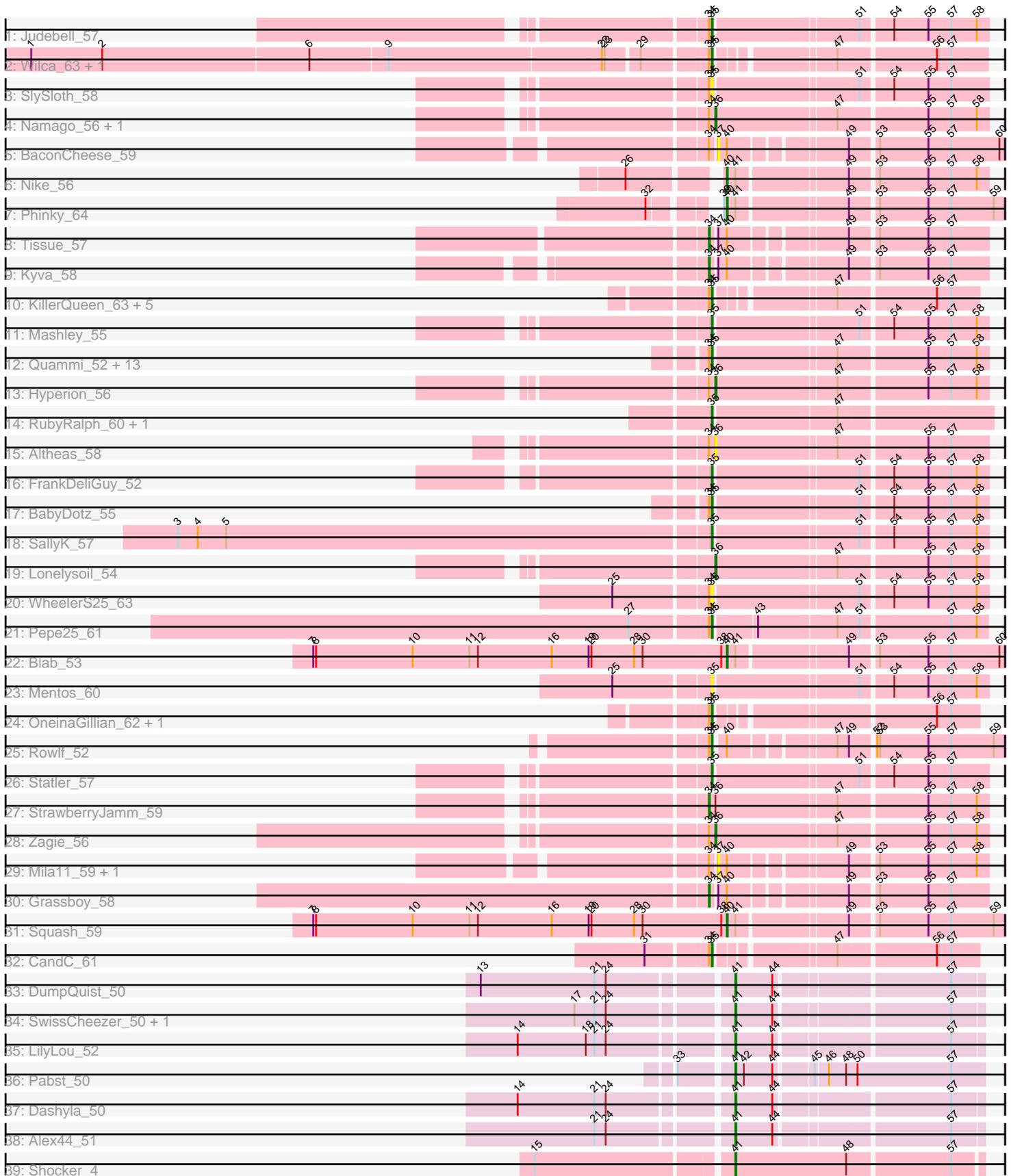


Pham 291167



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 291167 Report

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

Pham number 291167 has 63 members, 8 are drafts.

Phages represented in each track:

- Track 1 : Judebell\_57
- Track 2 : Wilca\_63, BirdInFrench\_63
- Track 3 : SlySloth\_58
- Track 4 : Namago\_56, Gazebo\_55
- Track 5 : BaconCheese\_59
- Track 6 : Nike\_56
- Track 7 : Phinky\_64
- Track 8 : Tissue\_57
- Track 9 : Kyva\_58
- Track 10 : KillerQueen\_63, Fregley\_62, Romm\_64, Kelcole\_60, Tempo\_62, RobinRose\_64
- Track 11 : Mashley\_55
- Track 12 : Quammi\_52, DonaldDuck\_54, Wheelie\_54, Viceroy\_53, Rudy\_52, EverythinBagel\_53, Casend\_55, Wayne3\_56, Jehoshaphat\_56, Llemily\_54, Phabia\_54, Sillytadpoles\_55, Zhafia\_57, Teehee\_55
- Track 13 : Hyperion\_56
- Track 14 : RubyRalph\_60, Fransoyer\_58
- Track 15 : Altheas\_58
- Track 16 : FrankDeliGuy\_52
- Track 17 : BabyDotz\_55
- Track 18 : SallyK\_57
- Track 19 : Lonelysoil\_54
- Track 20 : WheelerS25\_63
- Track 21 : Pepe25\_61
- Track 22 : Blab\_53
- Track 23 : Mentos\_60
- Track 24 : OneinaGillian\_62, Marcie\_67
- Track 25 : Rowlf\_52
- Track 26 : Statler\_57
- Track 27 : StrawberryJamm\_59
- Track 28 : Zagie\_56
- Track 29 : Mila11\_59, MorillMayhem\_57
- Track 30 : Grassboy\_58
- Track 31 : Squash\_59
- Track 32 : CandC\_61
- Track 33 : DumpQuist\_50
- Track 34 : SwissCheezer\_50, ArMaWen\_50

- Track 35 : LilyLou\_52
- Track 36 : Pabst\_50
- Track 37 : Dashyla\_50
- Track 38 : Alex44\_51
- Track 39 : Shocker\_4

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

The start number called the most often in the published annotations is 35, it was called in 34 of the 55 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- BabyDotz\_55, BirdInFrench\_63, CandC\_61, Casend\_55, DonaldDuck\_54, EverythinBagel\_53, FrankDeliGuy\_52, Fransoyer\_58, Fregley\_62, Jehoshaphat\_56, Judebell\_57, Kelcole\_60, KillerQueen\_63, Llemily\_54, Marcie\_67, Mashley\_55, Mentos\_60, OneinaGillian\_62, Pepe25\_61, Phabia\_54, Quammi\_52, RobinRose\_64, Romm\_64, Rowlf\_52, RubyRalph\_60, Rudy\_52, SallyK\_57, Sillytadpoles\_55, SlySloth\_58, Statler\_57, Teehee\_55, Tempo\_62, Viceroy\_53, Wayne3\_56, WheelerS25\_63, Wheelie\_54, Wilca\_63, Zhafia\_57,

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

- 

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

- Alex44\_51, Altheas\_58, ArMaWen\_50, BaconCheese\_59, Blab\_53, Dashyla\_50, DumpQuist\_50, Gazebo\_55, Grassboy\_58, Hyperion\_56, Kyva\_58, LilyLou\_52, Lonelysoil\_54, Mila11\_59, MorillMayhem\_57, Namago\_56, Nike\_56, Pabst\_50, Phinky\_64, Shocker\_4, Squash\_59, StrawberryJamm\_59, SwissCheezer\_50, Tissue\_57, Zagie\_56,

### **Summary by start number:**

Start 34:

- Found in 43 of 63 ( 68.3% ) of genes in pham
- Manual Annotations of this start: 4 of 55
- Called 9.3% of time when present
- Phage (with cluster) where this start called: Grassboy\_58 (EG), Kyva\_58 (EG), StrawberryJamm\_59 (EG), Tissue\_57 (EG),

Start 35:

- Found in 38 of 63 ( 60.3% ) of genes in pham
- Manual Annotations of this start: 34 of 55
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BabyDotz\_55 (EG), BirdInFrench\_63 (EG), CandC\_61 (EG), Casend\_55 (EG), DonaldDuck\_54 (EG), EverythinBagel\_53 (EG), FrankDeliGuy\_52 (EG), Fransoyer\_58 (EG), Fregley\_62 (EG), Jehoshaphat\_56 (EG), Judebell\_57 (EG), Kelcole\_60 (EG), KillerQueen\_63 (EG), Llemily\_54 (EG), Marcie\_67 (EG), Mashley\_55 (EG), Mentos\_60 (EG), OneinaGillian\_62 (EG), Pepe25\_61 (EG), Phabia\_54 (EG), Quammi\_52 (EG), RobinRose\_64 (EG), Romm\_64 (EG), Rowlf\_52 (EG), RubyRalph\_60 (EG), Rudy\_52 (EG), SallyK\_57

(EG), Sillytadpoles\_55 (EG), SlySloth\_58 (EG), Statler\_57 (EG), Teehee\_55 (EG), Tempo\_62 (EG), Viceroy\_53 (EG), Wayne3\_56 (EG), WheelerS25\_63 (EG), Wheelie\_54 (EG), Wilca\_63 (EG), Zhafia\_57 (EG),

Start 36:

- Found in 7 of 63 ( 11.1% ) of genes in pham
- Manual Annotations of this start: 5 of 55
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Altheas\_58 (EG), Gazebo\_55 (EG), Hyperion\_56 (EG), Lonelysoil\_54 (EG), Namago\_56 (EG), Zagie\_56 (EG),

Start 37:

- Found in 6 of 63 ( 9.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: BaconCheese\_59 (EG), Mila11\_59 (EG), MorillMayhem\_57 (EG),

Start 40:

- Found in 11 of 63 ( 17.5% ) of genes in pham
- Manual Annotations of this start: 4 of 55
- Called 36.4% of time when present
- Phage (with cluster) where this start called: Blab\_53 (EG), Nike\_56 (EG), Phinky\_64 (EG), Squash\_59 (EG),

Start 41:

- Found in 12 of 63 ( 19.0% ) of genes in pham
- Manual Annotations of this start: 8 of 55
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Alex44\_51 (EK1), ArMaWen\_50 (EK1), Dashyla\_50 (EK1), DumpQuist\_50 (EK1), LilyLou\_52 (EK1), Pabst\_50 (EK1), Shocker\_4 (singleton), SwissCheezer\_50 (EK1),

### **Summary by clusters:**

There are 3 clusters represented in this pham: EG, singleton, EK1,

Info for manual annotations of cluster EG:

- Start number 34 was manually annotated 4 times for cluster EG.
- Start number 35 was manually annotated 34 times for cluster EG.
- Start number 36 was manually annotated 5 times for cluster EG.
- Start number 40 was manually annotated 4 times for cluster EG.

Info for manual annotations of cluster EK1:

- Start number 41 was manually annotated 7 times for cluster EK1.

### **Gene Information:**

Gene: Alex44\_51 Start: 51379, Stop: 51618, Start Num: 41

Candidate Starts for Alex44\_51:

(21, 51250), (24, 51262), (Start: 41 @51379 has 8 MA's), (44, 51418), (57, 51586),

Gene: Altheas\_58 Start: 42617, Stop: 42345, Start Num: 36

Candidate Starts for Altheas\_58:

(Start: 34 @42623 has 4 MA's), (Start: 36 @42617 has 5 MA's), (47, 42494), (55, 42407), (57, 42383),

Gene: ArMaWen\_50 Start: 50919, Stop: 51158, Start Num: 41

Candidate Starts for ArMaWen\_50:

(17, 50769), (21, 50790), (24, 50802), (Start: 41 @50919 has 8 MA's), (44, 50958), (57, 51126),

Gene: BabyDotz\_55 Start: 42840, Stop: 42568, Start Num: 35

Candidate Starts for BabyDotz\_55:

(Start: 34 @42843 has 4 MA's), (Start: 35 @42840 has 34 MA's), (51, 42696), (54, 42666), (55, 42630), (57, 42606), (58, 42579),

Gene: BaconCheese\_59 Start: 43496, Stop: 43224, Start Num: 37

Candidate Starts for BaconCheese\_59:

(Start: 34 @43502 has 4 MA's), (37, 43496), (Start: 40 @43487 has 4 MA's), (49, 43379), (53, 43355), (55, 43304), (57, 43280), (60, 43229),

Gene: BirdInFrench\_63 Start: 42918, Stop: 42661, Start Num: 35

Candidate Starts for BirdInFrench\_63:

(1, 43611), (2, 43536), (6, 43320), (9, 43239), (22, 43017), (23, 43014), (29, 42984), (Start: 34 @42921 has 4 MA's), (Start: 35 @42918 has 34 MA's), (47, 42810), (56, 42714), (57, 42699),

Gene: Blab\_53 Start: 41667, Stop: 41395, Start Num: 40

Candidate Starts for Blab\_53:

(7, 42102), (8, 42099), (10, 41997), (11, 41937), (12, 41928), (16, 41850), (19, 41811), (20, 41808), (28, 41763), (30, 41754), (38, 41673), (Start: 40 @41667 has 4 MA's), (Start: 41 @41658 has 8 MA's), (49, 41550), (53, 41526), (55, 41475), (57, 41451), (60, 41400),

Gene: CandC\_61 Start: 42136, Stop: 41888, Start Num: 35

Candidate Starts for CandC\_61:

(31, 42196), (Start: 34 @42139 has 4 MA's), (Start: 35 @42136 has 34 MA's), (47, 42028), (56, 41932), (57, 41917),

Gene: Casend\_55 Start: 42251, Stop: 41979, Start Num: 35

Candidate Starts for Casend\_55:

(Start: 34 @42254 has 4 MA's), (Start: 35 @42251 has 34 MA's), (47, 42128), (55, 42041), (57, 42017), (58, 41990),

Gene: Dashyla\_50 Start: 51053, Stop: 51292, Start Num: 41

Candidate Starts for Dashyla\_50:

(14, 50843), (21, 50924), (24, 50936), (Start: 41 @51053 has 8 MA's), (44, 51092), (57, 51260),

Gene: DonaldDuck\_54 Start: 41600, Stop: 41328, Start Num: 35

Candidate Starts for DonaldDuck\_54:

(Start: 34 @41603 has 4 MA's), (Start: 35 @41600 has 34 MA's), (47, 41477), (55, 41390), (57, 41366), (58, 41339),

Gene: DumpQuist\_50 Start: 50907, Stop: 51146, Start Num: 41

Candidate Starts for DumpQuist\_50:

(13, 50658), (21, 50778), (24, 50790), (Start: 41 @50907 has 8 MA's), (44, 50946), (57, 51114),

Gene: EverythinBagel\_53 Start: 41961, Stop: 41689, Start Num: 35  
Candidate Starts for EverythinBagel\_53:  
(Start: 34 @41964 has 4 MA's), (Start: 35 @41961 has 34 MA's), (47, 41838), (55, 41751), (57, 41727),  
(58, 41700),

Gene: FrankDeliGuy\_52 Start: 41773, Stop: 41501, Start Num: 35  
Candidate Starts for FrankDeliGuy\_52:  
(Start: 35 @41773 has 34 MA's), (51, 41629), (54, 41599), (55, 41563), (57, 41539), (58, 41512),

Gene: Fransoyer\_58 Start: 44153, Stop: 43872, Start Num: 35  
Candidate Starts for Fransoyer\_58:  
(Start: 35 @44153 has 34 MA's), (47, 44027),

Gene: Fregley\_62 Start: 42305, Stop: 42057, Start Num: 35  
Candidate Starts for Fregley\_62:  
(Start: 34 @42308 has 4 MA's), (Start: 35 @42305 has 34 MA's), (47, 42197), (56, 42101), (57, 42086),

Gene: Gazebo\_55 Start: 42275, Stop: 42003, Start Num: 36  
Candidate Starts for Gazebo\_55:  
(Start: 34 @42281 has 4 MA's), (Start: 36 @42275 has 5 MA's), (47, 42152), (55, 42065), (57, 42041),  
(58, 42014),

Gene: Grassboy\_58 Start: 42646, Stop: 42386, Start Num: 34  
Candidate Starts for Grassboy\_58:  
(Start: 34 @42646 has 4 MA's), (37, 42640), (Start: 40 @42631 has 4 MA's), (49, 42523), (53, 42499),  
(55, 42448), (57, 42424),

Gene: Hyperion\_56 Start: 42456, Stop: 42184, Start Num: 36  
Candidate Starts for Hyperion\_56:  
(Start: 34 @42459 has 4 MA's), (Start: 36 @42456 has 5 MA's), (47, 42333), (55, 42246), (57, 42222),  
(58, 42195),

Gene: Jehoshaphat\_56 Start: 42519, Stop: 42247, Start Num: 35  
Candidate Starts for Jehoshaphat\_56:  
(Start: 34 @42522 has 4 MA's), (Start: 35 @42519 has 34 MA's), (47, 42396), (55, 42309), (57, 42285),  
(58, 42258),

Gene: Judebell\_57 Start: 42165, Stop: 41893, Start Num: 35  
Candidate Starts for Judebell\_57:  
(Start: 34 @42168 has 4 MA's), (Start: 35 @42165 has 34 MA's), (51, 42021), (54, 41991), (55, 41955),  
(57, 41931), (58, 41904),

Gene: Kelcole\_60 Start: 42364, Stop: 42116, Start Num: 35  
Candidate Starts for Kelcole\_60:  
(Start: 34 @42367 has 4 MA's), (Start: 35 @42364 has 34 MA's), (47, 42256), (56, 42160), (57, 42145),

Gene: KillerQueen\_63 Start: 42614, Stop: 42366, Start Num: 35  
Candidate Starts for KillerQueen\_63:  
(Start: 34 @42617 has 4 MA's), (Start: 35 @42614 has 34 MA's), (47, 42506), (56, 42410), (57, 42395),

Gene: Kyva\_58 Start: 42703, Stop: 42443, Start Num: 34  
Candidate Starts for Kyva\_58:

(Start: 34 @42703 has 4 MA's), (37, 42697), (Start: 40 @42688 has 4 MA's), (49, 42580), (53, 42556), (55, 42505), (57, 42481),

Gene: LilyLou\_52 Start: 51371, Stop: 51610, Start Num: 41

Candidate Starts for LilyLou\_52:

(14, 51161), (18, 51233), (21, 51242), (24, 51254), (Start: 41 @51371 has 8 MA's), (44, 51410), (57, 51578),

Gene: Llemily\_54 Start: 41295, Stop: 41023, Start Num: 35

Candidate Starts for Llemily\_54:

(Start: 34 @41298 has 4 MA's), (Start: 35 @41295 has 34 MA's), (47, 41172), (55, 41085), (57, 41061), (58, 41034),

Gene: Lonelysoil\_54 Start: 41648, Stop: 41376, Start Num: 36

Candidate Starts for Lonelysoil\_54:

(Start: 36 @41648 has 5 MA's), (47, 41525), (55, 41438), (57, 41414), (58, 41387),

Gene: Marcie\_67 Start: 43263, Stop: 43015, Start Num: 35

Candidate Starts for Marcie\_67:

(Start: 34 @43266 has 4 MA's), (Start: 35 @43263 has 34 MA's), (56, 43059), (57, 43044),

Gene: Mashley\_55 Start: 42232, Stop: 41960, Start Num: 35

Candidate Starts for Mashley\_55:

(Start: 35 @42232 has 34 MA's), (51, 42088), (54, 42058), (55, 42022), (57, 41998), (58, 41971),

Gene: Mentos\_60 Start: 43466, Stop: 43194, Start Num: 35

Candidate Starts for Mentos\_60:

(25, 43562), (Start: 35 @43466 has 34 MA's), (51, 43322), (54, 43292), (55, 43256), (57, 43232), (58, 43205),

Gene: Mila11\_59 Start: 43685, Stop: 43431, Start Num: 37

Candidate Starts for Mila11\_59:

(Start: 34 @43691 has 4 MA's), (37, 43685), (Start: 40 @43676 has 4 MA's), (49, 43568), (53, 43544), (55, 43493), (57, 43469), (58, 43442),

Gene: MorillMayhem\_57 Start: 42562, Stop: 42308, Start Num: 37

Candidate Starts for MorillMayhem\_57:

(Start: 34 @42568 has 4 MA's), (37, 42562), (Start: 40 @42553 has 4 MA's), (49, 42445), (53, 42421), (55, 42370), (57, 42346), (58, 42319),

Gene: Namago\_56 Start: 41635, Stop: 41363, Start Num: 36

Candidate Starts for Namago\_56:

(Start: 34 @41641 has 4 MA's), (Start: 36 @41635 has 5 MA's), (47, 41512), (55, 41425), (57, 41401), (58, 41374),

Gene: Nike\_56 Start: 42603, Stop: 42349, Start Num: 40

Candidate Starts for Nike\_56:

(26, 42684), (Start: 40 @42603 has 4 MA's), (Start: 41 @42594 has 8 MA's), (49, 42486), (53, 42462), (55, 42411), (57, 42387), (58, 42360),

Gene: OneinaGillian\_62 Start: 42266, Stop: 42018, Start Num: 35

Candidate Starts for OneinaGillian\_62:

(Start: 34 @42269 has 4 MA's), (Start: 35 @42266 has 34 MA's), (56, 42062), (57, 42047),

Gene: Pabst\_50 Start: 50450, Stop: 50701, Start Num: 41

Candidate Starts for Pabst\_50:

(33, 50399), (Start: 41 @50450 has 8 MA's), (42, 50459), (44, 50489), (45, 50525), (46, 50537), (48, 50555), (50, 50567), (57, 50666),

Gene: Pepe25\_61 Start: 41821, Stop: 41549, Start Num: 35

Candidate Starts for Pepe25\_61:

(27, 41899), (Start: 34 @41824 has 4 MA's), (Start: 35 @41821 has 34 MA's), (43, 41779), (47, 41698), (51, 41677), (57, 41587), (58, 41560),

Gene: Phabia\_54 Start: 41710, Stop: 41438, Start Num: 35

Candidate Starts for Phabia\_54:

(Start: 34 @41713 has 4 MA's), (Start: 35 @41710 has 34 MA's), (47, 41587), (55, 41500), (57, 41476), (58, 41449),

Gene: Phinky\_64 Start: 44342, Stop: 44070, Start Num: 40

Candidate Starts for Phinky\_64:

(32, 44396), (39, 44345), (Start: 40 @44342 has 4 MA's), (Start: 41 @44333 has 8 MA's), (49, 44225), (53, 44201), (55, 44150), (57, 44126), (59, 44081),

Gene: Quammi\_52 Start: 41410, Stop: 41138, Start Num: 35

Candidate Starts for Quammi\_52:

(Start: 34 @41413 has 4 MA's), (Start: 35 @41410 has 34 MA's), (47, 41287), (55, 41200), (57, 41176), (58, 41149),

Gene: RobinRose\_64 Start: 42778, Stop: 42530, Start Num: 35

Candidate Starts for RobinRose\_64:

(Start: 34 @42781 has 4 MA's), (Start: 35 @42778 has 34 MA's), (47, 42670), (56, 42574), (57, 42559),

Gene: Romm\_64 Start: 42775, Stop: 42527, Start Num: 35

Candidate Starts for Romm\_64:

(Start: 34 @42778 has 4 MA's), (Start: 35 @42775 has 34 MA's), (47, 42667), (56, 42571), (57, 42556),

Gene: Rowlf\_52 Start: 41508, Stop: 41236, Start Num: 35

Candidate Starts for Rowlf\_52:

(Start: 34 @41511 has 4 MA's), (Start: 35 @41508 has 34 MA's), (Start: 40 @41499 has 4 MA's), (47, 41403), (49, 41391), (52, 41370), (53, 41367), (55, 41316), (57, 41292), (59, 41247),

Gene: RubyRalph\_60 Start: 44491, Stop: 44210, Start Num: 35

Candidate Starts for RubyRalph\_60:

(Start: 35 @44491 has 34 MA's), (47, 44365),

Gene: Rudy\_52 Start: 41446, Stop: 41174, Start Num: 35

Candidate Starts for Rudy\_52:

(Start: 34 @41449 has 4 MA's), (Start: 35 @41446 has 34 MA's), (47, 41323), (55, 41236), (57, 41212), (58, 41185),

Gene: SallyK\_57 Start: 42760, Stop: 42488, Start Num: 35

Candidate Starts for SallyK\_57:

(3, 43315), (4, 43294), (5, 43264), (Start: 35 @42760 has 34 MA's), (51, 42616), (54, 42586), (55, 42550), (57, 42526), (58, 42499),

Gene: Shocker\_4 Start: 1170, Stop: 1418, Start Num: 41

Candidate Starts for Shocker\_4:

(15, 975), (Start: 41 @1170 has 8 MA's), (48, 1287), (57, 1389),

Gene: Sillytadpoles\_55 Start: 41283, Stop: 41011, Start Num: 35

Candidate Starts for Sillytadpoles\_55:

(Start: 34 @41286 has 4 MA's), (Start: 35 @41283 has 34 MA's), (47, 41160), (55, 41073), (57, 41049), (58, 41022),

Gene: SlySloth\_58 Start: 42152, Stop: 41880, Start Num: 35

Candidate Starts for SlySloth\_58:

(Start: 34 @42155 has 4 MA's), (Start: 35 @42152 has 34 MA's), (51, 42008), (54, 41978), (55, 41942), (57, 41918),

Gene: Squash\_59 Start: 42626, Stop: 42354, Start Num: 40

Candidate Starts for Squash\_59:

(7, 43061), (8, 43058), (10, 42956), (11, 42896), (12, 42887), (16, 42809), (19, 42770), (20, 42767), (28, 42722), (30, 42713), (38, 42632), (Start: 40 @42626 has 4 MA's), (Start: 41 @42617 has 8 MA's), (49, 42509), (53, 42485), (55, 42434), (57, 42410), (59, 42365),

Gene: Statler\_57 Start: 42227, Stop: 41955, Start Num: 35

Candidate Starts for Statler\_57:

(Start: 35 @42227 has 34 MA's), (51, 42083), (54, 42053), (55, 42017), (57, 41993),

Gene: StrawberryJamm\_59 Start: 41944, Stop: 41666, Start Num: 34

Candidate Starts for StrawberryJamm\_59:

(Start: 34 @41944 has 4 MA's), (Start: 36 @41938 has 5 MA's), (47, 41815), (55, 41728), (57, 41704), (58, 41677),

Gene: SwissCheezer\_50 Start: 50936, Stop: 51175, Start Num: 41

Candidate Starts for SwissCheezer\_50:

(17, 50786), (21, 50807), (24, 50819), (Start: 41 @50936 has 8 MA's), (44, 50975), (57, 51143),

Gene: Teehee\_55 Start: 42516, Stop: 42244, Start Num: 35

Candidate Starts for Teehee\_55:

(Start: 34 @42519 has 4 MA's), (Start: 35 @42516 has 34 MA's), (47, 42393), (55, 42306), (57, 42282), (58, 42255),

Gene: Tempo\_62 Start: 42643, Stop: 42395, Start Num: 35

Candidate Starts for Tempo\_62:

(Start: 34 @42646 has 4 MA's), (Start: 35 @42643 has 34 MA's), (47, 42535), (56, 42439), (57, 42424),

Gene: Tissue\_57 Start: 42542, Stop: 42282, Start Num: 34

Candidate Starts for Tissue\_57:

(Start: 34 @42542 has 4 MA's), (37, 42536), (Start: 40 @42527 has 4 MA's), (49, 42419), (53, 42395), (55, 42344), (57, 42320),

Gene: Viceroy\_53 Start: 41416, Stop: 41144, Start Num: 35

Candidate Starts for Viceroy\_53:

(Start: 34 @41419 has 4 MA's), (Start: 35 @41416 has 34 MA's), (47, 41293), (55, 41206), (57, 41182), (58, 41155),

Gene: Wayne3\_56 Start: 42279, Stop: 42007, Start Num: 35

Candidate Starts for Wayne3\_56:

(Start: 34 @42282 has 4 MA's), (Start: 35 @42279 has 34 MA's), (47, 42156), (55, 42069), (57, 42045), (58, 42018),

Gene: WheelerS25\_63 Start: 43635, Stop: 43363, Start Num: 35

Candidate Starts for WheelerS25\_63:

(25, 43731), (Start: 34 @43638 has 4 MA's), (Start: 35 @43635 has 34 MA's), (51, 43491), (54, 43461), (55, 43425), (57, 43401), (58, 43374),

Gene: Wheelie\_54 Start: 41600, Stop: 41328, Start Num: 35

Candidate Starts for Wheelie\_54:

(Start: 34 @41603 has 4 MA's), (Start: 35 @41600 has 34 MA's), (47, 41477), (55, 41390), (57, 41366), (58, 41339),

Gene: Wilca\_63 Start: 42918, Stop: 42661, Start Num: 35

Candidate Starts for Wilca\_63:

(1, 43611), (2, 43536), (6, 43320), (9, 43239), (22, 43017), (23, 43014), (29, 42984), (Start: 34 @42921 has 4 MA's), (Start: 35 @42918 has 34 MA's), (47, 42810), (56, 42714), (57, 42699),

Gene: Zagie\_56 Start: 42135, Stop: 41863, Start Num: 36

Candidate Starts for Zagie\_56:

(Start: 34 @42141 has 4 MA's), (Start: 36 @42135 has 5 MA's), (47, 42012), (55, 41925), (57, 41901), (58, 41874),

Gene: Zhafia\_57 Start: 42080, Stop: 41808, Start Num: 35

Candidate Starts for Zhafia\_57:

(Start: 34 @42083 has 4 MA's), (Start: 35 @42080 has 34 MA's), (47, 41957), (55, 41870), (57, 41846), (58, 41819),