

Pham 291206



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 291206 Report

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

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

Pham number 291206 has 56 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Raleigh\_39
- Track 2 : Darolandstone\_39
- Track 3 : Piccadilly\_41, Eastland\_41, HFrancette\_42, Schlegelian\_42, Ignacio\_41, FrumpyGal\_42
- Track 4 : Cumberbatch\_42, ArizonaGT\_42
- Track 5 : AxeJC\_40
- Track 6 : Vondra\_40
- Track 7 : TZGordon\_54
- Track 8 : Vendetta\_52, Splinter\_52
- Track 9 : Goib\_53
- Track 10 : TinaLin\_51, Banquo\_51
- Track 11 : Dardanus\_47
- Track 12 : Catfish\_50
- Track 13 : Cardigan\_119
- Track 14 : Yvonnetastic\_115
- Track 15 : Daredevil\_78, Towmatter\_78
- Track 16 : Mollymur\_88
- Track 17 : Divya\_52
- Track 18 : AirForce1\_49
- Track 19 : SunnyJune\_50
- Track 20 : Jinkies\_48
- Track 21 : Skitty\_49, Merpity\_56, MrSmee\_55
- Track 22 : Mariel\_45, MenE\_43, Antuna\_43
- Track 23 : Losacky\_43, PhillyJawn\_43, Guzman\_42, Dropshot\_42, Appa\_42
- Track 24 : Phingu\_45, Blett\_42, Violeta\_44, Carrillo\_44, Bush\_43, NCRodriguez\_44
- Track 25 : Winchester007\_58, Pickles13\_41
- Track 26 : Jakelyne\_45
- Track 27 : Phonegingi\_42
- Track 28 : Warren\_42
- Track 29 : CookieDog\_42
- Track 30 : ScoobySnack\_39
- Track 31 : ThulaThula\_70
- Track 32 : Footloose\_57

- Track 33 : ArV2\_59

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

The start number called the most often in the published annotations is 24, it was called in 25 of the 40 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Antuna\_43, Appa\_42, ArizonaGT\_42, AxeJC\_40, Blett\_42, Bush\_43, Cardigan\_119, Carrillo\_44, CookieDog\_42, Cumberbatch\_42, Darolandstone\_39, Dropshot\_42, Eastland\_41, FrumpyGal\_42, Guzman\_42, HFrancette\_42, Ignacio\_41, Jakelyne\_45, Losacky\_43, Mariel\_45, MenE\_43, Merpity\_56, MrSmee\_55, NCRodriguez\_44, PhillyJawn\_43, Phingu\_45, Phonegingi\_42, Piccadilly\_41, Pickles13\_41, Raleigh\_39, Schlegelian\_42, ScoobySnack\_39, Skitty\_49, Violeta\_44, Vondra\_40, Warren\_42, Winchester007\_58,

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

- 

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

- AirForce1\_49, ArV2\_59, Banquo\_51, Catfish\_50, Dardanus\_47, Daredevil\_78, Divya\_52, Footloose\_57, Goib\_53, Jinkies\_48, Mollymur\_88, Splinter\_52, SunnyJune\_50, TZGordon\_54, ThulaThula\_70, TinaLin\_51, Towmatter\_78, Vendetta\_52, Yvonnetastic\_115,

**Summary by start number:**

Start 12:

- Found in 10 of 56 ( 17.9% ) of genes in pham
- Manual Annotations of this start: 3 of 40
- Called 30.0% of time when present
- Phage (with cluster) where this start called: Daredevil\_78 (DL), Mollymur\_88 (DL), Towmatter\_78 (DL),

Start 14:

- Found in 1 of 56 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jinkies\_48 (FL),

Start 17:

- Found in 4 of 56 ( 7.1% ) of genes in pham
- Manual Annotations of this start: 2 of 40
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Goib\_53 (CU1), TZGordon\_54 (CU1),

Start 18:

- Found in 1 of 56 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 100.0% of time when present

- Phage (with cluster) where this start called: ThulaThula\_70 (P5),

Start 19:

- Found in 3 of 56 ( 5.4% ) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AirForce1\_49 (FL), ArV2\_59 (singleton), Catfish\_50 (CU5),

Start 20:

- Found in 2 of 56 ( 3.6% ) of genes in pham
- Manual Annotations of this start: 2 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dardanus\_47 (CU3), Footloose\_57 (singleton),

Start 21:

- Found in 1 of 56 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yvonnestic\_115 (DD),

Start 22:

- Found in 3 of 56 ( 5.4% ) of genes in pham
- Manual Annotations of this start: 2 of 40
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Banquo\_51 (CU1), TinaLin\_51 (CU1),

Start 23:

- Found in 1 of 56 ( 1.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Divya\_52 (FL),

Start 24:

- Found in 37 of 56 ( 66.1% ) of genes in pham
- Manual Annotations of this start: 25 of 40
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Antuna\_43 (GA), Appa\_42 (GA), ArizonaGT\_42 (BP), AxeJC\_40 (BP), Blett\_42 (GA), Bush\_43 (GA), Cardigan\_119 (DD), Carrillo\_44 (GA), CookieDog\_42 (GA), Cumberbatch\_42 (BP), Darolandstone\_39 (BC2), Dropshot\_42 (GA), Eastland\_41 (BP), FrumpyGal\_42 (BP), Guzman\_42 (GA), HFrancette\_42 (BP), Ignacio\_41 (BP), Jakelyne\_45 (GA), Losacky\_43 (GA), Mariel\_45 (GA), MenE\_43 (GA), Merpity\_56 (FQ), MrSmee\_55 (FQ), NCRodriguez\_44 (GA), PhillyJawn\_43 (GA), Phingu\_45 (GA), Phonegingi\_42 (GA), Piccadilly\_41 (BP), Pickles13\_41 (GA), Raleigh\_39 (BC2), Schlegelian\_42 (BP), ScoobySnack\_39 (GA), Skitty\_49 (FQ), Violeta\_44 (GA), Vondra\_40 (BP), Warren\_42 (GA), Winchester007\_58 (GA),

Start 27:

- Found in 7 of 56 ( 12.5% ) of genes in pham
- Manual Annotations of this start: 2 of 40
- Called 28.6% of time when present

- Phage (with cluster) where this start called: Splinter\_52 (CU1), Vendetta\_52 (CU1),

Start 40:

- Found in 1 of 56 ( 1.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SunnyJune\_50 (FL),

### **Summary by clusters:**

There are 12 clusters represented in this pham: FQ, DL, CU3, CU1, P5, DD, CU5, BP, GA, singleton, FL, BC2,

Info for manual annotations of cluster BC2:

- Start number 24 was manually annotated 2 times for cluster BC2.

Info for manual annotations of cluster BP:

- Start number 24 was manually annotated 10 times for cluster BP.

Info for manual annotations of cluster CU1:

- Start number 17 was manually annotated 2 times for cluster CU1.
- Start number 22 was manually annotated 2 times for cluster CU1.
- Start number 27 was manually annotated 2 times for cluster CU1.

Info for manual annotations of cluster CU3:

- Start number 20 was manually annotated 1 time for cluster CU3.

Info for manual annotations of cluster CU5:

- Start number 19 was manually annotated 1 time for cluster CU5.

Info for manual annotations of cluster DD:

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

Info for manual annotations of cluster DL:

- Start number 12 was manually annotated 3 times for cluster DL.

Info for manual annotations of cluster FL:

- Start number 14 was manually annotated 1 time for cluster FL.

Info for manual annotations of cluster FQ:

- Start number 24 was manually annotated 2 times for cluster FQ.

Info for manual annotations of cluster GA:

- Start number 24 was manually annotated 11 times for cluster GA.

Info for manual annotations of cluster P5:

- Start number 18 was manually annotated 1 time for cluster P5.

### **Gene Information:**

Gene: AirForce1\_49 Start: 34022, Stop: 34846, Start Num: 19

Candidate Starts for AirForce1\_49:

(Start: 19 @34022 has 1 MA's), (33, 34085), (57, 34214), (61, 34259), (75, 34394), (107, 34622),

Gene: Antuna\_43 Start: 26101, Stop: 26937, Start Num: 24

Candidate Starts for Antuna\_43:

(Start: 24 @26101 has 25 MA's), (32, 26146), (45, 26227), (49, 26248), (58, 26284), (80, 26479), (92, 26650), (102, 26734), (110, 26806), (113, 26812), (129, 26917),

Gene: Appa\_42 Start: 26023, Stop: 26835, Start Num: 24

Candidate Starts for Appa\_42:

(Start: 24 @26023 has 25 MA's), (32, 26068), (45, 26149), (49, 26170), (58, 26206), (92, 26548), (102, 26632), (110, 26704), (113, 26710), (129, 26815),

Gene: ArV2\_59 Start: 32108, Stop: 32857, Start Num: 19

Candidate Starts for ArV2\_59:

(Start: 19 @32108 has 1 MA's), (28, 32150), (32, 32165), (37, 32204), (41, 32222), (50, 32270), (76, 32495), (78, 32507), (100, 32669), (107, 32714),

Gene: ArizonaGT\_42 Start: 28364, Stop: 29290, Start Num: 24

Candidate Starts for ArizonaGT\_42:

(Start: 24 @28364 has 25 MA's), (29, 28397), (37, 28439), (65, 28625), (85, 28853),

Gene: AxeJC\_40 Start: 28086, Stop: 28979, Start Num: 24

Candidate Starts for AxeJC\_40:

(1, 27522), (2, 27579), (3, 27582), (4, 27669), (5, 27762), (6, 27765), (7, 27822), (8, 27927), (9, 27942), (11, 27978), (Start: 24 @28086 has 25 MA's), (29, 28119), (45, 28212), (88, 28590), (122, 28869), (130, 28908),

Gene: Banquo\_51 Start: 32896, Stop: 33726, Start Num: 22

Candidate Starts for Banquo\_51:

(Start: 12 @32848 has 3 MA's), (Start: 22 @32896 has 2 MA's), (36, 32986), (38, 32998), (41, 33010), (47, 33055), (51, 33067), (61, 33157), (67, 33208), (82, 33349), (101, 33565), (118, 33694),

Gene: Blett\_42 Start: 26203, Stop: 27036, Start Num: 24

Candidate Starts for Blett\_42:

(Start: 24 @26203 has 25 MA's), (32, 26248), (45, 26329), (49, 26350), (58, 26386), (80, 26581), (102, 26833), (110, 26905), (113, 26911), (129, 27016),

Gene: Bush\_43 Start: 26151, Stop: 26984, Start Num: 24

Candidate Starts for Bush\_43:

(Start: 24 @26151 has 25 MA's), (32, 26196), (45, 26277), (49, 26298), (58, 26334), (80, 26529), (102, 26781), (110, 26853), (113, 26859), (129, 26964),

Gene: Cardigan\_119 Start: 67606, Stop: 68412, Start Num: 24

Candidate Starts for Cardigan\_119:

(15, 67564), (16, 67567), (Start: 24 @67606 has 25 MA's), (48, 67747), (58, 67798), (74, 67960), (77, 67972), (91, 68125), (123, 68353), (125, 68356), (126, 68362), (127, 68377), (129, 68386), (131, 68401),

Gene: Carrillo\_44 Start: 26124, Stop: 26957, Start Num: 24

Candidate Starts for Carrillo\_44:

(Start: 24 @26124 has 25 MA's), (32, 26169), (45, 26250), (49, 26271), (58, 26307), (80, 26502), (102, 26754), (110, 26826), (113, 26832), (129, 26937),

Gene: Catfish\_50 Start: 34417, Stop: 35127, Start Num: 19

Candidate Starts for Catfish\_50:

(Start: 19 @34417 has 1 MA's), (33, 34480), (44, 34555), (87, 34873), (104, 34987), (116, 35095), (119, 35113),

Gene: CookieDog\_42 Start: 26124, Stop: 26957, Start Num: 24

Candidate Starts for CookieDog\_42:

(Start: 24 @26124 has 25 MA's), (32, 26169), (45, 26250), (49, 26271), (58, 26307), (80, 26502), (110, 26826), (113, 26832), (129, 26937),

Gene: Cumberbatch\_42 Start: 28364, Stop: 29290, Start Num: 24

Candidate Starts for Cumberbatch\_42:

(Start: 24 @28364 has 25 MA's), (29, 28397), (37, 28439), (65, 28625), (85, 28853),

Gene: Dardanus\_47 Start: 31666, Stop: 32385, Start Num: 20

Candidate Starts for Dardanus\_47:

(Start: 12 @31621 has 3 MA's), (Start: 20 @31666 has 2 MA's), (Start: 22 @31669 has 2 MA's), (Start: 27 @31708 has 2 MA's), (30, 31714), (36, 31759), (38, 31771), (63, 31930), (73, 32008), (79, 32026), (82, 32053), (84, 32065), (104, 32230),

Gene: Daredevil\_78 Start: 56200, Stop: 55208, Start Num: 12

Candidate Starts for Daredevil\_78:

(Start: 12 @56200 has 3 MA's), (13, 56191), (Start: 27 @56113 has 2 MA's), (38, 56050), (45, 56005), (61, 55891), (86, 55624), (101, 55462), (124, 55315), (132, 55261), (136, 55228),

Gene: Darolandstone\_39 Start: 30667, Stop: 31617, Start Num: 24

Candidate Starts for Darolandstone\_39:

(Start: 24 @30667 has 25 MA's), (44, 30790), (64, 30919), (65, 30922), (94, 31270), (97, 31276), (99, 31282), (130, 31525), (134, 31558), (137, 31576),

Gene: Divya\_52 Start: 34928, Stop: 35869, Start Num: 23

Candidate Starts for Divya\_52:

(23, 34928), (33, 34976), (46, 35060), (47, 35066), (69, 35228), (135, 35804),

Gene: Dropshot\_42 Start: 25858, Stop: 26670, Start Num: 24

Candidate Starts for Dropshot\_42:

(Start: 24 @25858 has 25 MA's), (32, 25903), (45, 25984), (49, 26005), (58, 26041), (92, 26383), (102, 26467), (110, 26539), (113, 26545), (129, 26650),

Gene: Eastland\_41 Start: 28339, Stop: 29250, Start Num: 24

Candidate Starts for Eastland\_41:

(10, 28204), (Start: 24 @28339 has 25 MA's), (29, 28372), (45, 28465), (64, 28591), (65, 28594), (66, 28606), (88, 28837), (112, 29047),

Gene: Footloose\_57 Start: 32676, Stop: 33455, Start Num: 20

Candidate Starts for Footloose\_57:

(Start: 20 @32676 has 2 MA's), (38, 32781), (42, 32805), (47, 32838), (52, 32865), (58, 32907), (59, 32910), (70, 33012), (71, 33027), (89, 33189), (93, 33264), (95, 33276), (98, 33285), (106, 33360), (111, 33405),

Gene: FrumpyGal\_42 Start: 28339, Stop: 29250, Start Num: 24

Candidate Starts for FrumpyGal\_42:

(10, 28204), (Start: 24 @28339 has 25 MA's), (29, 28372), (45, 28465), (64, 28591), (65, 28594), (66, 28606), (88, 28837), (112, 29047),

Gene: Goib\_53 Start: 33944, Stop: 34795, Start Num: 17

Candidate Starts for Goib\_53:

(Start: 12 @33917 has 3 MA's), (Start: 17 @33944 has 2 MA's), (Start: 27 @34004 has 2 MA's), (31, 34013), (35, 34040), (36, 34055), (38, 34067), (41, 34079), (61, 34226), (72, 34340), (82, 34418),

Gene: Guzman\_42 Start: 26122, Stop: 26934, Start Num: 24

Candidate Starts for Guzman\_42:

(Start: 24 @26122 has 25 MA's), (32, 26167), (45, 26248), (49, 26269), (58, 26305), (92, 26647), (102, 26731), (110, 26803), (113, 26809), (129, 26914),

Gene: HFrancette\_42 Start: 29117, Stop: 30028, Start Num: 24

Candidate Starts for HFrancette\_42:

(10, 28982), (Start: 24 @29117 has 25 MA's), (29, 29150), (45, 29243), (64, 29369), (65, 29372), (66, 29384), (88, 29615), (112, 29825),

Gene: Ignacio\_41 Start: 29020, Stop: 29931, Start Num: 24

Candidate Starts for Ignacio\_41:

(10, 28885), (Start: 24 @29020 has 25 MA's), (29, 29053), (45, 29146), (64, 29272), (65, 29275), (66, 29287), (88, 29518), (112, 29728),

Gene: Jakelyne\_45 Start: 26233, Stop: 27045, Start Num: 24

Candidate Starts for Jakelyne\_45:

(Start: 24 @26233 has 25 MA's), (32, 26278), (49, 26380), (58, 26416), (80, 26611), (102, 26842), (110, 26914), (113, 26920), (129, 27025),

Gene: Jinkies\_48 Start: 35024, Stop: 35947, Start Num: 14

Candidate Starts for Jinkies\_48:

(Start: 14 @35024 has 1 MA's), (25, 35072), (37, 35156), (64, 35324), (90, 35594), (96, 35642),

Gene: Losacky\_43 Start: 26243, Stop: 27055, Start Num: 24

Candidate Starts for Losacky\_43:

(Start: 24 @26243 has 25 MA's), (32, 26288), (45, 26369), (49, 26390), (58, 26426), (92, 26768), (102, 26852), (110, 26924), (113, 26930), (129, 27035),

Gene: Mariel\_45 Start: 26592, Stop: 27428, Start Num: 24

Candidate Starts for Mariel\_45:

(Start: 24 @26592 has 25 MA's), (32, 26637), (45, 26718), (49, 26739), (58, 26775), (80, 26970), (92, 27141), (102, 27225), (110, 27297), (113, 27303), (129, 27408),

Gene: MenE\_43 Start: 26123, Stop: 26959, Start Num: 24

Candidate Starts for MenE\_43:

(Start: 24 @26123 has 25 MA's), (32, 26168), (45, 26249), (49, 26270), (58, 26306), (80, 26501), (92, 26672), (102, 26756), (110, 26828), (113, 26834), (129, 26939),

Gene: Merpity\_56 Start: 32461, Stop: 33207, Start Num: 24

Candidate Starts for Merpity\_56:

(Start: 24 @32461 has 25 MA's), (36, 32530), (39, 32545), (45, 32587), (53, 32629), (65, 32713), (69, 32758), (103, 33025), (104, 33028), (105, 33040), (109, 33085), (120, 33154),

Gene: Mollymur\_88 Start: 61334, Stop: 60348, Start Num: 12

Candidate Starts for Mollymur\_88:

(Start: 12 @61334 has 3 MA's), (13, 61325), (37, 61190), (38, 61184), (86, 60773), (101, 60602), (128, 60425), (132, 60401),

Gene: MrSmee\_55 Start: 32435, Stop: 33181, Start Num: 24

Candidate Starts for MrSmee\_55:

(Start: 24 @32435 has 25 MA's), (36, 32504), (39, 32519), (45, 32561), (53, 32603), (65, 32687), (69, 32732), (103, 32999), (104, 33002), (105, 33014), (109, 33059), (120, 33128),

Gene: NCRodriguez\_44 Start: 26345, Stop: 27178, Start Num: 24

Candidate Starts for NCRodriguez\_44:

(Start: 24 @26345 has 25 MA's), (32, 26390), (45, 26471), (49, 26492), (58, 26528), (80, 26723), (102, 26975), (110, 27047), (113, 27053), (129, 27158),

Gene: PhillyJawn\_43 Start: 26020, Stop: 26832, Start Num: 24

Candidate Starts for PhillyJawn\_43:

(Start: 24 @26020 has 25 MA's), (32, 26065), (45, 26146), (49, 26167), (58, 26203), (92, 26545), (102, 26629), (110, 26701), (113, 26707), (129, 26812),

Gene: Phingu\_45 Start: 26236, Stop: 27069, Start Num: 24

Candidate Starts for Phingu\_45:

(Start: 24 @26236 has 25 MA's), (32, 26281), (45, 26362), (49, 26383), (58, 26419), (80, 26614), (102, 26866), (110, 26938), (113, 26944), (129, 27049),

Gene: Phoningi\_42 Start: 26069, Stop: 26881, Start Num: 24

Candidate Starts for Phoningi\_42:

(Start: 24 @26069 has 25 MA's), (32, 26114), (49, 26216), (58, 26252), (80, 26447), (102, 26678), (110, 26750), (113, 26756), (114, 26759), (129, 26861),

Gene: Piccadilly\_41 Start: 28338, Stop: 29249, Start Num: 24

Candidate Starts for Piccadilly\_41:

(10, 28203), (Start: 24 @28338 has 25 MA's), (29, 28371), (45, 28464), (64, 28590), (65, 28593), (66, 28605), (88, 28836), (112, 29046),

Gene: Pickles13\_41 Start: 26333, Stop: 27145, Start Num: 24

Candidate Starts for Pickles13\_41:

(Start: 24 @26333 has 25 MA's), (32, 26378), (49, 26480), (58, 26516), (92, 26858), (102, 26942), (110, 27014), (113, 27020), (129, 27125),

Gene: Raleigh\_39 Start: 31035, Stop: 31985, Start Num: 24

Candidate Starts for Raleigh\_39:

(Start: 24 @31035 has 25 MA's), (32, 31080), (44, 31158), (64, 31287), (65, 31290), (94, 31638), (97, 31644), (99, 31650), (108, 31764), (125, 31857), (130, 31893), (137, 31944),

Gene: Schlegelian\_42 Start: 28903, Stop: 29814, Start Num: 24

Candidate Starts for Schlegelian\_42:

(10, 28768), (Start: 24 @28903 has 25 MA's), (29, 28936), (45, 29029), (64, 29155), (65, 29158), (66, 29170), (88, 29401), (112, 29611),

Gene: ScoobySnack\_39 Start: 25838, Stop: 26671, Start Num: 24

Candidate Starts for ScoobySnack\_39:

(Start: 24 @25838 has 25 MA's), (32, 25883), (49, 25985), (58, 26021), (80, 26216), (102, 26468), (110, 26540), (113, 26546), (117, 26588), (129, 26651),

Gene: Skitty\_49 Start: 30277, Stop: 31023, Start Num: 24

Candidate Starts for Skitty\_49:

(Start: 24 @30277 has 25 MA's), (36, 30346), (39, 30361), (45, 30403), (53, 30445), (65, 30529), (69, 30574), (103, 30841), (104, 30844), (105, 30856), (109, 30901), (120, 30970),

Gene: Splinter\_52 Start: 34027, Stop: 34818, Start Num: 27

Candidate Starts for Splinter\_52:

(Start: 12 @33940 has 3 MA's), (Start: 17 @33967 has 2 MA's), (Start: 27 @34027 has 2 MA's), (31, 34036), (35, 34063), (36, 34078), (38, 34090), (41, 34102), (61, 34249), (82, 34441),

Gene: SunnyJune\_50 Start: 34761, Stop: 35537, Start Num: 40

Candidate Starts for SunnyJune\_50:

(40, 34761), (56, 34848), (64, 34911), (68, 34953), (81, 35076), (90, 35187), (96, 35235), (118, 35418), (133, 35508),

Gene: TZGordon\_54 Start: 33313, Stop: 34164, Start Num: 17

Candidate Starts for TZGordon\_54:

(Start: 12 @33286 has 3 MA's), (Start: 17 @33313 has 2 MA's), (Start: 27 @33373 has 2 MA's), (31, 33382), (35, 33409), (36, 33424), (38, 33436), (41, 33448), (61, 33595), (82, 33787),

Gene: ThulaThula\_70 Start: 45355, Stop: 46230, Start Num: 18

Candidate Starts for ThulaThula\_70:

(Start: 18 @45355 has 1 MA's), (26, 45376), (34, 45427), (37, 45448), (43, 45484), (54, 45541), (55, 45550), (60, 45589), (83, 45802), (115, 46120),

Gene: TinaLin\_51 Start: 32790, Stop: 33620, Start Num: 22

Candidate Starts for TinaLin\_51:

(Start: 12 @32742 has 3 MA's), (Start: 22 @32790 has 2 MA's), (36, 32880), (38, 32892), (41, 32904), (47, 32949), (51, 32961), (61, 33051), (67, 33102), (82, 33243), (101, 33459), (118, 33588),

Gene: Towmatter\_78 Start: 56279, Stop: 55287, Start Num: 12

Candidate Starts for Towmatter\_78:

(Start: 12 @56279 has 3 MA's), (13, 56270), (Start: 27 @56192 has 2 MA's), (38, 56129), (45, 56084), (61, 55970), (86, 55703), (101, 55541), (124, 55394), (132, 55340), (136, 55307),

Gene: Vendetta\_52 Start: 34027, Stop: 34818, Start Num: 27

Candidate Starts for Vendetta\_52:

(Start: 12 @33940 has 3 MA's), (Start: 17 @33967 has 2 MA's), (Start: 27 @34027 has 2 MA's), (31, 34036), (35, 34063), (36, 34078), (38, 34090), (41, 34102), (61, 34249), (82, 34441),

Gene: Violeta\_44 Start: 26115, Stop: 26948, Start Num: 24

Candidate Starts for Violeta\_44:

(Start: 24 @26115 has 25 MA's), (32, 26160), (45, 26241), (49, 26262), (58, 26298), (80, 26493), (102, 26745), (110, 26817), (113, 26823), (129, 26928),

Gene: Vondra\_40 Start: 28184, Stop: 29101, Start Num: 24

Candidate Starts for Vondra\_40:

(Start: 24 @28184 has 25 MA's), (29, 28217), (44, 28307), (45, 28310), (62, 28424), (64, 28436), (65, 28439), (88, 28682),

Gene: Warren\_42 Start: 26076, Stop: 26891, Start Num: 24

Candidate Starts for Warren\_42:

(Start: 24 @26076 has 25 MA's), (43, 26187), (49, 26223), (92, 26604), (102, 26688), (110, 26760), (113, 26766), (129, 26871),

Gene: Winchester007\_58 Start: 32135, Stop: 32947, Start Num: 24

Candidate Starts for Winchester007\_58:

(Start: 24 @32135 has 25 MA's), (32, 32180), (49, 32282), (58, 32318), (92, 32660), (102, 32744), (110, 32816), (113, 32822), (129, 32927),

Gene: Yvonnetastic\_115 Start: 65057, Stop: 65878, Start Num: 21

Candidate Starts for Yvonnetastic\_115:

(Start: 21 @65057 has 1 MA's), (34, 65120), (48, 65207), (58, 65258), (68, 65339), (77, 65432), (91, 65585), (121, 65807),