 32670), (45, 32721), (48, 32763), (51, 32793),

Gene: Jamie19\_43 Start: 30918, Stop: 31301, Start Num: 16

Candidate Starts for Jamie19\_43:

(6, 30783), (12, 30894), (Start: 16 @30918 has 38 MA's), (Start: 17 @30924 has 6 MA's), (28, 31017), (31, 31080), (35, 31143), (36, 31167), (45, 31218), (48, 31260), (51, 31290),

Gene: Juniper1\_58 Start: 40048, Stop: 40446, Start Num: 16

Candidate Starts for Juniper1\_58:

(10, 40012), (Start: 16 @40048 has 38 MA's), (26, 40120), (27, 40132), (29, 40189), (32, 40225), (33, 40237), (45, 40351), (49, 40405), (53, 40438),

Gene: Kevin1\_47 Start: 31862, Stop: 32239, Start Num: 16

Candidate Starts for Kevin1\_47:

(1, 31562), (6, 31727), (Start: 16 @31862 has 38 MA's), (28, 31955), (31, 32018), (35, 32081), (36, 32105), (45, 32156),

Gene: LilSpotty\_59 Start: 37743, Stop: 38096, Start Num: 21

Candidate Starts for LilSpotty\_59:

(12, 37692), (13, 37698), (Start: 21 @37743 has 9 MA's), (26, 37785), (30, 37854), (35, 37935), (36, 37959), (46, 38016), (52, 38085),

Gene: LordVader\_56 Start: 35185, Stop: 35538, Start Num: 21

Candidate Starts for LordVader\_56:

(12, 35134), (13, 35140), (Start: 21 @35185 has 9 MA's), (26, 35227), (30, 35296), (35, 35377), (36, 35401), (46, 35458), (52, 35527),

Gene: Magsby\_45 Start: 31738, Stop: 32121, Start Num: 16

Candidate Starts for Magsby\_45:

(6, 31603), (12, 31714), (Start: 16 @31738 has 38 MA's), (Start: 17 @31744 has 6 MA's), (28, 31837), (31, 31900), (35, 31963), (36, 31987), (45, 32038), (48, 32080), (51, 32110),

Gene: Melville\_48 Start: 31722, Stop: 32105, Start Num: 16

Candidate Starts for Melville\_48:

(6, 31587), (12, 31698), (Start: 16 @31722 has 38 MA's), (Start: 17 @31728 has 6 MA's), (28, 31821), (31, 31884), (35, 31947), (36, 31971), (45, 32022), (48, 32064), (51, 32094),

Gene: MichelleMyBell\_45 Start: 30673, Stop: 31050, Start Num: 16

Candidate Starts for MichelleMyBell\_45:

(1, 30373), (6, 30538), (Start: 16 @30673 has 38 MA's), (28, 30766), (31, 30829), (35, 30892), (36, 30916), (45, 30967),

Gene: MilanaBonita\_48 Start: 35492, Stop: 35893, Start Num: 18

Candidate Starts for MilanaBonita\_48:

(Start: 16 @35483 has 38 MA's), (Start: 17 @35489 has 6 MA's), (Start: 18 @35492 has 37 MA's), (22, 35516), (37, 35744), (38, 35753), (40, 35768), (41, 35771), (50, 35861),

Gene: MilleniumForce\_61 Start: 41581, Stop: 41988, Start Num: 18

Candidate Starts for MilleniumForce\_61:

(Start: 16 @41572 has 38 MA's), (Start: 17 @41578 has 6 MA's), (Start: 18 @41581 has 37 MA's), (39, 41851), (50, 41956),

Gene: Minnie\_61 Start: 40883, Stop: 41290, Start Num: 18

Candidate Starts for Minnie\_61:

(Start: 16 @40874 has 38 MA's), (Start: 17 @40880 has 6 MA's), (Start: 18 @40883 has 37 MA's), (39, 41153), (50, 41258),

Gene: Mischief19\_47 Start: 42321, Stop: 41932, Start Num: 16

Candidate Starts for Mischief19\_47:

(Start: 16 @42321 has 38 MA's), (Start: 17 @42315 has 6 MA's), (28, 42231), (30, 42183), (36, 42078), (42, 42042), (45, 42024),

Gene: Misha28\_57 Start: 38434, Stop: 38787, Start Num: 21

Candidate Starts for Misha28\_57:

(12, 38383), (13, 38389), (Start: 21 @38434 has 9 MA's), (26, 38476), (30, 38545), (35, 38626), (36, 38650), (46, 38707), (52, 38776),

Gene: MooMoo\_58 Start: 39220, Stop: 39621, Start Num: 19

Candidate Starts for MooMoo\_58:

(11, 39175), (15, 39199), (Start: 19 @39220 has 1 MA's), (23, 39247), (24, 39250), (30, 39352), (34, 39421), (47, 39568),

Gene: Moonbeam\_56 Start: 39040, Stop: 39444, Start Num: 17

Candidate Starts for Moonbeam\_56:

(Start: 16 @39034 has 38 MA's), (Start: 17 @39040 has 6 MA's), (Start: 18 @39043 has 37 MA's), (22, 39067), (37, 39295), (38, 39304), (40, 39319), (41, 39322), (50, 39412),

Gene: MulchSalad\_59 Start: 37668, Stop: 38021, Start Num: 21

Candidate Starts for MulchSalad\_59:

(Start: 21 @37668 has 9 MA's), (26, 37710), (30, 37779), (35, 37860), (36, 37884), (46, 37941), (52, 38010),

Gene: Nенаe\_49 Start: 32629, Stop: 33009, Start Num: 16

Candidate Starts for Nенаe\_49:

(2, 32347), (3, 32350), (6, 32494), (Start: 16 @32629 has 38 MA's), (28, 32725), (31, 32788), (35, 32851), (36, 32875), (45, 32926), (48, 32968), (51, 32998),

Gene: Ogopogo\_63 Start: 39889, Stop: 40284, Start Num: 18

Candidate Starts for Ogopogo\_63:

(Start: 16 @39880 has 38 MA's), (Start: 17 @39886 has 6 MA's), (Start: 18 @39889 has 37 MA's), (37, 40135), (38, 40144), (40, 40159), (41, 40162), (50, 40252),

Gene: Okabe\_53 Start: 35812, Stop: 36213, Start Num: 18

Candidate Starts for Okabe\_53:

(Start: 16 @35803 has 38 MA's), (Start: 17 @35809 has 6 MA's), (Start: 18 @35812 has 37 MA's), (22, 35836), (37, 36064), (38, 36073), (40, 36088), (41, 36091), (50, 36181),

Gene: Panchino\_42 Start: 32264, Stop: 32647, Start Num: 16

Candidate Starts for Panchino\_42:

(6, 32129), (12, 32240), (Start: 16 @32264 has 38 MA's), (Start: 17 @32270 has 6 MA's), (28, 32363), (31, 32426), (35, 32489), (36, 32513), (45, 32564), (48, 32606), (51, 32636),

Gene: Parmesanjohn\_45 Start: 31741, Stop: 32124, Start Num: 16

Candidate Starts for Parmesanjohn\_45:

(6, 31606), (12, 31717), (Start: 16 @31741 has 38 MA's), (Start: 17 @31747 has 6 MA's), (28, 31840), (31, 31903), (35, 31966), (36, 31990), (45, 32041), (48, 32083), (51, 32113),

Gene: Phalconet\_56 Start: 38170, Stop: 38571, Start Num: 18

Candidate Starts for Phalconet\_56:

(Start: 16 @38161 has 38 MA's), (Start: 17 @38167 has 6 MA's), (Start: 18 @38170 has 37 MA's), (22, 38194), (37, 38422), (38, 38431), (40, 38446), (41, 38449), (50, 38539),

Gene: PhancyPhin\_49 Start: 32623, Stop: 33003, Start Num: 16

Candidate Starts for PhancyPhin\_49:

(2, 32341), (3, 32344), (6, 32488), (Start: 16 @32623 has 38 MA's), (28, 32719), (31, 32782), (35, 32845), (36, 32869), (45, 32920), (48, 32962), (51, 32992),

Gene: Phanphagia\_55 Start: 39761, Stop: 40162, Start Num: 18

Candidate Starts for Phanphagia\_55:

(Start: 16 @39752 has 38 MA's), (Start: 17 @39758 has 6 MA's), (Start: 18 @39761 has 37 MA's), (22, 39785), (37, 40013), (38, 40022), (40, 40037), (41, 40040), (50, 40130),

Gene: PhesterPhotato\_58 Start: 38987, Stop: 39388, Start Num: 18

Candidate Starts for PhesterPhotato\_58:

(Start: 16 @38978 has 38 MA's), (Start: 17 @38984 has 6 MA's), (Start: 18 @38987 has 37 MA's), (22, 39011), (37, 39239), (38, 39248), (40, 39263), (41, 39266), (50, 39356),

Gene: Phloss\_43 Start: 31148, Stop: 31531, Start Num: 16

Candidate Starts for Phloss\_43:

(6, 31013), (12, 31124), (Start: 16 @31148 has 38 MA's), (Start: 17 @31154 has 6 MA's), (28, 31247), (31, 31310), (35, 31373), (36, 31397), (45, 31448), (48, 31490), (51, 31520),

Gene: Piper2020\_60 Start: 39329, Stop: 39682, Start Num: 21  
Candidate Starts for Piper2020\_60:  
(Start: 21 @39329 has 9 MA's), (26, 39371), (30, 39440), (35, 39521), (36, 39545), (46, 39602), (52, 39671),

Gene: Pipsqueaks\_45 Start: 31718, Stop: 32101, Start Num: 16  
Candidate Starts for Pipsqueaks\_45:  
(6, 31583), (12, 31694), (Start: 16 @31718 has 38 MA's), (Start: 17 @31724 has 6 MA's), (28, 31817), (31, 31880), (35, 31943), (36, 31967), (45, 32018), (48, 32060), (51, 32090),

Gene: PopTart\_52 Start: 37792, Stop: 38196, Start Num: 17  
Candidate Starts for PopTart\_52:  
(Start: 16 @37786 has 38 MA's), (Start: 17 @37792 has 6 MA's), (Start: 18 @37795 has 37 MA's), (22, 37819), (37, 38047), (38, 38056), (40, 38071), (41, 38074), (50, 38164),

Gene: Purgamenstris\_49 Start: 32627, Stop: 33007, Start Num: 16  
Candidate Starts for Purgamenstris\_49:  
(2, 32345), (3, 32348), (6, 32492), (Start: 16 @32627 has 38 MA's), (28, 32723), (31, 32786), (35, 32849), (36, 32873), (45, 32924), (48, 32966), (51, 32996),

Gene: QueenHazel\_40 Start: 31055, Stop: 31426, Start Num: 17  
Candidate Starts for QueenHazel\_40:  
(4, 30872), (5, 30905), (7, 31001), (8, 31007), (9, 31013), (14, 31040), (Start: 17 @31055 has 6 MA's), (20, 31076), (22, 31082), (30, 31193), (31, 31211), (36, 31298), (42, 31331), (43, 31340), (44, 31343), (52, 31415),

Gene: Quico\_66 Start: 41315, Stop: 41722, Start Num: 18  
Candidate Starts for Quico\_66:  
(Start: 16 @41306 has 38 MA's), (Start: 17 @41312 has 6 MA's), (Start: 18 @41315 has 37 MA's), (39, 41585), (50, 41690),

Gene: Ramsey\_57 Start: 39737, Stop: 40144, Start Num: 18  
Candidate Starts for Ramsey\_57:  
(Start: 16 @39728 has 38 MA's), (Start: 17 @39734 has 6 MA's), (Start: 18 @39737 has 37 MA's), (39, 40007), (50, 40112),

Gene: Raymond7\_43 Start: 32415, Stop: 32795, Start Num: 16  
Candidate Starts for Raymond7\_43:  
(2, 32133), (3, 32136), (6, 32280), (Start: 16 @32415 has 38 MA's), (28, 32511), (31, 32574), (35, 32637), (36, 32661), (45, 32712), (48, 32754), (51, 32784),

Gene: Rebel\_41 Start: 28757, Stop: 29137, Start Num: 16  
Candidate Starts for Rebel\_41:  
(2, 28475), (3, 28478), (6, 28622), (Start: 16 @28757 has 38 MA's), (28, 28853), (31, 28916), (35, 28979), (36, 29003), (45, 29054), (48, 29096), (51, 29126),

Gene: Redi\_49 Start: 32626, Stop: 33006, Start Num: 16  
Candidate Starts for Redi\_49:  
(2, 32344), (3, 32347), (6, 32491), (Start: 16 @32626 has 38 MA's), (28, 32722), (31, 32785), (35, 32848), (36, 32872), (45, 32923), (48, 32965), (51, 32995),

Gene: Rubeelu\_48 Start: 32426, Stop: 32803, Start Num: 16  
Candidate Starts for Rubeelu\_48:

(1, 32126), (6, 32291), (Start: 16 @32426 has 38 MA's), (28, 32519), (31, 32582), (35, 32645), (36, 32669), (45, 32720),

Gene: Sandalphon\_59 Start: 39861, Stop: 40268, Start Num: 18

Candidate Starts for Sandalphon\_59:

(Start: 16 @39852 has 38 MA's), (Start: 17 @39858 has 6 MA's), (Start: 18 @39861 has 37 MA's), (39, 40131), (50, 40236),

Gene: SassyB\_52 Start: 37792, Stop: 38196, Start Num: 17

Candidate Starts for SassyB\_52:

(Start: 16 @37786 has 38 MA's), (Start: 17 @37792 has 6 MA's), (Start: 18 @37795 has 37 MA's), (22, 37819), (37, 38047), (38, 38056), (40, 38071), (41, 38074), (50, 38164),

Gene: Schnauzer\_46 Start: 31741, Stop: 32124, Start Num: 16

Candidate Starts for Schnauzer\_46:

(6, 31606), (12, 31717), (Start: 16 @31741 has 38 MA's), (Start: 17 @31747 has 6 MA's), (28, 31840), (31, 31903), (35, 31966), (36, 31990), (45, 32041), (48, 32083), (51, 32113),

Gene: Scitech\_42 Start: 29757, Stop: 30140, Start Num: 16

Candidate Starts for Scitech\_42:

(6, 29622), (12, 29733), (Start: 16 @29757 has 38 MA's), (Start: 17 @29763 has 6 MA's), (28, 29856), (31, 29919), (35, 29982), (36, 30006), (45, 30057), (48, 30099), (51, 30129),

Gene: Shauna1\_56 Start: 39670, Stop: 40071, Start Num: 18

Candidate Starts for Shauna1\_56:

(Start: 16 @39661 has 38 MA's), (Start: 17 @39667 has 6 MA's), (Start: 18 @39670 has 37 MA's), (22, 39694), (37, 39922), (38, 39931), (40, 39946), (41, 39949), (50, 40039),

Gene: ShrimpFriedEgg\_49 Start: 32626, Stop: 33006, Start Num: 16

Candidate Starts for ShrimpFriedEgg\_49:

(2, 32344), (3, 32347), (6, 32491), (Start: 16 @32626 has 38 MA's), (28, 32722), (31, 32785), (35, 32848), (36, 32872), (45, 32923), (48, 32965), (51, 32995),

Gene: Silvafighter\_46 Start: 31714, Stop: 32097, Start Num: 16

Candidate Starts for Silvafighter\_46:

(6, 31579), (12, 31690), (Start: 16 @31714 has 38 MA's), (Start: 17 @31720 has 6 MA's), (28, 31813), (31, 31876), (35, 31939), (36, 31963), (45, 32014), (48, 32056), (51, 32086),

Gene: SilverChicken\_68 Start: 39450, Stop: 39851, Start Num: 18

Candidate Starts for SilverChicken\_68:

(Start: 16 @39441 has 38 MA's), (Start: 17 @39447 has 6 MA's), (Start: 18 @39450 has 37 MA's), (22, 39474), (37, 39702), (38, 39711), (40, 39726), (41, 39729), (50, 39819),

Gene: Silvy\_43 Start: 30482, Stop: 30862, Start Num: 16

Candidate Starts for Silvy\_43:

(2, 30200), (3, 30203), (6, 30347), (Start: 16 @30482 has 38 MA's), (28, 30578), (31, 30641), (35, 30704), (36, 30728), (45, 30779), (48, 30821), (51, 30851),

Gene: Smurph\_45 Start: 31741, Stop: 32124, Start Num: 16

Candidate Starts for Smurph\_45:

(6, 31606), (12, 31717), (Start: 16 @31741 has 38 MA's), (Start: 17 @31747 has 6 MA's), (28, 31840), (31, 31903), (35, 31966), (36, 31990), (45, 32041), (48, 32083), (51, 32113),

Gene: Snekmaggedon\_43 Start: 30918, Stop: 31301, Start Num: 16

Candidate Starts for Snekmaggedon\_43:

(6, 30783), (12, 30894), (Start: 16 @30918 has 38 MA's), (Start: 17 @30924 has 6 MA's), (28, 31017), (31, 31080), (35, 31143), (36, 31167), (45, 31218), (48, 31260), (51, 31290),

Gene: Sparkdehlily\_65 Start: 40681, Stop: 41082, Start Num: 18

Candidate Starts for Sparkdehlily\_65:

(Start: 16 @40672 has 38 MA's), (Start: 17 @40678 has 6 MA's), (Start: 18 @40681 has 37 MA's), (22, 40705), (37, 40933), (38, 40942), (40, 40957), (41, 40960), (50, 41050),

Gene: Spinach\_49 Start: 32626, Stop: 33006, Start Num: 16

Candidate Starts for Spinach\_49:

(2, 32344), (3, 32347), (6, 32491), (Start: 16 @32626 has 38 MA's), (28, 32722), (31, 32785), (35, 32848), (36, 32872), (45, 32923), (48, 32965), (51, 32995),

Gene: SpongeBob\_43 Start: 30918, Stop: 31301, Start Num: 16

Candidate Starts for SpongeBob\_43:

(6, 30783), (12, 30894), (Start: 16 @30918 has 38 MA's), (Start: 17 @30924 has 6 MA's), (28, 31017), (31, 31080), (35, 31143), (36, 31167), (45, 31218), (48, 31260), (51, 31290),

Gene: Squirty\_60 Start: 40442, Stop: 40849, Start Num: 18

Candidate Starts for Squirty\_60:

(Start: 16 @40433 has 38 MA's), (Start: 17 @40439 has 6 MA's), (Start: 18 @40442 has 37 MA's), (39, 40712), (50, 40817),

Gene: StAnnes\_56 Start: 39845, Stop: 40249, Start Num: 17

Candidate Starts for StAnnes\_56:

(Start: 16 @39839 has 38 MA's), (Start: 17 @39845 has 6 MA's), (Start: 18 @39848 has 37 MA's), (22, 39872), (37, 40100), (38, 40109), (40, 40124), (41, 40127), (50, 40217),

Gene: SuperGrey\_61 Start: 41156, Stop: 41557, Start Num: 18

Candidate Starts for SuperGrey\_61:

(Start: 16 @41147 has 38 MA's), (Start: 17 @41153 has 6 MA's), (Start: 18 @41156 has 37 MA's), (37, 41408), (38, 41417), (40, 41432), (41, 41435), (50, 41525),

Gene: TDanisky\_65 Start: 40681, Stop: 41082, Start Num: 18

Candidate Starts for TDanisky\_65:

(Start: 16 @40672 has 38 MA's), (Start: 17 @40678 has 6 MA's), (Start: 18 @40681 has 37 MA's), (22, 40705), (37, 40933), (38, 40942), (40, 40957), (41, 40960), (50, 41050),

Gene: Tapioca\_47 Start: 31707, Stop: 32090, Start Num: 16

Candidate Starts for Tapioca\_47:

(6, 31572), (12, 31683), (Start: 16 @31707 has 38 MA's), (Start: 17 @31713 has 6 MA's), (28, 31806), (31, 31869), (35, 31932), (36, 31956), (45, 32007), (48, 32049), (51, 32079),

Gene: Tchotchke\_58 Start: 39073, Stop: 39474, Start Num: 18

Candidate Starts for Tchotchke\_58:

(Start: 16 @39064 has 38 MA's), (Start: 17 @39070 has 6 MA's), (Start: 18 @39073 has 37 MA's), (22, 39097), (25, 39121), (37, 39325), (38, 39334), (40, 39349), (41, 39352), (50, 39442),

Gene: Tessdabest\_46 Start: 31738, Stop: 32121, Start Num: 16

Candidate Starts for Tessdabest\_46:

(6, 31603), (12, 31714), (Start: 16 @31738 has 38 MA's), (Start: 17 @31744 has 6 MA's), (28, 31837), (31, 31900), (35, 31963), (36, 31987), (45, 32038), (48, 32080), (51, 32110),

Gene: TootsiePop\_57 Start: 38434, Stop: 38787, Start Num: 21

Candidate Starts for TootsiePop\_57:

(12, 38383), (13, 38389), (Start: 21 @38434 has 9 MA's), (26, 38476), (30, 38545), (35, 38626), (36, 38650), (46, 38707), (52, 38776),

Gene: Tortoise12\_44 Start: 30424, Stop: 30807, Start Num: 16

Candidate Starts for Tortoise12\_44:

(6, 30289), (12, 30400), (Start: 16 @30424 has 38 MA's), (Start: 17 @30430 has 6 MA's), (28, 30523), (31, 30586), (35, 30649), (36, 30673), (45, 30724), (48, 30766), (51, 30796),

Gene: Tweety\_57 Start: 40472, Stop: 40873, Start Num: 18

Candidate Starts for Tweety\_57:

(Start: 16 @40463 has 38 MA's), (Start: 17 @40469 has 6 MA's), (Start: 18 @40472 has 37 MA's), (22, 40496), (37, 40724), (38, 40733), (40, 40748), (41, 40751), (50, 40841),

Gene: Veteran\_54 Start: 38058, Stop: 38465, Start Num: 18

Candidate Starts for Veteran\_54:

(Start: 16 @38049 has 38 MA's), (Start: 17 @38055 has 6 MA's), (Start: 18 @38058 has 37 MA's), (39, 38328), (50, 38433),

Gene: Wachhund\_59 Start: 39272, Stop: 39673, Start Num: 18

Candidate Starts for Wachhund\_59:

(Start: 16 @39263 has 38 MA's), (Start: 17 @39269 has 6 MA's), (Start: 18 @39272 has 37 MA's), (22, 39296), (37, 39524), (38, 39533), (40, 39548), (41, 39551), (50, 39641),

Gene: Whatsapiecost\_58 Start: 38556, Stop: 38963, Start Num: 18

Candidate Starts for Whatsapiecost\_58:

(Start: 16 @38547 has 38 MA's), (Start: 17 @38553 has 6 MA's), (Start: 18 @38556 has 37 MA's), (39, 38826), (50, 38931),

Gene: XFactor\_56 Start: 38361, Stop: 38762, Start Num: 18

Candidate Starts for XFactor\_56:

(Start: 16 @38352 has 38 MA's), (Start: 17 @38358 has 6 MA's), (Start: 18 @38361 has 37 MA's), (22, 38385), (37, 38613), (38, 38622), (40, 38637), (41, 38640), (50, 38730),

Gene: Xerxes\_45 Start: 31738, Stop: 32121, Start Num: 16

Candidate Starts for Xerxes\_45:

(6, 31603), (12, 31714), (Start: 16 @31738 has 38 MA's), (Start: 17 @31744 has 6 MA's), (28, 31837), (31, 31900), (35, 31963), (36, 31987), (45, 32038), (48, 32080), (51, 32110),

Gene: Xula\_39 Start: 30657, Stop: 31028, Start Num: 17

Candidate Starts for Xula\_39:

(4, 30474), (5, 30507), (7, 30603), (8, 30609), (9, 30615), (14, 30642), (Start: 17 @30657 has 6 MA's), (20, 30678), (22, 30684), (30, 30795), (31, 30813), (36, 30900), (42, 30933), (43, 30942), (44, 30945), (52, 31017),