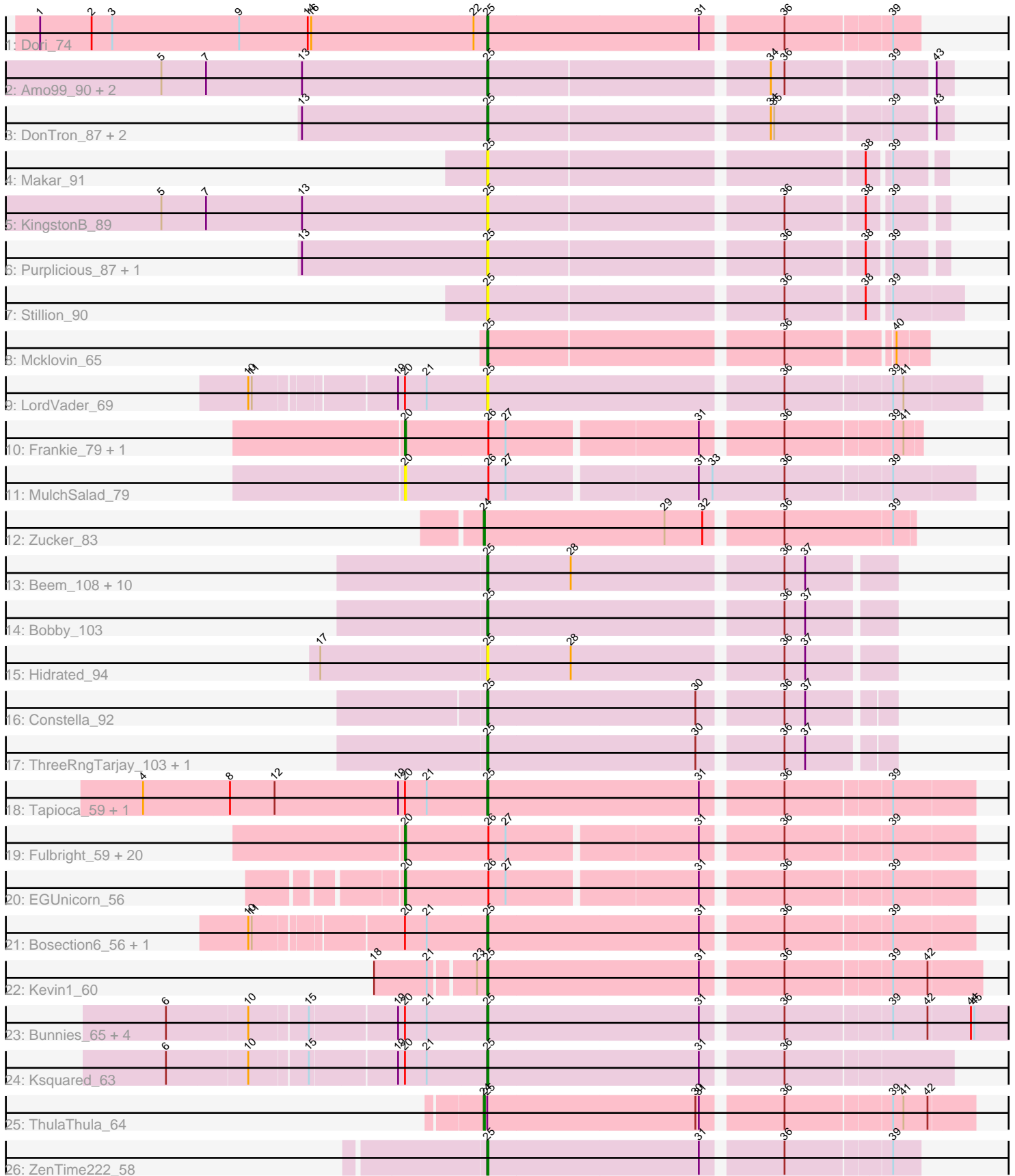


Pham 294705



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 294705 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294705 has 69 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Dori\_74
- Track 2 : Amo99\_90, Jollymon\_87, ColdSoup\_90
- Track 3 : DonTron\_87, Soos\_83, Sting\_86
- Track 4 : Makar\_91
- Track 5 : KingstonB\_89
- Track 6 : Purplicious\_87, Grumio\_88
- Track 7 : Stillion\_90
- Track 8 : Mcklovin\_65
- Track 9 : LordVader\_69
- Track 10 : Frankie\_79, Piper2020\_85
- Track 11 : MulchSalad\_79
- Track 12 : Zucker\_83
- Track 13 : Beem\_108, Minerva\_106, Schatzie\_101, Bombitas\_95, Dove\_92, Ejimix\_100, JuicyJay\_103, HokkenD\_96, Halley\_108, Redno2\_98, NihilNomen\_108
- Track 14 : Bobby\_103
- Track 15 : Hidrated\_94
- Track 16 : Constella\_92
- Track 17 : ThreeRngTarjay\_103, Optimus\_100
- Track 18 : Tapioca\_59, Andies\_55
- Track 19 : Fulbright\_59, Xerxes\_61, Duplicity\_59, Magsby\_60, Phloss\_59, Parmesanjohn\_61, Chewbacca\_64, FirstPlacePfu\_63, Schnauzer\_62, Pipsqueaks\_62, Philonius\_61, LordVader\_79, Smurph\_61, Aggie\_57, SkinnyPete\_58, Silvafighter\_63, Tessdabest\_62, Melville\_66, Silvy\_57, Carcharodon\_61, Gex\_62
- Track 20 : EGUnicorn\_56
- Track 21 : Bosection6\_56, Charlie\_58
- Track 22 : Kevin1\_60
- Track 23 : Bunnies\_65, CactusJack\_60, KilKor\_60, Phalm\_60, Glaske\_59
- Track 24 : Ksquared\_63
- Track 25 : ThulaThula\_64
- Track 26 : ZenTime222\_58

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

The start number called the most often in the published annotations is 25, it was called in 33 of the 57 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Amo99\_90, Andies\_55, Beem\_108, Bobby\_103, Bombitas\_95, Bosection6\_56, Bunnies\_65, CactusJack\_60, Charlie\_58, ColdSoup\_90, Constella\_92, DonTron\_87, Dori\_74, Dove\_92, Ejimix\_100, Glaske\_59, Grumio\_88, Halley\_108, Hidrated\_94, HokkenD\_96, Jollymon\_87, JuicyJay\_103, Kevin1\_60, KilKor\_60, KingstonB\_89, Ksquared\_63, LordVader\_69, Makar\_91, Mcklovin\_65, Minerva\_106, NihilNomen\_108, Optimus\_100, Phalm\_60, Purplicious\_87, Redno2\_98, Schatzie\_101, Soos\_83, Stillion\_90, Sting\_86, Tapioca\_59, ThreeRngTarjay\_103, ZenTime222\_58,

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

- ThulaThula\_64,

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

- Aggie\_57, Carcharodon\_61, Chewbacca\_64, Duplicity\_59, EGUnicorn\_56, FirstPlacePfu\_63, Frankie\_79, Fulbright\_59, Gex\_62, LordVader\_79, Magsby\_60, Melville\_66, MulchSalad\_79, Parmesanjohn\_61, Philonius\_61, Phloss\_59, Piper2020\_85, Pipsqueaks\_62, Schnauzer\_62, Silvafighter\_63, Silvy\_57, SkinnyPete\_58, Smurph\_61, Tessdabest\_62, Xerxes\_61, Zucker\_83,

### Summary by start number:

Start 20:

- Found in 36 of 69 ( 52.2% ) of genes in pham
- Manual Annotations of this start: 22 of 57
- Called 69.4% of time when present
- Phage (with cluster) where this start called: Aggie\_57 (N), Carcharodon\_61 (N), Chewbacca\_64 (N), Duplicity\_59 (N), EGUnicorn\_56 (N), FirstPlacePfu\_63 (P1), Frankie\_79 (F1), Fulbright\_59 (N), Gex\_62 (N), LordVader\_79 (F), Magsby\_60 (N), Melville\_66 (N), MulchSalad\_79 (F7), Parmesanjohn\_61 (N), Philonius\_61 (N), Phloss\_59 (N), Piper2020\_85 (F1), Pipsqueaks\_62 (N), Schnauzer\_62 (N), Silvafighter\_63 (N), Silvy\_57 (N), SkinnyPete\_58 (N), Smurph\_61 (N), Tessdabest\_62 (N), Xerxes\_61 (N),

Start 24:

- Found in 2 of 69 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 2 of 57
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ThulaThula\_64 (P5), Zucker\_83 (FN),

Start 25:

- Found in 43 of 69 ( 62.3% ) of genes in pham
- Manual Annotations of this start: 33 of 57
- Called 97.7% of time when present
- Phage (with cluster) where this start called: Amo99\_90 (CP), Andies\_55 (N), Beem\_108 (J), Bobby\_103 (J), Bombitas\_95 (J), Bosection6\_56 (N), Bunnies\_65 (P1), CactusJack\_60 (P1), Charlie\_58 (N), ColdSoup\_90 (CP), Constella\_92 (J), DonTron\_87 (CP), Dori\_74 (AD), Dove\_92 (J), Ejimix\_100 (J), Glaske\_59 (P1), Grumio\_88 (CP), Halley\_108 (J), Hidrated\_94 (J), HokkenD\_96 (J), Jollymon\_87 (CP), JuicyJay\_103 (J), Kevin1\_60 (N), KilKor\_60 (P1), KingstonB\_89 (CP),

Ksquared\_63 (P1), LordVader\_69 (F), Makar\_91 (CP), Mcklovin\_65 (CZ4),  
Minerva\_106 (J), NihilNomen\_108 (J), Optimus\_100 (J), Phalm\_60 (P1),  
Purplicious\_87 (CP), Redno2\_98 (J), Schatzie\_101 (J), Soos\_83 (CP), Stillion\_90  
(CP), Sting\_86 (CP), Tapioca\_59 (N), ThreeRngTarjay\_103 (J), ZenTime222\_58 (T),

### **Summary by clusters:**

There are 12 clusters represented in this pham: F1, F, P1, AD, F7, P5, J, CZ4, N, T, CP, FN,

Info for manual annotations of cluster AD:

- Start number 25 was manually annotated 1 time for cluster AD.

Info for manual annotations of cluster CP:

- Start number 25 was manually annotated 4 times for cluster CP.

Info for manual annotations of cluster CZ4:

- Start number 25 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster F1:

- Start number 20 was manually annotated 2 times for cluster F1.

Info for manual annotations of cluster FN:

- Start number 24 was manually annotated 1 time for cluster FN.

Info for manual annotations of cluster J:

- Start number 25 was manually annotated 15 times for cluster J.

Info for manual annotations of cluster N:

- Start number 20 was manually annotated 19 times for cluster N.
- Start number 25 was manually annotated 5 times for cluster N.

Info for manual annotations of cluster P1:

- Start number 20 was manually annotated 1 time for cluster P1.
- Start number 25 was manually annotated 6 times for cluster P1.

Info for manual annotations of cluster P5:

- Start number 24 was manually annotated 1 time for cluster P5.

Info for manual annotations of cluster T:

- Start number 25 was manually annotated 1 time for cluster T.

### **Gene Information:**

Gene: Aggie\_57 Start: 39395, Stop: 39856, Start Num: 20

Candidate Starts for Aggie\_57:

(Start: 20 @39395 has 22 MA's), (26, 39467), (27, 39482), (31, 39641), (36, 39704), (39, 39791),

Gene: Amo99\_90 Start: 56291, Stop: 56665, Start Num: 25

Candidate Starts for Amo99\_90:

(5, 56006), (7, 56045), (13, 56129), (Start: 25 @56291 has 33 MA's), (34, 56522), (36, 56534), (39, 56621), (43, 56651),

Gene: Andies\_55 Start: 38900, Stop: 39301, Start Num: 25

Candidate Starts for Andies\_55:

(4, 38603), (8, 38678), (12, 38717), (19, 38825), (Start: 20 @38831 has 22 MA's), (21, 38849), (Start: 25 @38900 has 33 MA's), (31, 39083), (36, 39146), (39, 39233),

Gene: Beem\_108 Start: 62992, Stop: 63327, Start Num: 25

Candidate Starts for Beem\_108:

(Start: 25 @62992 has 33 MA's), (28, 63064), (36, 63238), (37, 63256),

Gene: Bobby\_103 Start: 64857, Stop: 65192, Start Num: 25

Candidate Starts for Bobby\_103:

(Start: 25 @64857 has 33 MA's), (36, 65103), (37, 65121),

Gene: Bombitas\_95 Start: 60155, Stop: 60490, Start Num: 25

Candidate Starts for Bombitas\_95:

(Start: 25 @60155 has 33 MA's), (28, 60227), (36, 60401), (37, 60419),

Gene: Bosection6\_56 Start: 38504, Stop: 38905, Start Num: 25

Candidate Starts for Bosection6\_56:

(10, 38315), (11, 38318), (Start: 20 @38435 has 22 MA's), (21, 38453), (Start: 25 @38504 has 33 MA's), (31, 38687), (36, 38750), (39, 38837),

Gene: Bunnies\_65 Start: 41638, Stop: 42144, Start Num: 25

Candidate Starts for Bunnies\_65:

(6, 41374), (10, 41443), (15, 41491), (19, 41563), (Start: 20 @41569 has 22 MA's), (21, 41587), (Start: 25 @41638 has 33 MA's), (31, 41821), (36, 41884), (39, 41971), (42, 42001), (44, 42037), (45, 42040),

Gene: CactusJack\_60 Start: 40506, Stop: 41012, Start Num: 25

Candidate Starts for CactusJack\_60:

(6, 40242), (10, 40311), (15, 40359), (19, 40431), (Start: 20 @40437 has 22 MA's), (21, 40455), (Start: 25 @40506 has 33 MA's), (31, 40689), (36, 40752), (39, 40839), (42, 40869), (44, 40905), (45, 40908),

Gene: Carcharodon\_61 Start: 38739, Stop: 39203, Start Num: 20

Candidate Starts for Carcharodon\_61:

(Start: 20 @38739 has 22 MA's), (26, 38811), (27, 38826), (31, 38985), (36, 39048), (39, 39135),

Gene: Charlie\_58 Start: 38128, Stop: 38529, Start Num: 25

Candidate Starts for Charlie\_58:

(10, 37939), (11, 37942), (Start: 20 @38059 has 22 MA's), (21, 38077), (Start: 25 @38128 has 33 MA's), (31, 38311), (36, 38374), (39, 38461),

Gene: Chewbacca\_64 Start: 38634, Stop: 39098, Start Num: 20

Candidate Starts for Chewbacca\_64:

(Start: 20 @38634 has 22 MA's), (26, 38706), (27, 38721), (31, 38880), (36, 38943), (39, 39030),

Gene: ColdSoup\_90 Start: 56372, Stop: 56746, Start Num: 25

Candidate Starts for ColdSoup\_90:

(5, 56087), (7, 56126), (13, 56210), (Start: 25 @56372 has 33 MA's), (34, 56603), (36, 56615), (39, 56702), (43, 56732),

Gene: Constella\_92 Start: 57167, Stop: 57499, Start Num: 25

Candidate Starts for Constella\_92:

(Start: 25 @57167 has 33 MA's), (30, 57347), (36, 57413), (37, 57431),

Gene: DonTron\_87 Start: 56250, Stop: 56624, Start Num: 25

Candidate Starts for DonTron\_87:

(13, 56088), (Start: 25 @56250 has 33 MA's), (34, 56481), (35, 56484), (39, 56580), (43, 56610),

Gene: Dori\_74 Start: 55849, Stop: 56205, Start Num: 25

Candidate Starts for Dori\_74:

(1, 55459), (2, 55504), (3, 55522), (9, 55633), (14, 55693), (16, 55696), (22, 55837), (Start: 25 @55849 has 33 MA's), (31, 56032), (36, 56095), (39, 56182),

Gene: Dove\_92 Start: 58421, Stop: 58756, Start Num: 25

Candidate Starts for Dove\_92:

(Start: 25 @58421 has 33 MA's), (28, 58493), (36, 58667), (37, 58685),

Gene: Duplicity\_59 Start: 37996, Stop: 38460, Start Num: 20

Candidate Starts for Duplicity\_59:

(Start: 20 @37996 has 22 MA's), (26, 38068), (27, 38083), (31, 38242), (36, 38305), (39, 38392),

Gene: EGUunicorn\_56 Start: 37062, Stop: 37526, Start Num: 20

Candidate Starts for EGUunicorn\_56:

(Start: 20 @37062 has 22 MA's), (26, 37134), (27, 37149), (31, 37308), (36, 37371), (39, 37458),

Gene: Ejimix\_100 Start: 62719, Stop: 63054, Start Num: 25

Candidate Starts for Ejimix\_100:

(Start: 25 @62719 has 33 MA's), (28, 62791), (36, 62965), (37, 62983),

Gene: FirstPlacePfu\_63 Start: 38539, Stop: 39003, Start Num: 20

Candidate Starts for FirstPlacePfu\_63:

(Start: 20 @38539 has 22 MA's), (26, 38611), (27, 38626), (31, 38785), (36, 38848), (39, 38935),

Gene: Frankie\_79 Start: 47128, Stop: 47547, Start Num: 20

Candidate Starts for Frankie\_79:

(Start: 20 @47128 has 22 MA's), (26, 47200), (27, 47215), (31, 47374), (36, 47437), (39, 47524), (41, 47533),

Gene: Fulbright\_59 Start: 37433, Stop: 37897, Start Num: 20

Candidate Starts for Fulbright\_59:

(Start: 20 @37433 has 22 MA's), (26, 37505), (27, 37520), (31, 37679), (36, 37742), (39, 37829),

Gene: Gex\_62 Start: 38755, Stop: 39219, Start Num: 20

Candidate Starts for Gex\_62:

(Start: 20 @38755 has 22 MA's), (26, 38827), (27, 38842), (31, 39001), (36, 39064), (39, 39151),

Gene: Glaske\_59 Start: 40506, Stop: 41012, Start Num: 25

Candidate Starts for Glaske\_59:

(6, 40242), (10, 40311), (15, 40359), (19, 40431), (Start: 20 @40437 has 22 MA's), (21, 40455), (Start: 25 @40506 has 33 MA's), (31, 40689), (36, 40752), (39, 40839), (42, 40869), (44, 40905), (45, 40908),

Gene: Grumio\_88 Start: 55850, Stop: 56215, Start Num: 25

Candidate Starts for Grumio\_88:

(13, 55688), (Start: 25 @55850 has 33 MA's), (36, 56093), (38, 56159), (39, 56174),

Gene: Halley\_108 Start: 62993, Stop: 63328, Start Num: 25

Candidate Starts for Halley\_108:

(Start: 25 @62993 has 33 MA's), (28, 63065), (36, 63239), (37, 63257),

Gene: Hidrated\_94 Start: 60927, Stop: 61262, Start Num: 25

Candidate Starts for Hidrated\_94:

(17, 60783), (Start: 25 @60927 has 33 MA's), (28, 60999), (36, 61173), (37, 61191),

Gene: HokkenD\_96 Start: 61261, Stop: 61596, Start Num: 25

Candidate Starts for HokkenD\_96:

(Start: 25 @61261 has 33 MA's), (28, 61333), (36, 61507), (37, 61525),

Gene: Jollymon\_87 Start: 56372, Stop: 56746, Start Num: 25

Candidate Starts for Jollymon\_87:

(5, 56087), (7, 56126), (13, 56210), (Start: 25 @56372 has 33 MA's), (34, 56603), (36, 56615), (39, 56702), (43, 56732),

Gene: JuicyJay\_103 Start: 64127, Stop: 64462, Start Num: 25

Candidate Starts for JuicyJay\_103:

(Start: 25 @64127 has 33 MA's), (28, 64199), (36, 64373), (37, 64391),

Gene: Kevin1\_60 Start: 37027, Stop: 37434, Start Num: 25

Candidate Starts for Kevin1\_60:

(18, 36940), (21, 36985), (23, 37018), (Start: 25 @37027 has 33 MA's), (31, 37210), (36, 37273), (39, 37360), (42, 37390),

Gene: KilKor\_60 Start: 41199, Stop: 41705, Start Num: 25

Candidate Starts for KilKor\_60:

(6, 40935), (10, 41004), (15, 41052), (19, 41124), (Start: 20 @41130 has 22 MA's), (21, 41148), (Start: 25 @41199 has 33 MA's), (31, 41382), (36, 41445), (39, 41532), (42, 41562), (44, 41598), (45, 41601),

Gene: KingstonB\_89 Start: 55783, Stop: 56148, Start Num: 25

Candidate Starts for KingstonB\_89:

(5, 55498), (7, 55537), (13, 55621), (Start: 25 @55783 has 33 MA's), (36, 56026), (38, 56092), (39, 56107),

Gene: Ksquared\_63 Start: 41638, Stop: 42021, Start Num: 25

Candidate Starts for Ksquared\_63:

(6, 41374), (10, 41443), (15, 41491), (19, 41563), (Start: 20 @41569 has 22 MA's), (21, 41587), (Start: 25 @41638 has 33 MA's), (31, 41821), (36, 41884),

Gene: LordVader\_79 Start: 46008, Stop: 46472, Start Num: 20

Candidate Starts for LordVader\_79:

(Start: 20 @46008 has 22 MA's), (26, 46080), (27, 46095), (31, 46254), (36, 46317), (39, 46404),

Gene: LordVader\_69 Start: 40263, Stop: 40670, Start Num: 25

Candidate Starts for LordVader\_69:

(10, 40074), (11, 40077), (19, 40188), (Start: 20 @40194 has 22 MA's), (21, 40212), (Start: 25 @40263 has 33 MA's), (36, 40509), (39, 40596), (41, 40605),

Gene: Magsby\_60 Start: 38701, Stop: 39165, Start Num: 20  
Candidate Starts for Magsby\_60:  
(Start: 20 @38701 has 22 MA's), (26, 38773), (27, 38788), (31, 38947), (36, 39010), (39, 39097),

Gene: Makar\_91 Start: 56322, Stop: 56687, Start Num: 25  
Candidate Starts for Makar\_91:  
(Start: 25 @56322 has 33 MA's), (38, 56631), (39, 56646),

Gene: Mcklovin\_65 Start: 48076, Stop: 48429, Start Num: 25  
Candidate Starts for Mcklovin\_65:  
(Start: 25 @48076 has 33 MA's), (36, 48319), (40, 48403),

Gene: Melville\_66 Start: 38310, Stop: 38774, Start Num: 20  
Candidate Starts for Melville\_66:  
(Start: 20 @38310 has 22 MA's), (26, 38382), (27, 38397), (31, 38556), (36, 38619), (39, 38706),

Gene: Minerva\_106 Start: 62938, Stop: 63273, Start Num: 25  
Candidate Starts for Minerva\_106:  
(Start: 25 @62938 has 33 MA's), (28, 63010), (36, 63184), (37, 63202),

Gene: MulchSalad\_79 Start: 47746, Stop: 48222, Start Num: 20  
Candidate Starts for MulchSalad\_79:  
(Start: 20 @47746 has 22 MA's), (26, 47818), (27, 47833), (31, 47992), (33, 48004), (36, 48067), (39, 48154),

Gene: NihilNomen\_108 Start: 63079, Stop: 63414, Start Num: 25  
Candidate Starts for NihilNomen\_108:  
(Start: 25 @63079 has 33 MA's), (28, 63151), (36, 63325), (37, 63343),

Gene: Optimus\_100 Start: 61613, Stop: 61945, Start Num: 25  
Candidate Starts for Optimus\_100:  
(Start: 25 @61613 has 33 MA's), (30, 61793), (36, 61859), (37, 61877),

Gene: Parmesanjohn\_61 Start: 38759, Stop: 39223, Start Num: 20  
Candidate Starts for Parmesanjohn\_61:  
(Start: 20 @38759 has 22 MA's), (26, 38831), (27, 38846), (31, 39005), (36, 39068), (39, 39155),

Gene: Phalm\_60 Start: 40506, Stop: 41012, Start Num: 25  
Candidate Starts for Phalm\_60:  
(6, 40242), (10, 40311), (15, 40359), (19, 40431), (Start: 20 @40437 has 22 MA's), (21, 40455), (Start: 25 @40506 has 33 MA's), (31, 40689), (36, 40752), (39, 40839), (42, 40869), (44, 40905), (45, 40908),

Gene: Philonius\_61 Start: 38924, Stop: 39388, Start Num: 20  
Candidate Starts for Philonius\_61:  
(Start: 20 @38924 has 22 MA's), (26, 38996), (27, 39011), (31, 39170), (36, 39233), (39, 39320),

Gene: Phloss\_59 Start: 38166, Stop: 38630, Start Num: 20  
Candidate Starts for Phloss\_59:  
(Start: 20 @38166 has 22 MA's), (26, 38238), (27, 38253), (31, 38412), (36, 38475), (39, 38562),

Gene: Piper2020\_85 Start: 51523, Stop: 51987, Start Num: 20  
Candidate Starts for Piper2020\_85:

(Start: 20 @51523 has 22 MA's), (26, 51595), (27, 51610), (31, 51769), (36, 51832), (39, 51919), (41, 51928),

Gene: Pipsqueaks\_62 Start: 38737, Stop: 39201, Start Num: 20

Candidate Starts for Pipsqueaks\_62:

(Start: 20 @38737 has 22 MA's), (26, 38809), (27, 38824), (31, 38983), (36, 39046), (39, 39133),

Gene: Purplicious\_87 Start: 55615, Stop: 55980, Start Num: 25

Candidate Starts for Purplicious\_87:

(13, 55453), (Start: 25 @55615 has 33 MA's), (36, 55858), (38, 55924), (39, 55939),

Gene: Redno2\_98 Start: 58813, Stop: 59148, Start Num: 25

Candidate Starts for Redno2\_98:

(Start: 25 @58813 has 33 MA's), (28, 58885), (36, 59059), (37, 59077),

Gene: Schatzie\_101 Start: 61869, Stop: 62204, Start Num: 25

Candidate Starts for Schatzie\_101:

(Start: 25 @61869 has 33 MA's), (28, 61941), (36, 62115), (37, 62133),

Gene: Schnauzer\_62 Start: 38759, Stop: 39223, Start Num: 20

Candidate Starts for Schnauzer\_62:

(Start: 20 @38759 has 22 MA's), (26, 38831), (27, 38846), (31, 39005), (36, 39068), (39, 39155),

Gene: Silvafighter\_63 Start: 38302, Stop: 38766, Start Num: 20

Candidate Starts for Silvafighter\_63:

(Start: 20 @38302 has 22 MA's), (26, 38374), (27, 38389), (31, 38548), (36, 38611), (39, 38698),

Gene: Silvy\_57 Start: 39395, Stop: 39856, Start Num: 20

Candidate Starts for Silvy\_57:

(Start: 20 @39395 has 22 MA's), (26, 39467), (27, 39482), (31, 39641), (36, 39704), (39, 39791),

Gene: SkinnyPete\_58 Start: 38506, Stop: 38970, Start Num: 20

Candidate Starts for SkinnyPete\_58:

(Start: 20 @38506 has 22 MA's), (26, 38578), (27, 38593), (31, 38752), (36, 38815), (39, 38902),

Gene: Smurph\_61 Start: 38759, Stop: 39223, Start Num: 20

Candidate Starts for Smurph\_61:

(Start: 20 @38759 has 22 MA's), (26, 38831), (27, 38846), (31, 39005), (36, 39068), (39, 39155),

Gene: Soos\_83 Start: 55576, Stop: 55950, Start Num: 25

Candidate Starts for Soos\_83:

(13, 55414), (Start: 25 @55576 has 33 MA's), (34, 55807), (35, 55810), (39, 55906), (43, 55936),

Gene: Stillion\_90 Start: 56941, Stop: 57324, Start Num: 25

Candidate Starts for Stillion\_90:

(Start: 25 @56941 has 33 MA's), (36, 57184), (38, 57250), (39, 57265),

Gene: Sting\_86 Start: 56015, Stop: 56389, Start Num: 25

Candidate Starts for Sting\_86:

(13, 55853), (Start: 25 @56015 has 33 MA's), (34, 56246), (35, 56249), (39, 56345), (43, 56375),

Gene: Tapioca\_59 Start: 39339, Stop: 39740, Start Num: 25

Candidate Starts for Tapioca\_59:

(4, 39042), (8, 39117), (12, 39156), (19, 39264), (Start: 20 @39270 has 22 MA's), (21, 39288), (Start: 25 @39339 has 33 MA's), (31, 39522), (36, 39585), (39, 39672),

Gene: Tessdabest\_62 Start: 38893, Stop: 39357, Start Num: 20

Candidate Starts for Tessdabest\_62:

(Start: 20 @38893 has 22 MA's), (26, 38965), (27, 38980), (31, 39139), (36, 39202), (39, 39289),

Gene: ThreeRngTarjay\_103 Start: 63154, Stop: 63486, Start Num: 25

Candidate Starts for ThreeRngTarjay\_103:

(Start: 25 @63154 has 33 MA's), (30, 63334), (36, 63400), (37, 63418),

Gene: ThulaThula\_64 Start: 43444, Stop: 43848, Start Num: 24

Candidate Starts for ThulaThula\_64:

(Start: 24 @43444 has 2 MA's), (Start: 25 @43447 has 33 MA's), (30, 43627), (31, 43630), (36, 43693), (39, 43780), (41, 43789), (42, 43810),

Gene: Xerxes\_61 Start: 38756, Stop: 39220, Start Num: 20

Candidate Starts for Xerxes\_61:

(Start: 20 @38756 has 22 MA's), (26, 38828), (27, 38843), (31, 39002), (36, 39065), (39, 39152),

Gene: ZenTime222\_58 Start: 39792, Stop: 40148, Start Num: 25

Candidate Starts for ZenTime222\_58:

(Start: 25 @39792 has 33 MA's), (31, 39975), (36, 40038), (39, 40125),

Gene: Zucker\_83 Start: 48730, Stop: 49089, Start Num: 24

Candidate Starts for Zucker\_83:

(Start: 24 @48730 has 2 MA's), (29, 48886), (32, 48919), (36, 48979), (39, 49072),