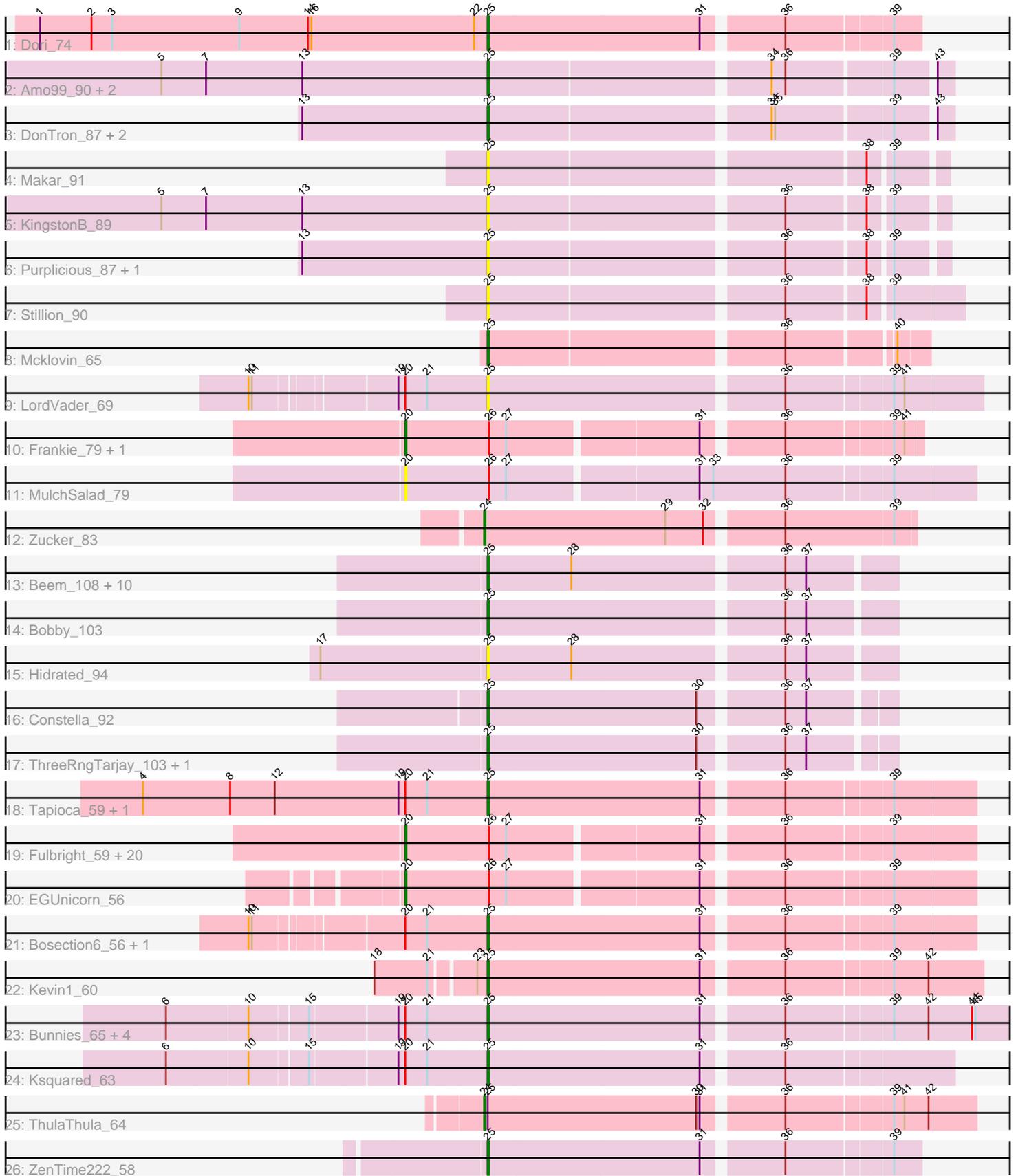# Pham 291139

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 291139 Report

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

Pham number 291139 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: EGUnicorn_56 Start: 37062, Stop: 37526, Start Num: 20
Candidate Starts for EGUnicorn_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),