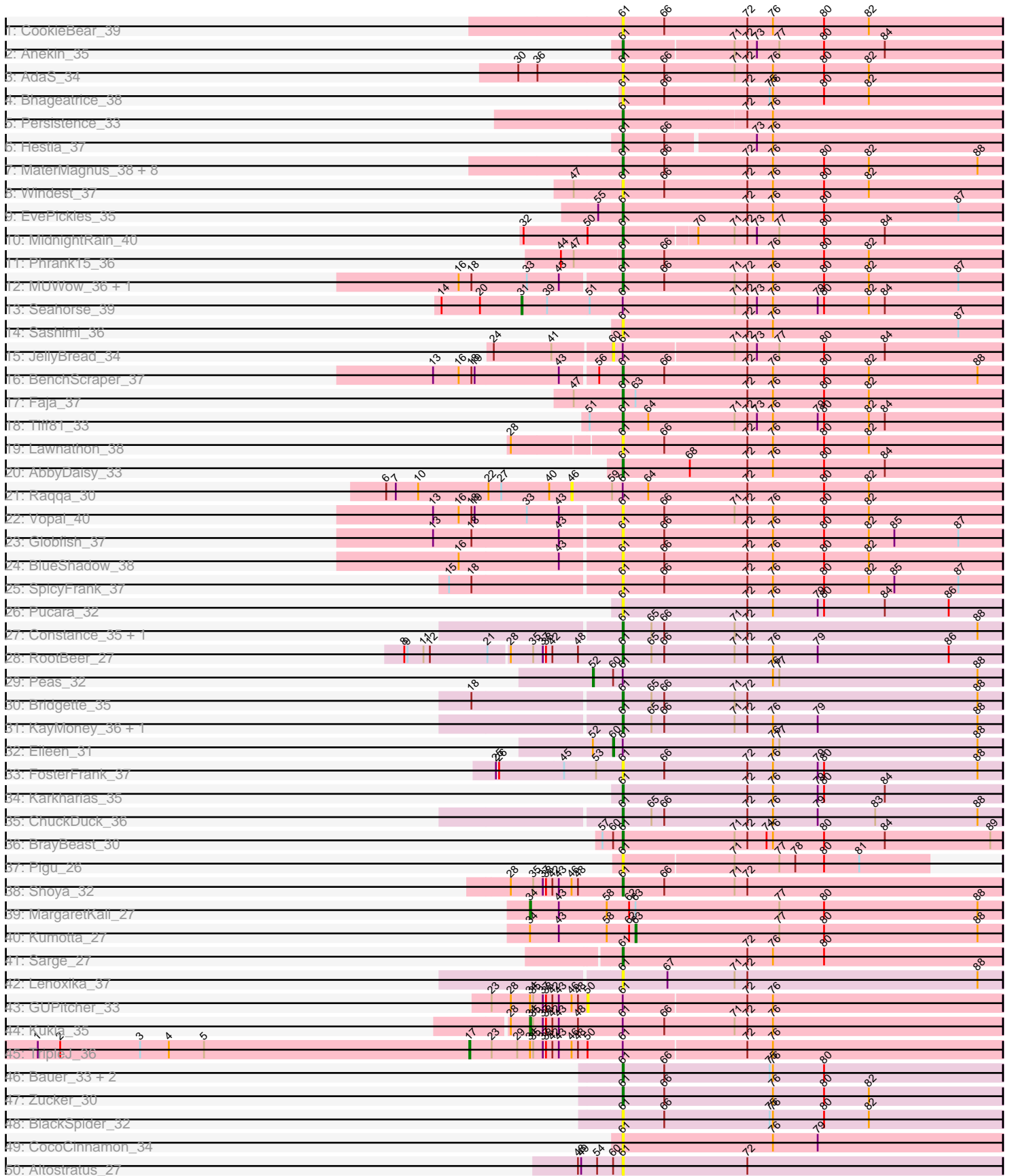
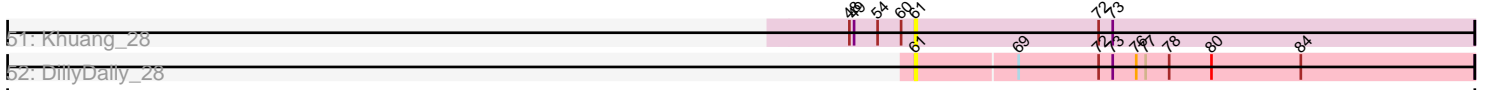


Pham 206850





A series of horizontal lines for text entry, starting from the top of the page below the tracks and extending to the bottom. The lines are evenly spaced and cover the majority of the page width.

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 206850 Report

This analysis was run 02/22/25 on database version 588.

Pham number 206850 has 65 members, 28 are drafts.

Phages represented in each track:

- Track 1 : CookieBear\_39
- Track 2 : Anekin\_35
- Track 3 : AdaS\_34
- Track 4 : Bhageatrice\_38
- Track 5 : Persistence\_33
- Track 6 : Hestia\_37
- Track 7 : MaterMagnus\_38, BillyTP\_39, Richie\_38, Auxilium\_36, Gorpy\_39, Aikyam\_35, Raphaella\_38, YoungHarleezy\_38, Sakai\_38
- Track 8 : Windest\_37
- Track 9 : EvePickles\_35
- Track 10 : MidnightRain\_40
- Track 11 : Phrank15\_36
- Track 12 : MUWow\_36, Isolde\_37
- Track 13 : Seahorse\_39
- Track 14 : Sashimi\_36
- Track 15 : JellyBread\_34
- Track 16 : BenchScraper\_37
- Track 17 : Faja\_37
- Track 18 : Tiff81\_33
- Track 19 : Lawnathon\_38
- Track 20 : AbbyDaisy\_33
- Track 21 : Raqqa\_30
- Track 22 : Vopal\_40
- Track 23 : Globfish\_37
- Track 24 : BlueShadow\_38
- Track 25 : SpicyFrank\_37
- Track 26 : Pucara\_32
- Track 27 : Constance\_35, GlobiWarming\_36
- Track 28 : RootBeer\_27
- Track 29 : Peas\_32
- Track 30 : Bridgette\_35
- Track 31 : KayMoney\_36, Judy\_36
- Track 32 : Eileen\_31
- Track 33 : FosterFrank\_37
- Track 34 : Karkharias\_35
- Track 35 : ChuckDuck\_36
- Track 36 : BrayBeast\_30

- Track 37 : Pigu\_26
- Track 38 : Shoya\_32
- Track 39 : MargaretKali\_27
- Track 40 : Kumotta\_27
- Track 41 : Sarge\_27
- Track 42 : Lenoxika\_37
- Track 43 : GUPitcher\_33
- Track 44 : Kukla\_35
- Track 45 : TripleJ\_36
- Track 46 : Bauer\_33, Hillester\_37, RadFad\_37
- Track 47 : Zucker\_30
- Track 48 : BlackSpider\_32
- Track 49 : CocoCinnamon\_34
- Track 50 : Altostratus\_27
- Track 51 : Khuang\_28
- Track 52 : DillyDally\_28

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

The start number called the most often in the published annotations is 61, it was called in 30 of the 37 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AbbyDaisy\_33, AdaS\_34, Aikyam\_35, Altostratus\_27, Anekin\_35, Auxilium\_36, Bauer\_33, BenchScraper\_37, Bhageatrice\_38, BillyTP\_39, BlackSpider\_32, BlueShadow\_38, BrayBeast\_30, Bridgette\_35, ChuckDuck\_36, CocoCinnamon\_34, Constance\_35, CookieBear\_39, DillyDally\_28, EvePickles\_35, Faja\_37, FosterFrank\_37, Globfish\_37, GlobiWarming\_36, Gorpy\_39, Hestia\_37, Hillester\_37, Isolde\_37, Judy\_36, Karkharias\_35, KayMoney\_36, Khuang\_28, Lawnathon\_38, Lenoxika\_37, MUWow\_36, MaterMagnus\_38, MidnightRain\_40, Persistence\_33, Phrank15\_36, Pigu\_26, Pucara\_32, RadFad\_37, Raphaella\_38, Richie\_38, RootBeer\_27, Sakai\_38, Sarge\_27, Sashimi\_36, Shoya\_32, SpicyFrank\_37, Tiff81\_33, Vopal\_40, Windest\_37, YoungHarleezy\_38, Zucker\_30,

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

- Eileen\_31, GUPitcher\_33, JellyBread\_34, Kukla\_35, Peas\_32, Raqqa\_30, Seahorse\_39, TripleJ\_36,

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

- Kumotta\_27, MargaretKali\_27,

**Summary by start number:**

Start 17:

- Found in 1 of 65 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 100.0% of time when present
- Phage (with cluster) where this start called: TripleJ\_36 (FJ),

Start 31:

- Found in 1 of 65 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Seahorse\_39 (AY),

#### Start 34:

- Found in 5 of 65 ( 7.7% ) of genes in pham
- Manual Annotations of this start: 2 of 37
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Kukla\_35 (FJ), MargaretKali\_27 (FB),

#### Start 46:

- Found in 4 of 65 ( 6.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Raqqa\_30 (AY),

#### Start 50:

- Found in 3 of 65 ( 4.6% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: GUPitcher\_33 (FJ),

#### Start 52:

- Found in 2 of 65 ( 3.1% ) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Peas\_32 (FA),

#### Start 60:

- Found in 6 of 65 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Eileen\_31 (FA), JellyBread\_34 (AY),

#### Start 61:

- Found in 63 of 65 ( 96.9% ) of genes in pham
- Manual Annotations of this start: 30 of 37
- Called 87.3% of time when present
- Phage (with cluster) where this start called: AbbyDaisy\_33 (AY), AdaS\_34 (AY), Aikyam\_35 (AY), Altostratus\_27 (FS), Anekin\_35 (AY), Auxilium\_36 (AY), Bauer\_33 (FN), BenchScraper\_37 (AY), Bhageatrice\_38 (AY), BillyTP\_39 (AY), BlackSpider\_32 (FN), BlueShadow\_38 (AY), BrayBeast\_30 (FB), Bridgette\_35 (FA), ChuckDuck\_36 (FA), CocoCinnamon\_34 (FO), Constance\_35 (FA), CookieBear\_39 (AY), DillyDally\_28 (singleton), EvePickles\_35 (AY), Faja\_37 (AY), FosterFrank\_37 (FA), Globfish\_37 (AY), GlobiWarming\_36 (FA), Gorpy\_39 (AY), Hestia\_37 (AY), Hillester\_37 (AY), Isolde\_37 (AY), Judy\_36 (FA), Karkharias\_35 (FA), KayMoney\_36 (FA), Khuang\_28 (FS), Lawnathon\_38 (AY), Lenoxika\_37 (FF), MUWow\_36 (AY), MaterMagnus\_38 (AY), MidnightRain\_40 (AY), Persistence\_33 (AY), Phrank15\_36 (AY), Pigu\_26 (FB), Pucara\_32 (FA), RadFad\_37 (AY), Raphaella\_38 (AY), Richie\_38 (AY), RootBeer\_27 (FA), Sakai\_38 (AY), Sarge\_27 (FB), Sashimi\_36 (AY), Shoya\_32 (FB), SpicyFrank\_37 (AY), Tiff81\_33 (AY), Vopal\_40 (AY), Windest\_37 (AY), YoungHarleezy\_38 (AY), Zucker\_30 (FN),

Start 63:

- Found in 3 of 65 ( 4.6% ) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Kumotta\_27 (FB),

### **Summary by clusters:**

There are 9 clusters represented in this pham: singleton, FS, FA, FB, FF, AY, FJ, FN, FO,

Info for manual annotations of cluster AY:

- Start number 31 was manually annotated 1 time for cluster AY.
- Start number 61 was manually annotated 18 times for cluster AY.

Info for manual annotations of cluster FA:

- Start number 52 was manually annotated 1 time for cluster FA.
- Start number 60 was manually annotated 1 time for cluster FA.
- Start number 61 was manually annotated 7 times for cluster FA.

Info for manual annotations of cluster FB:

- Start number 34 was manually annotated 1 time for cluster FB.
- Start number 61 was manually annotated 3 times for cluster FB.
- Start number 63 was manually annotated 1 time for cluster FB.

Info for manual annotations of cluster FJ:

- Start number 17 was manually annotated 1 time for cluster FJ.
- Start number 34 was manually annotated 1 time for cluster FJ.

Info for manual annotations of cluster FN:

- Start number 61 was manually annotated 2 times for cluster FN.

### **Gene Information:**

Gene: AbbyDaisy\_33 Start: 25439, Stop: 25795, Start Num: 61

Candidate Starts for AbbyDaisy\_33:

(Start: 61 @25439 has 30 MA's), (68, 25502), (72, 25556), (76, 25580), (80, 25628), (84, 25685),

Gene: AdaS\_34 Start: 23924, Stop: 24280, Start Num: 61

Candidate Starts for AdaS\_34:

(30, 23828), (36, 23846), (Start: 61 @23924 has 30 MA's), (66, 23963), (71, 24029), (72, 24041), (76, 24065), (80, 24113), (82, 24155),

Gene: Aikyam\_35 Start: 23855, Stop: 24211, Start Num: 61

Candidate Starts for Aikyam\_35:

(Start: 61 @23855 has 30 MA's), (66, 23894), (72, 23972), (76, 23996), (80, 24044), (82, 24086), (88, 24188),

Gene: Altostratus\_27 Start: 21331, Stop: 21687, Start Num: 61  
Candidate Starts for Altostratus\_27:  
(48, 21289), (49, 21292), (54, 21307), (Start: 60 @21322 has 1 MA's), (Start: 61 @21331 has 30 MA's),  
(72, 21448),

Gene: Anekin\_35 Start: 25205, Stop: 25558, Start Num: 61  
Candidate Starts for Anekin\_35:  
(Start: 61 @25205 has 30 MA's), (71, 25307), (72, 25319), (73, 25328), (77, 25349), (80, 25391), (84,  
25448),

Gene: Auxilium\_36 Start: 23557, Stop: 23913, Start Num: 61  
Candidate Starts for Auxilium\_36:  
(Start: 61 @23557 has 30 MA's), (66, 23596), (72, 23674), (76, 23698), (80, 23746), (82, 23788), (88,  
23890),

Gene: Bauer\_33 Start: 25076, Stop: 25432, Start Num: 61  
Candidate Starts for Bauer\_33:  
(Start: 61 @25076 has 30 MA's), (66, 25115), (75, 25214), (76, 25217), (80, 25265),

Gene: BenchScraper\_37 Start: 25515, Stop: 25871, Start Num: 61  
Candidate Starts for BenchScraper\_37:  
(13, 25344), (16, 25368), (18, 25380), (19, 25383), (43, 25461), (56, 25494), (Start: 61 @25515 has 30  
MA's), (66, 25554), (72, 25632), (76, 25656), (80, 25704), (82, 25746), (88, 25848),

Gene: Bhageatrice\_38 Start: 27344, Stop: 27700, Start Num: 61  
Candidate Starts for Bhageatrice\_38:  
(Start: 61 @27344 has 30 MA's), (66, 27383), (72, 27461), (75, 27482), (76, 27485), (80, 27533), (82,  
27575),

Gene: BillyTP\_39 Start: 26753, Stop: 27109, Start Num: 61  
Candidate Starts for BillyTP\_39:  
(Start: 61 @26753 has 30 MA's), (66, 26792), (72, 26870), (76, 26894), (80, 26942), (82, 26984), (88,  
27086),

Gene: BlackSpider\_32 Start: 24964, Stop: 25320, Start Num: 61  
Candidate Starts for BlackSpider\_32:  
(Start: 61 @24964 has 30 MA's), (66, 25003), (75, 25102), (76, 25105), (80, 25153), (82, 25195),

Gene: BlueShadow\_38 Start: 25500, Stop: 25856, Start Num: 61  
Candidate Starts for BlueShadow\_38:  
(16, 25353), (43, 25446), (Start: 61 @25500 has 30 MA's), (66, 25539), (72, 25617), (76, 25641), (80,  
25689), (82, 25731),

Gene: BrayBeast\_30 Start: 22742, Stop: 23098, Start Num: 61  
Candidate Starts for BrayBeast\_30:  
(57, 22724), (Start: 60 @22733 has 1 MA's), (Start: 61 @22742 has 30 MA's), (71, 22847), (72, 22859),  
(74, 22877), (76, 22883), (80, 22931), (84, 22988), (89, 23087),

Gene: Bridgette\_35 Start: 25558, Stop: 25914, Start Num: 61  
Candidate Starts for Bridgette\_35:  
(18, 25423), (Start: 61 @25558 has 30 MA's), (65, 25585), (66, 25597), (71, 25663), (72, 25675), (88,  
25891),

Gene: ChuckDuck\_36 Start: 25325, Stop: 25681, Start Num: 61

Candidate Starts for ChuckDuck\_36:

(Start: 61 @25325 has 30 MA's), (65, 25352), (66, 25364), (72, 25442), (76, 25466), (79, 25508), (83, 25562), (88, 25658),

Gene: CocoCinnamon\_34 Start: 23460, Stop: 23816, Start Num: 61

Candidate Starts for CocoCinnamon\_34:

(Start: 61 @23460 has 30 MA's), (76, 23601), (79, 23643),

Gene: Constance\_35 Start: 25797, Stop: 26153, Start Num: 61

Candidate Starts for Constance\_35:

(Start: 61 @25797 has 30 MA's), (65, 25824), (66, 25836), (71, 25902), (72, 25914), (88, 26130),

Gene: CookieBear\_39 Start: 26017, Stop: 26373, Start Num: 61

Candidate Starts for CookieBear\_39:

(Start: 61 @26017 has 30 MA's), (66, 26056), (72, 26134), (76, 26158), (80, 26206), (82, 26248),

Gene: DillyDally\_28 Start: 22383, Stop: 22736, Start Num: 61

Candidate Starts for DillyDally\_28:

(Start: 61 @22383 has 30 MA's), (69, 22446), (72, 22497), (73, 22506), (76, 22521), (77, 22527), (78, 22542), (80, 22569), (84, 22626),

Gene: Eileen\_31 Start: 23758, Stop: 24123, Start Num: 60

Candidate Starts for Eileen\_31:

(Start: 52 @23740 has 1 MA's), (Start: 60 @23758 has 1 MA's), (Start: 61 @23767 has 30 MA's), (76, 23908), (77, 23914), (88, 24100),

Gene: EvePickles\_35 Start: 26683, Stop: 27039, Start Num: 61

Candidate Starts for EvePickles\_35:

(55, 26662), (Start: 61 @26683 has 30 MA's), (72, 26800), (76, 26824), (80, 26872), (87, 26998),

Gene: Faja\_37 Start: 27291, Stop: 27647, Start Num: 61

Candidate Starts for Faja\_37:

(47, 27249), (Start: 61 @27291 has 30 MA's), (Start: 63 @27303 has 1 MA's), (72, 27408), (76, 27432), (80, 27480), (82, 27522),

Gene: FosterFrank\_37 Start: 25527, Stop: 25883, Start Num: 61

Candidate Starts for FosterFrank\_37:

(25, 25410), (26, 25413), (45, 25473), (53, 25503), (Start: 61 @25527 has 30 MA's), (66, 25566), (72, 25644), (76, 25668), (79, 25710), (80, 25716), (88, 25860),

Gene: GUPitcher\_33 Start: 27055, Stop: 27441, Start Num: 50

Candidate Starts for GUPitcher\_33:

(23, 26965), (28, 26983), (Start: 34 @27001 has 2 MA's), (35, 27004), (37, 27013), (38, 27016), (42, 27022), (43, 27028), (46, 27040), (48, 27046), (50, 27055), (Start: 61 @27088 has 30 MA's), (72, 27202), (76, 27226),

Gene: Globfish\_37 Start: 25740, Stop: 26096, Start Num: 61

Candidate Starts for Globfish\_37:

(13, 25569), (18, 25605), (43, 25686), (Start: 61 @25740 has 30 MA's), (66, 25779), (72, 25857), (76, 25881), (80, 25929), (82, 25971), (85, 25995), (87, 26055),



Gene: GlobiWarming\_36 Start: 25241, Stop: 25597, Start Num: 61  
Candidate Starts for GlobiWarming\_36:  
(Start: 61 @25241 has 30 MA's), (65, 25268), (66, 25280), (71, 25346), (72, 25358), (88, 25574),

Gene: Gorpy\_39 Start: 27249, Stop: 27605, Start Num: 61  
Candidate Starts for Gorpy\_39:  
(Start: 61 @27249 has 30 MA's), (66, 27288), (72, 27366), (76, 27390), (80, 27438), (82, 27480), (88, 27582),

Gene: Hestia\_37 Start: 25541, Stop: 25891, Start Num: 61  
Candidate Starts for Hestia\_37:  
(Start: 61 @25541 has 30 MA's), (66, 25580), (73, 25661), (76, 25676),

Gene: Hillester\_37 Start: 25503, Stop: 25859, Start Num: 61  
Candidate Starts for Hillester\_37:  
(Start: 61 @25503 has 30 MA's), (66, 25542), (75, 25641), (76, 25644), (80, 25692),

Gene: Isolde\_37 Start: 25269, Stop: 25625, Start Num: 61  
Candidate Starts for Isolde\_37:  
(16, 25122), (18, 25134), (33, 25185), (43, 25215), (Start: 61 @25269 has 30 MA's), (66, 25308), (71, 25374), (72, 25386), (76, 25410), (80, 25458), (82, 25500), (87, 25584),

Gene: JellyBread\_34 Start: 24448, Stop: 24810, Start Num: 60  
Candidate Starts for JellyBread\_34:  
(24, 24340), (41, 24394), (Start: 60 @24448 has 1 MA's), (Start: 61 @24457 has 30 MA's), (71, 24559), (72, 24571), (73, 24580), (77, 24601), (80, 24643), (84, 24700),

Gene: Judy\_36 Start: 25808, Stop: 26164, Start Num: 61  
Candidate Starts for Judy\_36:  
(Start: 61 @25808 has 30 MA's), (65, 25835), (66, 25847), (71, 25913), (72, 25925), (76, 25949), (79, 25991), (88, 26141),

Gene: Karkharias\_35 Start: 25457, Stop: 25813, Start Num: 61  
Candidate Starts for Karkharias\_35:  
(Start: 61 @25457 has 30 MA's), (72, 25574), (76, 25598), (79, 25640), (80, 25646), (84, 25703),

Gene: KayMoney\_36 Start: 25329, Stop: 25685, Start Num: 61  
Candidate Starts for KayMoney\_36:  
(Start: 61 @25329 has 30 MA's), (65, 25356), (66, 25368), (71, 25434), (72, 25446), (76, 25470), (79, 25512), (88, 25662),

Gene: Khuang\_28 Start: 22101, Stop: 22457, Start Num: 61  
Candidate Starts for Khuang\_28:  
(48, 22059), (49, 22062), (54, 22077), (Start: 60 @22092 has 1 MA's), (Start: 61 @22101 has 30 MA's), (72, 22218), (73, 22227),

Gene: Kukla\_35 Start: 26486, Stop: 26929, Start Num: 34  
Candidate Starts for Kukla\_35:  
(28, 26468), (Start: 34 @26486 has 2 MA's), (35, 26489), (37, 26498), (38, 26501), (42, 26507), (43, 26513), (48, 26531), (Start: 61 @26573 has 30 MA's), (66, 26612), (71, 26678), (72, 26690), (76, 26714),

Gene: Kumotta\_27 Start: 22462, Stop: 22806, Start Num: 63

Candidate Starts for Kumotta\_27:

(Start: 34 @22363 has 2 MA's), (43, 22390), (58, 22435), (62, 22456), (Start: 63 @22462 has 1 MA's), (77, 22597), (80, 22639), (88, 22783),

Gene: Lawnathon\_38 Start: 25871, Stop: 26227, Start Num: 61

Candidate Starts for Lawnathon\_38:

(28, 25778), (Start: 61 @25871 has 30 MA's), (66, 25910), (72, 25988), (76, 26012), (80, 26060), (82, 26102),

Gene: Lenoxika\_37 Start: 27217, Stop: 27573, Start Num: 61

Candidate Starts for Lenoxika\_37:

(Start: 61 @27217 has 30 MA's), (67, 27259), (71, 27322), (72, 27334), (88, 27550),

Gene: MUWow\_36 Start: 25525, Stop: 25881, Start Num: 61

Candidate Starts for MUWow\_36:

(16, 25378), (18, 25390), (33, 25441), (43, 25471), (Start: 61 @25525 has 30 MA's), (66, 25564), (71, 25630), (72, 25642), (76, 25666), (80, 25714), (82, 25756), (87, 25840),

Gene: MargaretKali\_27 Start: 21998, Stop: 22441, Start Num: 34

Candidate Starts for MargaretKali\_27:

(Start: 34 @21998 has 2 MA's), (43, 22025), (58, 22070), (62, 22091), (Start: 63 @22097 has 1 MA's), (77, 22232), (80, 22274), (88, 22418),

Gene: MaterMagnus\_38 Start: 26027, Stop: 26383, Start Num: 61

Candidate Starts for MaterMagnus\_38:

(Start: 61 @26027 has 30 MA's), (66, 26066), (72, 26144), (76, 26168), (80, 26216), (82, 26258), (88, 26360),

Gene: MidnightRain\_40 Start: 26819, Stop: 27169, Start Num: 61

Candidate Starts for MidnightRain\_40:

(32, 26726), (50, 26786), (Start: 61 @26819 has 30 MA's), (70, 26885), (71, 26918), (72, 26930), (73, 26939), (77, 26960), (80, 27002), (84, 27059),

Gene: Peas\_32 Start: 25888, Stop: 26271, Start Num: 52

Candidate Starts for Peas\_32:

(Start: 52 @25888 has 1 MA's), (Start: 60 @25906 has 1 MA's), (Start: 61 @25915 has 30 MA's), (76, 26056), (77, 26062), (88, 26248),

Gene: Persistence\_33 Start: 24151, Stop: 24504, Start Num: 61

Candidate Starts for Persistence\_33:

(Start: 61 @24151 has 30 MA's), (72, 24265), (76, 24289),

Gene: Phrank15\_36 Start: 24864, Stop: 25220, Start Num: 61

Candidate Starts for Phrank15\_36:

(44, 24810), (47, 24822), (Start: 61 @24864 has 30 MA's), (66, 24903), (76, 25005), (80, 25053), (82, 25095),

Gene: Pigu\_26 Start: 20880, Stop: 21164, Start Num: 61

Candidate Starts for Pigu\_26:

(Start: 61 @20880 has 30 MA's), (71, 20982), (77, 21024), (78, 21039), (80, 21066), (81, 21099),

Gene: Pucara\_32 Start: 25297, Stop: 25653, Start Num: 61

Candidate Starts for Pucara\_32:

(Start: 61 @25297 has 30 MA's), (72, 25414), (76, 25438), (79, 25480), (80, 25486), (84, 25543), (86, 25603),

Gene: RadFad\_37 Start: 25503, Stop: 25859, Start Num: 61

Candidate Starts for RadFad\_37:

(Start: 61 @25503 has 30 MA's), (66, 25542), (75, 25641), (76, 25644), (80, 25692),

Gene: Raphaella\_38 Start: 25951, Stop: 26307, Start Num: 61

Candidate Starts for Raphaella\_38:

(Start: 61 @25951 has 30 MA's), (66, 25990), (72, 26068), (76, 26092), (80, 26140), (82, 26182), (88, 26284),

Gene: Raqqa\_30 Start: 23000, Stop: 23401, Start Num: 46

Candidate Starts for Raqqa\_30:

(6, 22826), (7, 22835), (10, 22856), (22, 22922), (27, 22934), (40, 22979), (46, 23000), (59, 23036), (Start: 61 @23045 has 30 MA's), (64, 23069), (72, 23162), (80, 23234), (82, 23276),

Gene: Richie\_38 Start: 26032, Stop: 26388, Start Num: 61

Candidate Starts for Richie\_38:

(Start: 61 @26032 has 30 MA's), (66, 26071), (72, 26149), (76, 26173), (80, 26221), (82, 26263), (88, 26365),

Gene: RootBeer\_27 Start: 22119, Stop: 22475, Start Num: 61

Candidate Starts for RootBeer\_27:

(8, 21918), (9, 21921), (11, 21936), (12, 21942), (21, 21996), (28, 22014), (35, 22035), (37, 22044), (38, 22047), (42, 22053), (48, 22077), (Start: 61 @22119 has 30 MA's), (65, 22146), (66, 22158), (71, 22224), (72, 22236), (76, 22260), (79, 22302), (86, 22425),

Gene: Sakai\_38 Start: 25960, Stop: 26316, Start Num: 61

Candidate Starts for Sakai\_38:

(Start: 61 @25960 has 30 MA's), (66, 25999), (72, 26077), (76, 26101), (80, 26149), (82, 26191), (88, 26293),

Gene: Sarge\_27 Start: 20690, Stop: 21046, Start Num: 61

Candidate Starts for Sarge\_27:

(Start: 61 @20690 has 30 MA's), (72, 20807), (76, 20831), (80, 20879),

Gene: Sashimi\_36 Start: 26820, Stop: 27176, Start Num: 61

Candidate Starts for Sashimi\_36:

(Start: 61 @26820 has 30 MA's), (72, 26937), (76, 26961), (87, 27135),

Gene: Seahorse\_39 Start: 27369, Stop: 27818, Start Num: 31

Candidate Starts for Seahorse\_39:

(14, 27294), (20, 27330), (Start: 31 @27369 has 1 MA's), (39, 27393), (51, 27432), (Start: 61 @27462 has 30 MA's), (71, 27567), (72, 27579), (73, 27588), (76, 27603), (79, 27645), (80, 27651), (82, 27693), (84, 27708),

Gene: Shoya\_32 Start: 22698, Stop: 23054, Start Num: 61

Candidate Starts for Shoya\_32:

(28, 22593), (35, 22614), (37, 22623), (38, 22626), (42, 22632), (43, 22638), (46, 22650), (48, 22656), (Start: 61 @22698 has 30 MA's), (66, 22737), (71, 22803), (72, 22815),

Gene: SpicyFrank\_37 Start: 25735, Stop: 26091, Start Num: 61

Candidate Starts for SpicyFrank\_37:

(15, 25579), (18, 25600), (Start: 61 @25735 has 30 MA's), (66, 25774), (72, 25852), (76, 25876), (80, 25924), (82, 25966), (85, 25990), (87, 26050),

Gene: Tiff81\_33 Start: 23054, Stop: 23410, Start Num: 61

Candidate Starts for Tiff81\_33:

(51, 23024), (Start: 61 @23054 has 30 MA's), (64, 23078), (71, 23159), (72, 23171), (73, 23180), (76, 23195), (79, 23237), (80, 23243), (82, 23285), (84, 23300),

Gene: TripleJ\_36 Start: 26273, Stop: 26770, Start Num: 17

Candidate Starts for TripleJ\_36:

(1, 25868), (2, 25889), (3, 25964), (4, 25991), (5, 26024), (Start: 17 @26273 has 1 MA's), (23, 26294), (29, 26318), (Start: 34 @26330 has 2 MA's), (35, 26333), (37, 26342), (38, 26345), (42, 26351), (43, 26357), (46, 26369), (48, 26375), (50, 26384), (Start: 61 @26417 has 30 MA's), (72, 26531), (76, 26555),

Gene: Vopal\_40 Start: 28322, Stop: 28678, Start Num: 61

Candidate Starts for Vopal\_40:

(13, 28151), (16, 28175), (18, 28187), (19, 28190), (33, 28238), (43, 28268), (Start: 61 @28322 has 30 MA's), (66, 28361), (71, 28427), (72, 28439), (76, 28463), (80, 28511), (82, 28553),

Gene: Windest\_37 Start: 24341, Stop: 24697, Start Num: 61

Candidate Starts for Windest\_37:

(47, 24299), (Start: 61 @24341 has 30 MA's), (66, 24380), (72, 24458), (76, 24482), (80, 24530), (82, 24572),

Gene: YoungHarleezy\_38 Start: 26030, Stop: 26386, Start Num: 61

Candidate Starts for YoungHarleezy\_38:

(Start: 61 @26030 has 30 MA's), (66, 26069), (72, 26147), (76, 26171), (80, 26219), (82, 26261), (88, 26363),

Gene: Zucker\_30 Start: 24815, Stop: 25171, Start Num: 61

Candidate Starts for Zucker\_30:

(Start: 61 @24815 has 30 MA's), (66, 24854), (76, 24956), (80, 25004), (82, 25046),