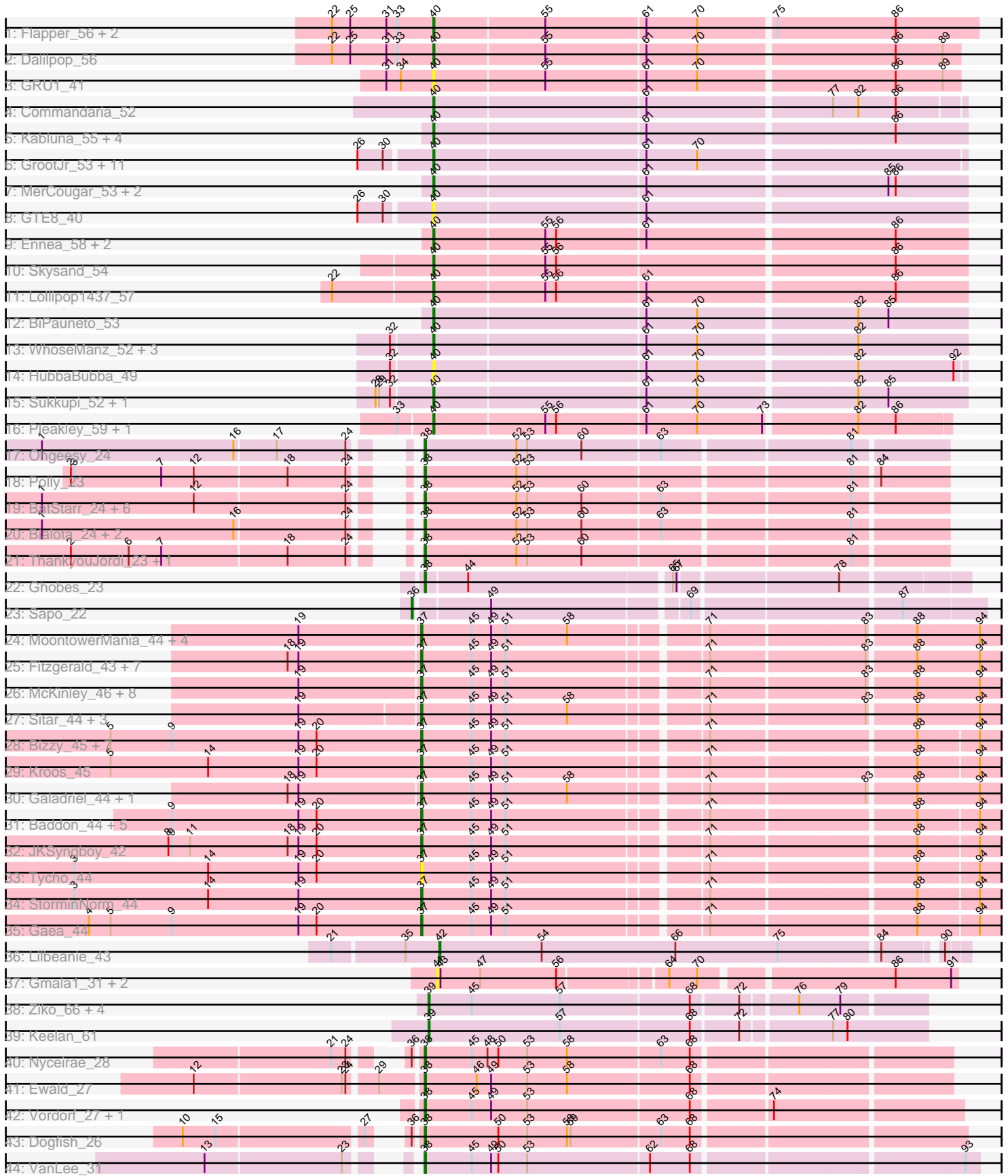


Pham 157710



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 157710 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157710 has 121 members, 19 are drafts.

Phages represented in each track:

- Track 1 : Flapper\_56, GTE5\_43, Turuncu\_56
- Track 2 : Dalilpop\_56
- Track 3 : GRU1\_41
- Track 4 : Commandaria\_52
- Track 5 : Kabluna\_55, Bonum\_55, SuperSulley\_53, Buggaboo\_53, NosilaM\_55
- Track 6 : GrootJr\_53, NovumRegina\_51, Kurt\_51, KidneyBean\_51, Jifall16\_50, NatB6\_51, Wheezy\_51, Tracker\_51, Arti\_51, Emianna\_51, Phomeo\_50, Foxboro\_52
- Track 7 : MerCougar\_53, Outis\_53, StarStruck\_53
- Track 8 : GTE8\_40
- Track 9 : Ennea\_58, Float294\_54, Patio\_55
- Track 10 : Skysand\_54
- Track 11 : Lollipop1437\_57
- Track 12 : BiPauneto\_53
- Track 13 : WhoseManz\_52, IDyn\_52, Marietta\_53, NadineRae\_51
- Track 14 : HubbaBubba\_49
- Track 15 : Sukkupi\_52, Yndexa\_52
- Track 16 : Pleakley\_59, Fury\_59
- Track 17 : Ohgeesy\_24
- Track 18 : Polly\_23
- Track 19 : BatStarr\_24, Nymphadora\_24, TimTam\_24, Bosnia\_24, Hugley\_24, Herod\_24, Eviarto\_24
- Track 20 : Bialota\_24, Zirinka\_24, Madeline\_24
- Track 21 : ThankyouJordi\_23, WelcomeAyanna\_23
- Track 22 : Ghobes\_23
- Track 23 : Sapo\_22
- Track 24 : MoontowerMania\_44, Barsten\_45, ChadMasterC\_45, Jabberwocky\_43, Shivanishola\_44
- Track 25 : Fitzgerald\_43, Tangent\_45, Charming\_45, Nordenberg\_39, Brandonk123\_46, BobBob\_42, Rofo\_45, Sanjuju\_43
- Track 26 : McKinley\_46, Kamashten\_42, Vivi2\_47, Geodirt\_43, Love\_48, Fosterous\_42, Thing3\_42, Stultus\_43, Kewpiedoll\_44
- Track 27 : Sitar\_44, Affeca\_42, Lennon\_44, Angelicage\_42
- Track 28 : Bizzy\_45, SchottB\_43, Baumdotcom\_43, Tangerine\_44, Kwobi\_45, Flatwoods\_45, Ribeye\_45, LilHam\_42
- Track 29 : Kroos\_45
- Track 30 : Galadriel\_44, Paries\_47

- Track 31 : Baddon\_44, Saronaya\_44, Gustavo\_44, Derg\_42, YorkOnyx\_45, Ashertheman\_45
- Track 32 : JKSyngboy\_42
- Track 33 : Tycho\_44
- Track 34 : StorminNorm\_44
- Track 35 : Gaea\_44
- Track 36 : Lilbeanie\_43
- Track 37 : Gmala1\_31, GordDuk1\_31, GordTnk2\_31
- Track 38 : Ziko\_66, Fryberger\_63, Ronaldo\_66, Guey18\_69, Volt\_66
- Track 39 : Keelan\_61
- Track 40 : Nyceirae\_28
- Track 41 : Ewald\_27
- Track 42 : Vordorf\_27, Meyran\_26
- Track 43 : Dogfish\_26
- Track 44 : VanLee\_31

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

The start number called the most often in the published annotations is 37, it was called in 38 of the 102 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca\_42, Angelicage\_42, Ashertheman\_45, Baddon\_44, Barsten\_45, Baumdotcom\_43, Bizzy\_45, BobBob\_42, Brandonk123\_46, ChadMasterC\_45, Charming\_45, Derg\_42, Fitzgerald\_43, Flatwoods\_45, Fosterous\_42, Gaea\_44, Galadriel\_44, Geodirt\_43, Gustavo\_44, JKSyngboy\_42, Jabberwocky\_43, Kamashten\_42, Kewpiedoll\_44, Kroos\_45, Kwobi\_45, Lennon\_44, LilHam\_42, Love\_48, McKinley\_46, MoontowerMania\_44, Nordenberg\_39, Paries\_47, Ribeye\_45, Rofo\_45, Sanjuju\_43, Saronaya\_44, SchottB\_43, Shivanishola\_44, Sitar\_44, StorminNorm\_44, Stultus\_43, Tangent\_45, Tangerine\_44, Thing3\_42, Tycho\_44, Vivi2\_47, YorkOnyx\_45,

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

- 

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

- Arti\_51, BatStarr\_24, BiPauneto\_53, Bialota\_24, Bonum\_55, Bosnia\_24, Buggaboo\_53, Commandaria\_52, Dalilpop\_56, Dogfish\_26, Emianna\_51, Ennea\_58, Eviarto\_24, Ewald\_27, Flapper\_56, Float294\_54, Foxboro\_52, Fryberger\_63, Fury\_59, GRU1\_41, GTE5\_43, GTE8\_40, Ghobes\_23, Gmala1\_31, GordDuk1\_31, GordTnk2\_31, GrootJr\_53, Guey18\_69, Herod\_24, HubbaBubba\_49, Hugley\_24, IDyn\_52, Jifall16\_50, Kabluna\_55, Keelan\_61, KidneyBean\_51, Kurt\_51, Lilbeanie\_43, Lollipop1437\_57, Madeline\_24, Marietta\_53, MerCougar\_53, Meyran\_26, NadineRae\_51, NatB6\_51, NosilaM\_55, NovumRegina\_51, Nyceirae\_28, Nymphadora\_24, Ohgeesy\_24, Outis\_53, Patio\_55, Phomeo\_50, Pleakley\_59, Polly\_23, Ronaldo\_66, Sapo\_22, Skysand\_54, StarStruck\_53, Sukkupi\_52, SuperSulley\_53, ThankyouJordi\_23, TimTam\_24, Tracker\_51, Turuncu\_56, VanLee\_31, Volt\_66, Vordorf\_27, WelcomeAyanna\_23, Wheezy\_51, WhoseManz\_52, Yndexa\_52, Ziko\_66, Zirinka\_24,

## Summary by start number:

### Start 36:

- Found in 3 of 121 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 1 of 102
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Sapo\_22 (DA),

### Start 37:

- Found in 47 of 121 ( 38.8% ) of genes in pham
- Manual Annotations of this start: 38 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Affeca\_42 (DE1), Angelicage\_42 (DE1), Ashertheman\_45 (DE1), Baddon\_44 (DE1), Barsten\_45 (DE1), Baumdotcom\_43 (DE1), Bizzy\_45 (DE1), BobBob\_42 (DE1), Brandonk123\_46 (DE1), ChadMasterC\_45 (DE1), Charming\_45 (DE1), Derg\_42 (DE1), Fitzgerald\_43 (DE1), Flatwoods\_45 (DE1), Fosterous\_42 (DE1), Gaea\_44 (DE1), Galadriel\_44 (DE1), Geodirt\_43 (DE1), Gustavo\_44 (DE1), JKSyngboy\_42 (DE1), Jabberwocky\_43 (DE1), Kamashten\_42 (DE1), Kewpiedoll\_44 (DE1), Kroos\_45 (DE1), Kwobi\_45 (DE1), Lennon\_44 (DE1), LilHam\_42 (DE1), Love\_48 (DE1), McKinley\_46 (DE1), MoontowerMania\_44 (DE1), Nordenberg\_39 (DE1), Paries\_47 (DE1), Ribeye\_45 (DE1), Rofo\_45 (DE1), Sanjuju\_43 (DE1), Saronaya\_44 (DE1), SchottB\_43 (DE1), Shivanishola\_44 (DE1), Sitar\_44 (DE1), StorminNorm\_44 (DE1), Stultus\_43 (DE1), Tangent\_45 (DE1), Tangerine\_44 (DE1), Thing3\_42 (DE1), Tycho\_44 (DE1), Vivi2\_47 (DE1), YorkOnyx\_45 (DE1),

### Start 38:

- Found in 21 of 121 ( 17.4% ) of genes in pham
- Manual Annotations of this start: 19 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BatStarr\_24 (CZ1), Bialota\_24 (CZ1), Bosnia\_24 (CZ1), Dogfish\_26 (DT), Eviarto\_24 (CZ1), Ewald\_27 (DT), Ghobes\_23 (DA), Herod\_24 (CZ1), Hugley\_24 (CZ1), Madeline\_24 (CZ1), Meyran\_26 (DT), Nyceirae\_28 (DT), Nymphadora\_24 (CZ1), Ohgeesy\_24 (CZ), Polly\_23 (CZ1), ThankyouJordi\_23 (CZ1), TimTam\_24 (CZ1), VanLee\_31 (singleton), Vordorf\_27 (DT), WelcomeAyanna\_23 (CZ1), Zirinka\_24 (CZ1),

### Start 39:

- Found in 6 of 121 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 6 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fryberger\_63 (DP), Guey18\_69 (DP), Keelan\_61 (DP), Ronaldo\_66 (DP), Volt\_66 (DP), Ziko\_66 (DP),

### Start 40:

- Found in 42 of 121 ( 34.7% ) of genes in pham
- Manual Annotations of this start: 37 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arti\_51 (CR2), BiPauneto\_53 (CR4), Bonum\_55 (CR2), Buggaboo\_53 (CR2), Commandaria\_52 (CR2), Dalilpop\_56 (CR1), Emianna\_51 (CR2), Ennea\_58 (CR3), Flapper\_56 (CR1), Float294\_54 (CR3), Foxboro\_52 (CR2), Fury\_59 (CR5), GRU1\_41 (CR1), GTE5\_43 (CR1), GTE8\_40 (CR2), GrootJr\_53 (CR2), HubbaBubba\_49 (CR4), IDyn\_52 (CR4), Jifall16\_50 (CR2),

Kabluna\_55 (CR2), KidneyBean\_51 (CR2), Kurt\_51 (CR2), Lollipop1437\_57 (CR3), Marietta\_53 (CR4), MerCougar\_53 (CR2), NadineRae\_51 (CR4), NatB6\_51 (CR2), NosilaM\_55 (CR2), NovumRegina\_51 (CR2), Outis\_53 (CR2), Patio\_55 (CR3), Phomeo\_50 (CR2), Pleakley\_59 (CR5), Skysand\_54 (CR3), StarStruck\_53 (CR2), Sukkupi\_52 (CR4), SuperSulley\_53 (CR2), Tracker\_51 (CR2), Turuncu\_56 (CR1), Wheezy\_51 (CR2), WhoseManz\_52 (CR4), Yndexa\_52 (CR4),

Start 41:

- Found in 3 of 121 ( 2.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gmala1\_31 (DF1), GordDuk1\_31 (DF1), GordTnk2\_31 (DF1),

Start 42:

- Found in 1 of 121 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 102
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilbeanie\_43 (DE5),

### **Summary by clusters:**

There are 14 clusters represented in this pham: CR2, CR3, singleton, CR1, CR4, CR5, DE1, CZ1, DF1, DE5, DA, CZ, DT, DP,

Info for manual annotations of cluster CR1:

- Start number 40 was manually annotated 3 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 40 was manually annotated 20 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 40 was manually annotated 5 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 40 was manually annotated 7 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 40 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CZ:

- Start number 38 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 38 was manually annotated 12 times for cluster CZ1.

Info for manual annotations of cluster DA:

- Start number 36 was manually annotated 1 time for cluster DA.
- Start number 38 was manually annotated 1 time for cluster DA.

Info for manual annotations of cluster DE1:

- Start number 37 was manually annotated 38 times for cluster DE1.

Info for manual annotations of cluster DE5:

- Start number 42 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DP:

- Start number 39 was manually annotated 6 times for cluster DP.

Info for manual annotations of cluster DT:

- Start number 38 was manually annotated 4 times for cluster DT.

### **Gene Information:**

Gene: Affeca\_42 Start: 39008, Stop: 39457, Start Num: 37

Candidate Starts for Affeca\_42:

(19, 38912), (Start: 37 @39008 has 38 MA's), (45, 39050), (49, 39065), (51, 39077), (58, 39128), (71, 39230), (83, 39353), (88, 39389), (94, 39440),

Gene: Angelicage\_42 Start: 39426, Stop: 39875, Start Num: 37

Candidate Starts for Angelicage\_42:

(19, 39330), (Start: 37 @39426 has 38 MA's), (45, 39468), (49, 39483), (51, 39495), (58, 39546), (71, 39648), (83, 39771), (88, 39807), (94, 39858),

Gene: Arti\_51 Start: 39161, Stop: 39586, Start Num: 40

Candidate Starts for Arti\_51:

(26, 39104), (30, 39125), (Start: 40 @39161 has 37 MA's), (61, 39332), (70, 39374),

Gene: Ashertheman\_45 Start: 39429, Stop: 39875, Start Num: 37

Candidate Starts for Ashertheman\_45:

(9, 39222), (19, 39327), (20, 39342), (Start: 37 @39429 has 38 MA's), (45, 39471), (49, 39486), (51, 39498), (71, 39651), (88, 39810), (94, 39858),

Gene: Baddon\_44 Start: 39967, Stop: 40413, Start Num: 37

Candidate Starts for Baddon\_44:

(9, 39760), (19, 39865), (20, 39880), (Start: 37 @39967 has 38 MA's), (45, 40009), (49, 40024), (51, 40036), (71, 40189), (88, 40348), (94, 40396),

Gene: Barsten\_45 Start: 39581, Stop: 40030, Start Num: 37

Candidate Starts for Barsten\_45:

(19, 39482), (Start: 37 @39581 has 38 MA's), (45, 39623), (49, 39638), (51, 39650), (58, 39701), (71, 39803), (83, 39926), (88, 39962), (94, 40013),

Gene: BatStarr\_24 Start: 21899, Stop: 22312, Start Num: 38

Candidate Starts for BatStarr\_24:

(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: Baumdotcom\_43 Start: 38818, Stop: 39264, Start Num: 37

Candidate Starts for Baumdotcom\_43:

(5, 38560), (9, 38611), (19, 38716), (20, 38731), (Start: 37 @38818 has 38 MA's), (45, 38860), (49, 38875), (51, 38887), (71, 39040), (88, 39199), (94, 39247),

Gene: BiPauneto\_53 Start: 38687, Stop: 39115, Start Num: 40  
Candidate Starts for BiPauneto\_53:  
(Start: 40 @38687 has 37 MA's), (61, 38858), (70, 38900), (82, 39026), (85, 39050),

Gene: Bialota\_24 Start: 21911, Stop: 22324, Start Num: 38  
Candidate Starts for Bialota\_24:  
(1, 21641), (16, 21800), (24, 21890), (Start: 38 @21911 has 19 MA's), (52, 21986), (53, 21995), (60, 22040), (63, 22103), (81, 22250),

Gene: Bizzy\_45 Start: 39124, Stop: 39570, Start Num: 37  
Candidate Starts for Bizzy\_45:  
(5, 38866), (9, 38917), (19, 39022), (20, 39037), (Start: 37 @39124 has 38 MA's), (45, 39166), (49, 39181), (51, 39193), (71, 39346), (88, 39505), (94, 39553),

Gene: BobBob\_42 Start: 38700, Stop: 39149, Start Num: 37  
Candidate Starts for BobBob\_42:  
(18, 38592), (19, 38601), (Start: 37 @38700 has 38 MA's), (45, 38742), (49, 38757), (51, 38769), (71, 38922), (83, 39045), (88, 39081), (94, 39132),

Gene: Bonum\_55 Start: 39814, Stop: 40242, Start Num: 40  
Candidate Starts for Bonum\_55:  
(Start: 40 @39814 has 37 MA's), (61, 39985), (86, 40183),

Gene: Bosnia\_24 Start: 21899, Stop: 22312, Start Num: 38  
Candidate Starts for Bosnia\_24:  
(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: Brandonk123\_46 Start: 39835, Stop: 40284, Start Num: 37  
Candidate Starts for Brandonk123\_46:  
(18, 39727), (19, 39736), (Start: 37 @39835 has 38 MA's), (45, 39877), (49, 39892), (51, 39904), (71, 40057), (83, 40180), (88, 40216), (94, 40267),

Gene: Buggaboo\_53 Start: 40293, Stop: 40721, Start Num: 40  
Candidate Starts for Buggaboo\_53:  
(Start: 40 @40293 has 37 MA's), (61, 40464), (86, 40662),

Gene: ChadMasterC\_45 Start: 40980, Stop: 41429, Start Num: 37  
Candidate Starts for ChadMasterC\_45:  
(19, 40881), (Start: 37 @40980 has 38 MA's), (45, 41022), (49, 41037), (51, 41049), (58, 41100), (71, 41202), (83, 41325), (88, 41361), (94, 41412),

Gene: Charming\_45 Start: 39336, Stop: 39785, Start Num: 37  
Candidate Starts for Charming\_45:  
(18, 39228), (19, 39237), (Start: 37 @39336 has 38 MA's), (45, 39378), (49, 39393), (51, 39405), (71, 39558), (83, 39681), (88, 39717), (94, 39768),

Gene: Commandaria\_52 Start: 40288, Stop: 40710, Start Num: 40  
Candidate Starts for Commandaria\_52:  
(Start: 40 @40288 has 37 MA's), (61, 40459), (77, 40606), (82, 40627), (86, 40657),

Gene: Dalilpop\_56 Start: 41448, Stop: 41870, Start Num: 40  
Candidate Starts for Dalilpop\_56:

(22, 41364), (25, 41379), (31, 41409), (33, 41418), (Start: 40 @41448 has 37 MA's), (55, 41538), (61, 41619), (70, 41661), (86, 41817), (89, 41856),

Gene: Derg\_42 Start: 38716, Stop: 39162, Start Num: 37

Candidate Starts for Derg\_42:

(9, 38509), (19, 38614), (20, 38629), (Start: 37 @38716 has 38 MA's), (45, 38758), (49, 38773), (51, 38785), (71, 38938), (88, 39097), (94, 39145),

Gene: Dogfish\_26 Start: 22166, Stop: 22594, Start Num: 38

Candidate Starts for Dogfish\_26:

(10, 22007), (15, 22034), (27, 22148), (Start: 36 @22160 has 1 MA's), (Start: 38 @22166 has 19 MA's), (50, 22226), (53, 22250), (58, 22283), (59, 22286), (63, 22358), (68, 22382),

Gene: Emianna\_51 Start: 40153, Stop: 40578, Start Num: 40

Candidate Starts for Emianna\_51:

(26, 40096), (30, 40117), (Start: 40 @40153 has 37 MA's), (61, 40324), (70, 40366),

Gene: Ennea\_58 Start: 41167, Stop: 41595, Start Num: 40

Candidate Starts for Ennea\_58:

(Start: 40 @41167 has 37 MA's), (55, 41257), (56, 41266), (61, 41338), (86, 41536),

Gene: Eviarto\_24 Start: 21899, Stop: 22312, Start Num: 38

Candidate Starts for Eviarto\_24:

(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: Ewald\_27 Start: 22552, Stop: 22968, Start Num: 38

Candidate Starts for Ewald\_27:

(12, 22375), (23, 22495), (24, 22498), (29, 22519), (Start: 38 @22552 has 19 MA's), (46, 22594), (49, 22606), (53, 22636), (58, 22669), (68, 22768),

Gene: Fitzgerald\_43 Start: 40238, Stop: 40687, Start Num: 37

Candidate Starts for Fitzgerald\_43:

(18, 40130), (19, 40139), (Start: 37 @40238 has 38 MA's), (45, 40280), (49, 40295), (51, 40307), (71, 40460), (83, 40583), (88, 40619), (94, 40670),

Gene: Flapper\_56 Start: 40879, Stop: 41316, Start Num: 40

Candidate Starts for Flapper\_56:

(22, 40795), (25, 40810), (31, 40840), (33, 40849), (Start: 40 @40879 has 37 MA's), (55, 40969), (61, 41050), (70, 41092), (75, 41152), (86, 41248),

Gene: Flatwoods\_45 Start: 39068, Stop: 39514, Start Num: 37

Candidate Starts for Flatwoods\_45:

(5, 38810), (9, 38861), (19, 38966), (20, 38981), (Start: 37 @39068 has 38 MA's), (45, 39110), (49, 39125), (51, 39137), (71, 39290), (88, 39449), (94, 39497),

Gene: Float294\_54 Start: 40609, Stop: 41037, Start Num: 40

Candidate Starts for Float294\_54:

(Start: 40 @40609 has 37 MA's), (55, 40699), (56, 40708), (61, 40780), (86, 40978),

Gene: Fosterous\_42 Start: 38797, Stop: 39246, Start Num: 37

Candidate Starts for Fosterous\_42:



(19, 38698), (Start: 37 @38797 has 38 MA's), (45, 38839), (49, 38854), (51, 38866), (71, 39019), (83, 39142), (88, 39178), (94, 39229),

Gene: Foxboro\_52 Start: 40659, Stop: 41084, Start Num: 40

Candidate Starts for Foxboro\_52:

(26, 40602), (30, 40623), (Start: 40 @40659 has 37 MA's), (61, 40830), (70, 40872),

Gene: Fryberger\_63 Start: 35468, Stop: 35857, Start Num: 39

Candidate Starts for Fryberger\_63:

(Start: 39 @35468 has 6 MA's), (45, 35504), (57, 35576), (68, 35681), (72, 35717), (76, 35759), (79, 35792),

Gene: Fury\_59 Start: 39331, Stop: 39744, Start Num: 40

Candidate Starts for Fury\_59:

(33, 39304), (Start: 40 @39331 has 37 MA's), (55, 39421), (56, 39430), (61, 39502), (70, 39544), (73, 39598), (82, 39670), (86, 39700),

Gene: GRU1\_41 Start: 32426, Stop: 32848, Start Num: 40

Candidate Starts for GRU1\_41:

(31, 32387), (34, 32399), (Start: 40 @32426 has 37 MA's), (55, 32516), (61, 32597), (70, 32639), (86, 32795), (89, 32834),

Gene: GTE5\_43 Start: 33736, Stop: 34173, Start Num: 40

Candidate Starts for GTE5\_43:

(22, 33652), (25, 33667), (31, 33697), (33, 33706), (Start: 40 @33736 has 37 MA's), (55, 33826), (61, 33907), (70, 33949), (75, 34009), (86, 34105),

Gene: GTE8\_40 Start: 33411, Stop: 33839, Start Num: 40

Candidate Starts for GTE8\_40:

(26, 33354), (30, 33375), (Start: 40 @33411 has 37 MA's), (61, 33582),

Gene: Gaea\_44 Start: 38712, Stop: 39158, Start Num: 37

Candidate Starts for Gaea\_44:

(4, 38436), (5, 38454), (9, 38505), (19, 38610), (20, 38625), (Start: 37 @38712 has 38 MA's), (45, 38754), (49, 38769), (51, 38781), (71, 38934), (88, 39093), (94, 39141),

Gene: Galadriel\_44 Start: 39604, Stop: 40053, Start Num: 37

Candidate Starts for Galadriel\_44:

(18, 39496), (19, 39505), (Start: 37 @39604 has 38 MA's), (45, 39646), (49, 39661), (51, 39673), (58, 39724), (71, 39826), (83, 39949), (88, 39985), (94, 40036),

Gene: Geodirt\_43 Start: 40216, Stop: 40665, Start Num: 37

Candidate Starts for Geodirt\_43:

(19, 40117), (Start: 37 @40216 has 38 MA's), (45, 40258), (49, 40273), (51, 40285), (71, 40438), (83, 40561), (88, 40597), (94, 40648),

Gene: Ghobes\_23 Start: 19556, Stop: 19969, Start Num: 38

Candidate Starts for Ghobes\_23:

(Start: 38 @19556 has 19 MA's), (44, 19589), (65, 19748), (67, 19751), (78, 19874),

Gene: Gmala1\_31 Start: 36456, Stop: 36854, Start Num: 41

Candidate Starts for Gmala1\_31:

(41, 36456), (43, 36459), (47, 36492), (56, 36555), (64, 36636), (70, 36657), (86, 36804), (91, 36849),

Gene: GordDuk1\_31 Start: 36394, Stop: 36792, Start Num: 41

Candidate Starts for GordDuk1\_31:

(41, 36394), (43, 36397), (47, 36430), (56, 36493), (64, 36574), (70, 36595), (86, 36742), (91, 36787),

Gene: GordTnk2\_31 Start: 36363, Stop: 36761, Start Num: 41

Candidate Starts for GordTnk2\_31:

(41, 36363), (43, 36366), (47, 36399), (56, 36462), (64, 36543), (70, 36564), (86, 36711), (91, 36756),

Gene: GrootJr\_53 Start: 39535, Stop: 39960, Start Num: 40

Candidate Starts for GrootJr\_53:

(26, 39478), (30, 39499), (Start: 40 @39535 has 37 MA's), (61, 39706), (70, 39748),

Gene: Guey18\_69 Start: 36988, Stop: 37377, Start Num: 39

Candidate Starts for Guey18\_69:

(Start: 39 @36988 has 6 MA's), (45, 37024), (57, 37096), (68, 37201), (72, 37237), (76, 37279), (79, 37312),

Gene: Gustavo\_44 Start: 38884, Stop: 39330, Start Num: 37

Candidate Starts for Gustavo\_44:

(9, 38677), (19, 38782), (20, 38797), (Start: 37 @38884 has 38 MA's), (45, 38926), (49, 38941), (51, 38953), (71, 39106), (88, 39265), (94, 39313),

Gene: Herod\_24 Start: 21899, Stop: 22312, Start Num: 38

Candidate Starts for Herod\_24:

(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: HubbaBubba\_49 Start: 35702, Stop: 36127, Start Num: 40

Candidate Starts for HubbaBubba\_49:

(32, 35669), (Start: 40 @35702 has 37 MA's), (61, 35873), (70, 35915), (82, 36041), (92, 36119),

Gene: Hugley\_24 Start: 21899, Stop: 22312, Start Num: 38

Candidate Starts for Hugley\_24:

(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: IDyn\_52 Start: 37131, Stop: 37559, Start Num: 40

Candidate Starts for IDyn\_52:

(32, 37098), (Start: 40 @37131 has 37 MA's), (61, 37302), (70, 37344), (82, 37470),

Gene: JKSyngboy\_42 Start: 39483, Stop: 39929, Start Num: 37

Candidate Starts for JKSyngboy\_42:

(8, 39273), (9, 39276), (11, 39291), (18, 39372), (19, 39381), (20, 39396), (Start: 37 @39483 has 38 MA's), (45, 39525), (49, 39540), (51, 39552), (71, 39705), (88, 39864), (94, 39912),

Gene: Jabberwocky\_43 Start: 40642, Stop: 41091, Start Num: 37

Candidate Starts for Jabberwocky\_43:

(19, 40543), (Start: 37 @40642 has 38 MA's), (45, 40684), (49, 40699), (51, 40711), (58, 40762), (71, 40864), (83, 40987), (88, 41023), (94, 41074),

Gene: Jifall16\_50 Start: 39807, Stop: 40232, Start Num: 40

Candidate Starts for Jifall16\_50:

(26, 39750), (30, 39771), (Start: 40 @39807 has 37 MA's), (61, 39978), (70, 40020),

Gene: Kabluna\_55 Start: 39229, Stop: 39657, Start Num: 40

Candidate Starts for Kabluna\_55:

(Start: 40 @39229 has 37 MA's), (61, 39400), (86, 39598),

Gene: Kamashten\_42 Start: 38577, Stop: 39026, Start Num: 37

Candidate Starts for Kamashten\_42:

(19, 38478), (Start: 37 @38577 has 38 MA's), (45, 38619), (49, 38634), (51, 38646), (71, 38799), (83, 38922), (88, 38958), (94, 39009),

Gene: Keelan\_61 Start: 35707, Stop: 36102, Start Num: 39

Candidate Starts for Keelan\_61:

(Start: 39 @35707 has 6 MA's), (57, 35815), (68, 35920), (72, 35956), (77, 36025), (80, 36037),

Gene: Kewpiedoll\_44 Start: 39518, Stop: 39967, Start Num: 37

Candidate Starts for Kewpiedoll\_44:

(19, 39419), (Start: 37 @39518 has 38 MA's), (45, 39560), (49, 39575), (51, 39587), (71, 39740), (83, 39863), (88, 39899), (94, 39950),

Gene: KidneyBean\_51 Start: 39931, Stop: 40356, Start Num: 40

Candidate Starts for KidneyBean\_51:

(26, 39874), (30, 39895), (Start: 40 @39931 has 37 MA's), (61, 40102), (70, 40144),

Gene: Kroos\_45 Start: 39624, Stop: 40070, Start Num: 37

Candidate Starts for Kroos\_45:

(5, 39366), (14, 39447), (19, 39522), (20, 39537), (Start: 37 @39624 has 38 MA's), (45, 39666), (49, 39681), (51, 39693), (71, 39846), (88, 40005), (94, 40053),

Gene: Kurt\_51 Start: 40168, Stop: 40593, Start Num: 40

Candidate Starts for Kurt\_51:

(26, 40111), (30, 40132), (Start: 40 @40168 has 37 MA's), (61, 40339), (70, 40381),

Gene: Kwobi\_45 Start: 39610, Stop: 40056, Start Num: 37

Candidate Starts for Kwobi\_45:

(5, 39352), (9, 39403), (19, 39508), (20, 39523), (Start: 37 @39610 has 38 MA's), (45, 39652), (49, 39667), (51, 39679), (71, 39832), (88, 39991), (94, 40039),

Gene: Lennon\_44 Start: 40321, Stop: 40770, Start Num: 37

Candidate Starts for Lennon\_44:

(19, 40225), (Start: 37 @40321 has 38 MA's), (45, 40363), (49, 40378), (51, 40390), (58, 40441), (71, 40543), (83, 40666), (88, 40702), (94, 40753),

Gene: LilHam\_42 Start: 38211, Stop: 38657, Start Num: 37

Candidate Starts for LilHam\_42:

(5, 37953), (9, 38004), (19, 38109), (20, 38124), (Start: 37 @38211 has 38 MA's), (45, 38253), (49, 38268), (51, 38280), (71, 38433), (88, 38592), (94, 38640),

Gene: Lilbeanie\_43 Start: 34683, Stop: 35099, Start Num: 42

Candidate Starts for Lilbeanie\_43:

(21, 34599), (35, 34656), (Start: 42 @34683 has 1 MA's), (54, 34767), (66, 34878), (75, 34962), (84, 35040), (90, 35082),

Gene: Lollipop1437\_57 Start: 41155, Stop: 41583, Start Num: 40  
Candidate Starts for Lollipop1437\_57:  
(22, 41074), (Start: 40 @41155 has 37 MA's), (55, 41245), (56, 41254), (61, 41326), (86, 41524),

Gene: Love\_48 Start: 40769, Stop: 41218, Start Num: 37  
Candidate Starts for Love\_48:  
(19, 40670), (Start: 37 @40769 has 38 MA's), (45, 40811), (49, 40826), (51, 40838), (71, 40991), (83, 41114), (88, 41150), (94, 41201),

Gene: Madeline\_24 Start: 22197, Stop: 22610, Start Num: 38  
Candidate Starts for Madeline\_24:  
(1, 21927), (16, 22086), (24, 22176), (Start: 38 @22197 has 19 MA's), (52, 22272), (53, 22281), (60, 22326), (63, 22389), (81, 22536),

Gene: Marietta\_53 Start: 37025, Stop: 37453, Start Num: 40  
Candidate Starts for Marietta\_53:  
(32, 36992), (Start: 40 @37025 has 37 MA's), (61, 37196), (70, 37238), (82, 37364),

Gene: McKinley\_46 Start: 40142, Stop: 40591, Start Num: 37  
Candidate Starts for McKinley\_46:  
(19, 40043), (Start: 37 @40142 has 38 MA's), (45, 40184), (49, 40199), (51, 40211), (71, 40364), (83, 40487), (88, 40523), (94, 40574),

Gene: MerCougar\_53 Start: 40431, Stop: 40859, Start Num: 40  
Candidate Starts for MerCougar\_53:  
(Start: 40 @40431 has 37 MA's), (61, 40602), (85, 40794), (86, 40800),

Gene: Meyran\_26 Start: 23021, Stop: 23446, Start Num: 38  
Candidate Starts for Meyran\_26:  
(Start: 38 @23021 has 19 MA's), (45, 23060), (49, 23075), (53, 23105), (68, 23237), (74, 23297),

Gene: MoontowerMania\_44 Start: 39977, Stop: 40426, Start Num: 37  
Candidate Starts for MoontowerMania\_44:  
(19, 39878), (Start: 37 @39977 has 38 MA's), (45, 40019), (49, 40034), (51, 40046), (58, 40097), (71, 40199), (83, 40322), (88, 40358), (94, 40409),

Gene: NadineRae\_51 Start: 36272, Stop: 36697, Start Num: 40  
Candidate Starts for NadineRae\_51:  
(32, 36239), (Start: 40 @36272 has 37 MA's), (61, 36443), (70, 36485), (82, 36611),

Gene: NatB6\_51 Start: 39225, Stop: 39650, Start Num: 40  
Candidate Starts for NatB6\_51:  
(26, 39168), (30, 39189), (Start: 40 @39225 has 37 MA's), (61, 39396), (70, 39438),

Gene: Nordenberg\_39 Start: 38962, Stop: 39411, Start Num: 37  
Candidate Starts for Nordenberg\_39:  
(18, 38854), (19, 38863), (Start: 37 @38962 has 38 MA's), (45, 39004), (49, 39019), (51, 39031), (71, 39184), (83, 39307), (88, 39343), (94, 39394),

Gene: NosilaM\_55 Start: 40126, Stop: 40554, Start Num: 40  
Candidate Starts for NosilaM\_55:  
(Start: 40 @40126 has 37 MA's), (61, 40297), (86, 40495),

Gene: NovumRegina\_51 Start: 39534, Stop: 39959, Start Num: 40  
Candidate Starts for NovumRegina\_51:  
(26, 39477), (30, 39498), (Start: 40 @39534 has 37 MA's), (61, 39705), (70, 39747),

Gene: Nyceirae\_28 Start: 22758, Stop: 23174, Start Num: 38  
Candidate Starts for Nyceirae\_28:  
(21, 22719), (24, 22731), (Start: 36 @22752 has 1 MA's), (Start: 38 @22758 has 19 MA's), (45, 22797), (48, 22809), (50, 22818), (53, 22842), (58, 22875), (63, 22950), (68, 22974),

Gene: Nymphadora\_24 Start: 21899, Stop: 22312, Start Num: 38  
Candidate Starts for Nymphadora\_24:  
(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: Ohgeesy\_24 Start: 21522, Stop: 21935, Start Num: 38  
Candidate Starts for Ohgeesy\_24:  
(1, 21252), (16, 21411), (17, 21444), (24, 21501), (Start: 38 @21522 has 19 MA's), (52, 21597), (53, 21606), (60, 21651), (63, 21714), (81, 21861),

Gene: Outis\_53 Start: 40125, Stop: 40553, Start Num: 40  
Candidate Starts for Outis\_53:  
(Start: 40 @40125 has 37 MA's), (61, 40296), (85, 40488), (86, 40494),

Gene: Paries\_47 Start: 40431, Stop: 40880, Start Num: 37  
Candidate Starts for Paries\_47:  
(18, 40323), (19, 40332), (Start: 37 @40431 has 38 MA's), (45, 40473), (49, 40488), (51, 40500), (58, 40551), (71, 40653), (83, 40776), (88, 40812), (94, 40863),

Gene: Patio\_55 Start: 40391, Stop: 40819, Start Num: 40  
Candidate Starts for Patio\_55:  
(Start: 40 @40391 has 37 MA's), (55, 40481), (56, 40490), (61, 40562), (86, 40760),

Gene: Phomeo\_50 Start: 39803, Stop: 40228, Start Num: 40  
Candidate Starts for Phomeo\_50:  
(26, 39746), (30, 39767), (Start: 40 @39803 has 37 MA's), (61, 39974), (70, 40016),

Gene: Pleakley\_59 Start: 39332, Stop: 39745, Start Num: 40  
Candidate Starts for Pleakley\_59:  
(33, 39305), (Start: 40 @39332 has 37 MA's), (55, 39422), (56, 39431), (61, 39503), (70, 39545), (73, 39599), (82, 39671), (86, 39701),

Gene: Polly\_23 Start: 21339, Stop: 21752, Start Num: 38  
Candidate Starts for Polly\_23:  
(2, 21093), (3, 21096), (7, 21168), (12, 21195), (18, 21270), (24, 21318), (Start: 38 @21339 has 19 MA's), (52, 21414), (53, 21423), (81, 21678), (84, 21696),

Gene: Ribeye\_45 Start: 40042, Stop: 40488, Start Num: 37  
Candidate Starts for Ribeye\_45:  
(5, 39784), (9, 39835), (19, 39940), (20, 39955), (Start: 37 @40042 has 38 MA's), (45, 40084), (49, 40099), (51, 40111), (71, 40264), (88, 40423), (94, 40471),

Gene: Rofo\_45 Start: 39757, Stop: 40206, Start Num: 37  
Candidate Starts for Rofo\_45:

(18, 39649), (19, 39658), (Start: 37 @39757 has 38 MA's), (45, 39799), (49, 39814), (51, 39826), (71, 39979), (83, 40102), (88, 40138), (94, 40189),

Gene: Ronaldo\_66 Start: 36367, Stop: 36756, Start Num: 39

Candidate Starts for Ronaldo\_66:

(Start: 39 @36367 has 6 MA's), (45, 36403), (57, 36475), (68, 36580), (72, 36616), (76, 36658), (79, 36691),

Gene: Sanjuju\_43 Start: 40371, Stop: 40820, Start Num: 37

Candidate Starts for Sanjuju\_43:

(18, 40263), (19, 40272), (Start: 37 @40371 has 38 MA's), (45, 40413), (49, 40428), (51, 40440), (71, 40593), (83, 40716), (88, 40752), (94, 40803),

Gene: Sapo\_22 Start: 19503, Stop: 19937, Start Num: 36

Candidate Starts for Sapo\_22:

(Start: 36 @19503 has 1 MA's), (49, 19560), (69, 19713), (87, 19872),

Gene: Saronaya\_44 Start: 38884, Stop: 39330, Start Num: 37

Candidate Starts for Saronaya\_44:

(9, 38677), (19, 38782), (20, 38797), (Start: 37 @38884 has 38 MA's), (45, 38926), (49, 38941), (51, 38953), (71, 39106), (88, 39265), (94, 39313),

Gene: SchottB\_43 Start: 39884, Stop: 40330, Start Num: 37

Candidate Starts for SchottB\_43:

(5, 39626), (9, 39677), (19, 39782), (20, 39797), (Start: 37 @39884 has 38 MA's), (45, 39926), (49, 39941), (51, 39953), (71, 40106), (88, 40265), (94, 40313),

Gene: Shivanishola\_44 Start: 38638, Stop: 39087, Start Num: 37

Candidate Starts for Shivanishola\_44:

(19, 38539), (Start: 37 @38638 has 38 MA's), (45, 38680), (49, 38695), (51, 38707), (58, 38758), (71, 38860), (83, 38983), (88, 39019), (94, 39070),

Gene: Sitar\_44 Start: 40321, Stop: 40770, Start Num: 37

Candidate Starts for Sitar\_44:

(19, 40225), (Start: 37 @40321 has 38 MA's), (45, 40363), (49, 40378), (51, 40390), (58, 40441), (71, 40543), (83, 40666), (88, 40702), (94, 40753),

Gene: Skysand\_54 Start: 40611, Stop: 41039, Start Num: 40

Candidate Starts for Skysand\_54:

(Start: 40 @40611 has 37 MA's), (55, 40701), (56, 40710), (86, 40980),

Gene: StarStruck\_53 Start: 40125, Stop: 40553, Start Num: 40

Candidate Starts for StarStruck\_53:

(Start: 40 @40125 has 37 MA's), (61, 40296), (85, 40488), (86, 40494),

Gene: StorminNorm\_44 Start: 38975, Stop: 39421, Start Num: 37

Candidate Starts for StorminNorm\_44:

(3, 38687), (14, 38798), (19, 38873), (Start: 37 @38975 has 38 MA's), (45, 39017), (49, 39032), (51, 39044), (71, 39197), (88, 39356), (94, 39404),

Gene: Stultus\_43 Start: 39274, Stop: 39723, Start Num: 37

Candidate Starts for Stultus\_43:

(19, 39175), (Start: 37 @39274 has 38 MA's), (45, 39316), (49, 39331), (51, 39343), (71, 39496), (83, 39619), (88, 39655), (94, 39706),

Gene: Sukkupi\_52 Start: 38578, Stop: 39006, Start Num: 40

Candidate Starts for Sukkupi\_52:

(28, 38533), (29, 38536), (32, 38545), (Start: 40 @38578 has 37 MA's), (61, 38749), (70, 38791), (82, 38917), (85, 38941),

Gene: SuperSulley\_53 Start: 40293, Stop: 40721, Start Num: 40

Candidate Starts for SuperSulley\_53:

(Start: 40 @40293 has 37 MA's), (61, 40464), (86, 40662),

Gene: Tangent\_45 Start: 39348, Stop: 39797, Start Num: 37

Candidate Starts for Tangent\_45:

(18, 39240), (19, 39249), (Start: 37 @39348 has 38 MA's), (45, 39390), (49, 39405), (51, 39417), (71, 39570), (83, 39693), (88, 39729), (94, 39780),

Gene: Tangerine\_44 Start: 38756, Stop: 39202, Start Num: 37

Candidate Starts for Tangerine\_44:

(5, 38498), (9, 38549), (19, 38654), (20, 38669), (Start: 37 @38756 has 38 MA's), (45, 38798), (49, 38813), (51, 38825), (71, 38978), (88, 39137), (94, 39185),

Gene: ThankyouJordi\_23 Start: 21874, Stop: 22287, Start Num: 38

Candidate Starts for ThankyouJordi\_23:

(2, 21628), (6, 21676), (7, 21703), (18, 21805), (24, 21853), (Start: 38 @21874 has 19 MA's), (52, 21949), (53, 21958), (60, 22003), (81, 22213),

Gene: Thing3\_42 Start: 38577, Stop: 39026, Start Num: 37

Candidate Starts for Thing3\_42:

(19, 38478), (Start: 37 @38577 has 38 MA's), (45, 38619), (49, 38634), (51, 38646), (71, 38799), (83, 38922), (88, 38958), (94, 39009),

Gene: TimTam\_24 Start: 21899, Stop: 22312, Start Num: 38

Candidate Starts for TimTam\_24:

(1, 21629), (12, 21755), (24, 21878), (Start: 38 @21899 has 19 MA's), (52, 21974), (53, 21983), (60, 22028), (63, 22091), (81, 22238),

Gene: Tracker\_51 Start: 38952, Stop: 39377, Start Num: 40

Candidate Starts for Tracker\_51:

(26, 38895), (30, 38916), (Start: 40 @38952 has 37 MA's), (61, 39123), (70, 39165),

Gene: Turuncu\_56 Start: 40541, Stop: 40978, Start Num: 40

Candidate Starts for Turuncu\_56:

(22, 40457), (25, 40472), (31, 40502), (33, 40511), (Start: 40 @40541 has 37 MA's), (55, 40631), (61, 40712), (70, 40754), (75, 40814), (86, 40910),

Gene: Tycho\_44 Start: 38843, Stop: 39289, Start Num: 37

Candidate Starts for Tycho\_44:

(3, 38555), (14, 38666), (19, 38741), (20, 38756), (Start: 37 @38843 has 38 MA's), (45, 38885), (49, 38900), (51, 38912), (71, 39065), (88, 39224), (94, 39272),

Gene: VanLee\_31 Start: 26056, Stop: 26493, Start Num: 38

Candidate Starts for VanLee\_31:

(13, 25918), (23, 26029), (Start: 38 @26056 has 19 MA's), (45, 26095), (49, 26110), (50, 26116), (53, 26140), (62, 26239), (68, 26272), (93, 26482),

Gene: Vivi2\_47 Start: 40374, Stop: 40823, Start Num: 37

Candidate Starts for Vivi2\_47:

(19, 40275), (Start: 37 @40374 has 38 MA's), (45, 40416), (49, 40431), (51, 40443), (71, 40596), (83, 40719), (88, 40755), (94, 40806),

Gene: Volt\_66 Start: 36531, Stop: 36920, Start Num: 39

Candidate Starts for Volt\_66:

(Start: 39 @36531 has 6 MA's), (45, 36567), (57, 36639), (68, 36744), (72, 36780), (76, 36822), (79, 36855),

Gene: Vordorf\_27 Start: 22487, Stop: 22912, Start Num: 38

Candidate Starts for Vordorf\_27:

(Start: 38 @22487 has 19 MA's), (45, 22526), (49, 22541), (53, 22571), (68, 22703), (74, 22763),

Gene: WelcomeAyanna\_23 Start: 21874, Stop: 22287, Start Num: 38

Candidate Starts for WelcomeAyanna\_23:

(2, 21628), (6, 21676), (7, 21703), (18, 21805), (24, 21853), (Start: 38 @21874 has 19 MA's), (52, 21949), (53, 21958), (60, 22003), (81, 22213),

Gene: Wheezy\_51 Start: 39157, Stop: 39582, Start Num: 40

Candidate Starts for Wheezy\_51:

(26, 39100), (30, 39121), (Start: 40 @39157 has 37 MA's), (61, 39328), (70, 39370),

Gene: WhoseManz\_52 Start: 36638, Stop: 37066, Start Num: 40

Candidate Starts for WhoseManz\_52:

(32, 36605), (Start: 40 @36638 has 37 MA's), (61, 36809), (70, 36851), (82, 36977),

Gene: Yndexa\_52 Start: 38578, Stop: 39006, Start Num: 40

Candidate Starts for Yndexa\_52:

(28, 38533), (29, 38536), (32, 38545), (Start: 40 @38578 has 37 MA's), (61, 38749), (70, 38791), (82, 38917), (85, 38941),

Gene: YorkOnyx\_45 Start: 39100, Stop: 39546, Start Num: 37

Candidate Starts for YorkOnyx\_45:

(9, 38893), (19, 38998), (20, 39013), (Start: 37 @39100 has 38 MA's), (45, 39142), (49, 39157), (51, 39169), (71, 39322), (88, 39481), (94, 39529),

Gene: Ziko\_66 Start: 36353, Stop: 36742, Start Num: 39

Candidate Starts for Ziko\_66:

(Start: 39 @36353 has 6 MA's), (45, 36389), (57, 36461), (68, 36566), (72, 36602), (76, 36644), (79, 36677),

Gene: Zirinka\_24 Start: 21911, Stop: 22324, Start Num: 38

Candidate Starts for Zirinka\_24:

(1, 21641), (16, 21800), (24, 21890), (Start: 38 @21911 has 19 MA's), (52, 21986), (53, 21995), (60, 22040), (63, 22103), (81, 22250),