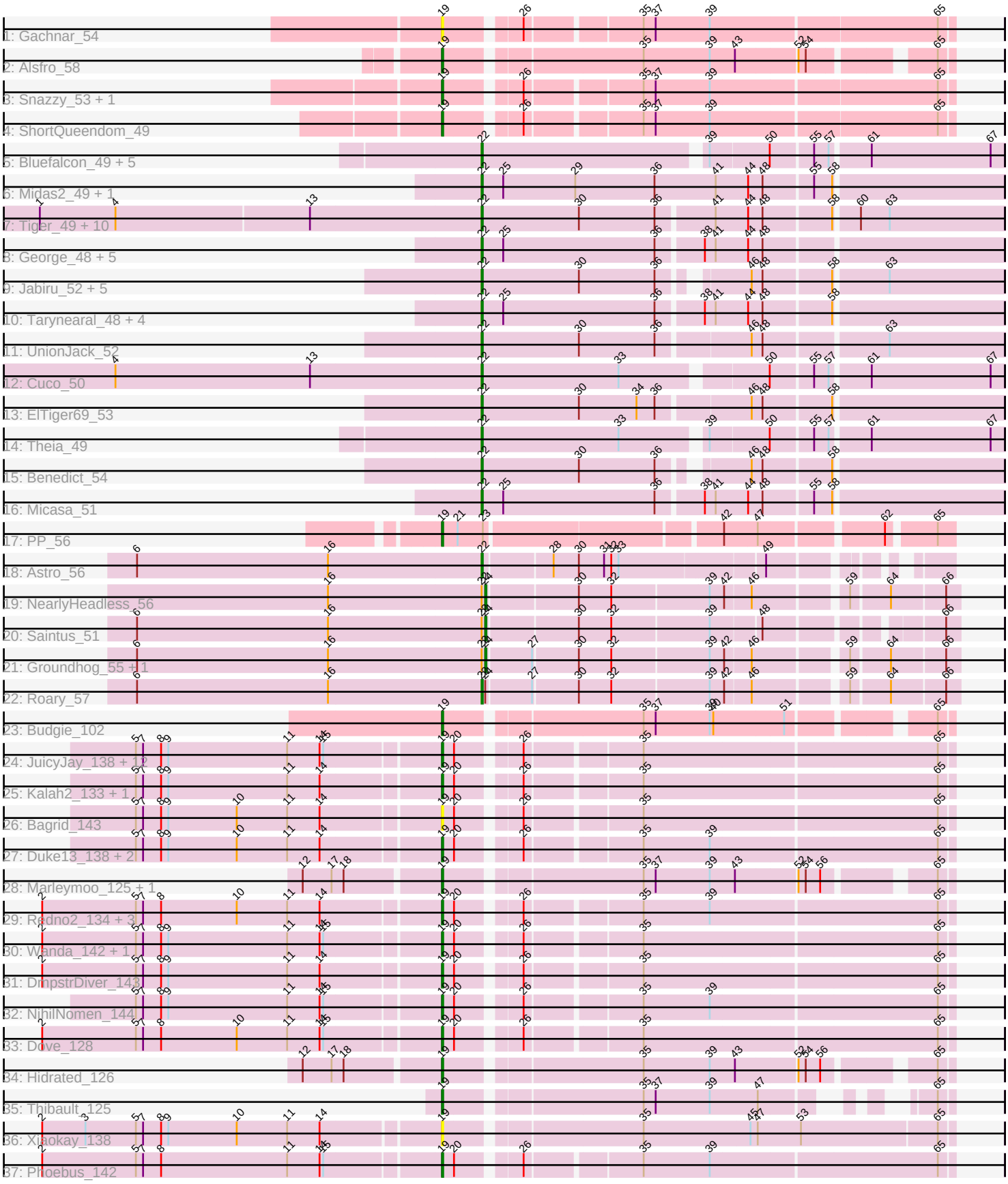
Pham 343881


1: Gachnar_54
2: Alsfro_58
3: Snazzy_53 + 1
4: ShortQueendom_49
5: Bluefalcon_49 + 5
6: Midas2_49 + 1
7: Tiger_49 + 10
8: George_48 + 5
9: Jabiru_52 + 5
10: Tarynearal_48 + 4
11: UnionJack_52
12: Cuco_50
13: ElTiger69_53
14: Theia_49
15: Benedict_54
16: Micasa_51
17: PP_56
18: Astro_56
19: NearlyHeadless_56
20: Saintus_51
21: Groundhog_55 + 1
22: Roary_57
23: Budgie_102
24: JuicyJay_138 + 12
25: Kalah2_133 + 1
26: Bagrid_143
27: Duke13_138 + 2
28: Marleymoo_125 + 1
29: Radno2_134 + 3
30: Wanda_142 + 1
31: DmpstrDiver_143
32: NihilNomen_144
33: Dove_128
34: Hidrated_126
35: Thibault_125
36: Xiaokay_138
37: Phoebus_142

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 343881 Report

This analysis was run 11/14/26 on database version 672.

Pham number 343881 has 89 members, 7 are drafts.

Phages represented in each track:
• Track 1 : Gachnar_54
• Track 2 : Alsfro_58
• Track 3 : Snazzy_53, GMonster_51
• Track 4 : ShortQueendom_49
• Track 5 : Bluefalcon_49, SydNat_53, Dublin_50, MarysWell_50, Ghoulboy_53, Zolita_52
• Track 6 : Midas2_49, Coog_49
• Track 7 : Tiger_49, Jovo_50, AgentM_49, Aragog_49, Phlorence_48, Conspiracy_50, PickleBack_50, Lev2_50, Archetta_49, Discoknowium_48, ForGetIt_50
• Track 8 : George_48, LittleCherry_50, HuhtaEnerson15_50, Prinashe11_49, Bonamassa_50, Twigg_50
• Track 9 : Jabiru_52, PetterN_55, Scorpia_55, Naca_51, Airmid_51, Chadwick_54
• Track 10 : Tarynearal_48, Florence4_50, Milcery_50, Swirley_52, Florence1_48
• Track 11 : UnionJack_52
• Track 12 : Cuco_50
• Track 13 : ElTiger69_53
• Track 14 : Theia_49
• Track 15 : Benedict_54
• Track 16 : Micasa_51
• Track 17 : PP_56
• Track 18 : Astro_56
• Track 19 : NearlyHeadless_56
• Track 20 : Saintus_51
• Track 21 : Groundhog_55, Danforth_56
• Track 22 : Roary_57
• Track 23 : Budgie_102
• Track 24 : JuicyJay_138, Optimus_133, Dallas_143, Beem_144, Halley_144, Ejimix_135, Minerva_142, Pound_130, Hughesyang_141, Klein_140, Constella_136, Zelink_137, Bombitas_130
• Track 25 : Kalah2_133, Schatzie_138
• Track 26 : Bagrid_143
• Track 27 : Duke13_138, BAKA_142, EricMillard_134
• Track 28 : Marleymoo_125, Bobby_132
• Track 29 : Redno2_134, ThreeRngTarjay_137, Yeet_135, HokkenD_134
• Track 30 : Wanda_142, Odette_146
• Track 31 : DmpstrDiver_143

• Track 32 : NihilNomen_144
• Track 33 : Dove_128
• Track 34 : Hidrated_126
• Track 35 : Thibault_125
• Track 36 : Xiaokay_138
• Track 37 : Phoebus_142

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

The start number called the most often in the published annotations is 22, it was called in 42 of the 82 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• AgentM_49, Airmid_51, Aragog_49, Archetta_49, Astro_56, Benedict_54, Bluefalcon_49, Bonamassa_50, Chadwick_54, Conspiracy_50, Coog_49, Cuco_50, Discoknowium_48, Dublin_50, ElTiger69_53, Florence1_48, Florence4_50, ForGetIt_50, George_48, Ghoulboy_53, HuhtaEnerson15_50, Jabiru_52, Jovo_50, Lev2_50, LittleCherry_50, MarysWell_50, Micasa_51, Midas2_49, Milcery_50, Naca_51, PetterN_55, Phlorence_48, PickleBack_50, Prinashe11_49, Roary_57, Scorpia_55, Swirley_52, SydNat_53, Tarynearal_48, Theia_49, Tiger_49, Twigg_50, UnionJack_52, Zolita_52,

Genes that have the "Most Annotated" start but do not call it:
• Danforth_56, Groundhog_55, NearlyHeadless_56, Saintus_51,

Genes that do not have the "Most Annotated" start:
• Alsfro_58, BAKA_142, Bagrid_143, Beem_144, Bobby_132, Bombitas_130, Budgie_102, Constella_136, Dallas_143, DmpstrDiver_143, Dove_128, Duke13_138, Ejimix_135, EricMillard_134, GMonster_51, Gachnar_54, Halley_144, Hidrated_126, HokkenD_134, Hughesyang_141, JuicyJay_138, Kalah2_133, Klein_140, Marleymoo_125, Minerva_142, NihilNomen_144, Odette_146, Optimus_133, PP_56, Phoebus_142, Pound_130, Redno2_134, Schatzie_138, ShortQueendom_49, Snazzy_53, Thibault_125, ThreeRngTarjay_137, Wanda_142, Xiaokay_138, Yeet_135, Zelink_137,

Summary by start number:

Start 19:
• Found in 41 of 89 (46.1%) of genes in pham
• Manual Annotations of this start: 36 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Alsfro_58 (A1), BAKA_142 (J), Bagrid_143 (J), Beem_144 (J), Bobby_132 (J), Bombitas_130 (J), Budgie_102 (E), Constella_136 (J), Dallas_143 (J), DmpstrDiver_143 (J), Dove_128 (J), Duke13_138 (J), Ejimix_135 (J), EricMillard_134 (J), GMonster_51 (A1), Gachnar_54 (A1), Halley_144 (J), Hidrated_126 (J), HokkenD_134 (J), Hughesyang_141 (J), JuicyJay_138 (J), Kalah2_133 (J), Klein_140 (J), Marleymoo_125 (J), Minerva_142 (J), NihilNomen_144 (J), Odette_146 (J), Optimus_133 (J), PP_56 (A7), Phoebus_142 (J), Pound_130 (J), Redno2_134 (J), Schatzie_138 (J), ShortQueendom_49 (A1), Snazzy_53 (A1), Thibault_125 (J), ThreeRngTarjay_137

(J), Wanda_142 (J), Xiaokay_138 (J), Yeet_135 (J), Zelink_137 (J),

Start 22:
• Found in 48 of 89 (53.9%) of genes in pham
• Manual Annotations of this start: 42 of 82
• Called 91.7% of time when present
• Phage (with cluster) where this start called: AgentM_49 (A5), Airmid_51 (A5), Aragog_49 (A5), Archetta_49 (A5), Astro_56 (A8), Benedict_54 (A5), Bluefalcon_49 (A5), Bonamassa_50 (A5), Chadwick_54 (A5), Conspiracy_50 (A5), Coog_49 (A5), Cuco_50 (A5), Discoknowium_48 (A5), Dublin_50 (A5), ElTiger69_53 (A5), Florence1_48 (A5), Florence4_50 (A5), ForGetIt_50 (A5), George_48 (A5), Ghoulboy_53 (A5), HuhtaEnerson15_50 (A5), Jabiru_52 (A5), Jovo_50 (A5), Lev2_50 (A5), LittleCherry_50 (A5), MarysWell_50 (A5), Micasa_51 (A5), Midas2_49 (A5), Milcery_50 (A5), Naca_51 (A5), PetterN_55 (A5), Phlorence_48 (A5), PickleBack_50 (A5), Prinashe11_49 (A5), Roary_57 (A8), Scorpia_55 (A5), Swirley_52 (A5), SydNat_53 (A5), Tarynearal_48 (A5), Theia_49 (A5), Tiger_49 (A5), Twigg_50 (A5), UnionJack_52 (A5), Zolita_52 (A5),

Start 24:
• Found in 5 of 89 (5.6%) of genes in pham
• Manual Annotations of this start: 4 of 82
• Called 80.0% of time when present
• Phage (with cluster) where this start called: Danforth_56 (A8), Groundhog_55 (A8), NearlyHeadless_56 (A8), Saintus_51 (A8),

Summary by clusters:

There are 6 clusters represented in this pham: E, J, A1, A5, A7, A8,

Info for manual annotations of cluster A1:
•Start number 19 was manually annotated 4 times for cluster A1.

Info for manual annotations of cluster A5:
•Start number 22 was manually annotated 40 times for cluster A5.

Info for manual annotations of cluster A7:
•Start number 19 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster A8:
•Start number 22 was manually annotated 2 times for cluster A8.
•Start number 24 was manually annotated 4 times for cluster A8.

Info for manual annotations of cluster E:
•Start number 19 was manually annotated 1 time for cluster E.

Info for manual annotations of cluster J:
•Start number 19 was manually annotated 30 times for cluster J.

Gene Information:

Gene: AgentM_49 Start: 36924, Stop: 36505, Start Num: 22

Candidate Starts for AgentM_49:
(1, 37287), (4, 37224), (13, 37065), (Start: 22 @36924 has 42 MA's), (30, 36843), (36, 36780), (41, 36735), (44, 36708), (48, 36696), (58, 36642), (60, 36624), (63, 36600),

Gene: Airmid_51 Start: 37065, Stop: 36664, Start Num: 22
Candidate Starts for Airmid_51:
(Start: 22 @37065 has 42 MA's), (30, 36984), (36, 36921), (46, 36864), (48, 36855), (58, 36801), (63, 36759),

Gene: Alsfro_58 Start: 38822, Stop: 38445, Start Num: 19
Candidate Starts for Alsfro_58:
(Start: 19 @38822 has 36 MA's), (35, 38672), (39, 38618), (43, 38597), (52, 38549), (54, 38543), (65, 38456),

Gene: Aragog_49 Start: 36944, Stop: 36525, Start Num: 22
Candidate Starts for Aragog_49:
(1, 37307), (4, 37244), (13, 37085), (Start: 22 @36944 has 42 MA's), (30, 36863), (36, 36800), (41, 36755), (44, 36728), (48, 36716), (58, 36662), (60, 36644), (63, 36620),

Gene: Archetta_49 Start: 37354, Stop: 36935, Start Num: 22
Candidate Starts for Archetta_49:
(1, 37717), (4, 37654), (13, 37495), (Start: 22 @37354 has 42 MA's), (30, 37273), (36, 37210), (41, 37165), (44, 37138), (48, 37126), (58, 37072), (60, 37054), (63, 37030),

Gene: Astro_56 Start: 36909, Stop: 36574, Start Num: 22
Candidate Starts for Astro_56:
(6, 37194), (16, 37035), (Start: 22 @36909 has 42 MA's), (28, 36855), (30, 36834), (31, 36813), (32, 36807), (33, 36801), (49, 36687),

Gene: BAKA_142 Start: 75397, Stop: 75786, Start Num: 19
Candidate Starts for BAKA_142:
(5, 75151), (7, 75157), (8, 75172), (9, 75178), (10, 75235), (11, 75277), (14, 75304), (Start: 19 @75397 has 36 MA's), (20, 75406), (26, 75451), (35, 75538), (39, 75592), (65, 75775),

Gene: Bagrid_143 Start: 76092, Stop: 76481, Start Num: 19
Candidate Starts for Bagrid_143:
(5, 75846), (7, 75852), (8, 75867), (9, 75873), (10, 75930), (11, 75972), (14, 75999), (Start: 19 @76092 has 36 MA's), (20, 76101), (26, 76146), (35, 76233), (65, 76470),

Gene: Beem_144 Start: 76995, Stop: 77384, Start Num: 19
Candidate Starts for Beem_144:
(5, 76749), (7, 76755), (8, 76770), (9, 76776), (11, 76875), (14, 76902), (15, 76905), (Start: 19 @76995 has 36 MA's), (20, 77004), (26, 77049), (35, 77136), (65, 77373),

Gene: Benedict_54 Start: 37313, Stop: 36912, Start Num: 22
Candidate Starts for Benedict_54:
(Start: 22 @37313 has 42 MA's), (30, 37232), (36, 37169), (46, 37112), (48, 37103), (58, 37049),

Gene: Bluefalcon_49 Start: 37490, Stop: 37080, Start Num: 22
Candidate Starts for Bluefalcon_49:
(Start: 22 @37490 has 42 MA's), (39, 37313), (50, 37265), (55, 37232), (57, 37220), (61, 37190), (67, 37091),

Gene: Bobby_132 Start: 76850, Stop: 77227, Start Num: 19
Candidate Starts for Bobby_132:
(12, 76742), (17, 76766), (18, 76775), (Start: 19 @76850 has 36 MA's), (35, 77000), (37, 77009), (39, 77054), (43, 77075), (52, 77123), (54, 77129), (56, 77141), (65, 77216),

Gene: Bombitas_130 Start: 74406, Stop: 74795, Start Num: 19
Candidate Starts for Bombitas_130:
(5, 74160), (7, 74166), (8, 74181), (9, 74187), (11, 74286), (14, 74313), (15, 74316), (Start: 19 @74406 has 36 MA's), (20, 74415), (26, 74460), (35, 74547), (65, 74784),

Gene: Bonamassa_50 Start: 37367, Stop: 36948, Start Num: 22
Candidate Starts for Bonamassa_50:
(Start: 22 @37367 has 42 MA's), (25, 37349), (36, 37223), (38, 37187), (41, 37178), (44, 37151), (48, 37139),

Gene: Budgie_102 Start: 57281, Stop: 57658, Start Num: 19
Candidate Starts for Budgie_102:
(Start: 19 @57281 has 36 MA's), (35, 57431), (37, 57440), (39, 57485), (40, 57488), (51, 57545), (65, 57647),

Gene: Chadwick_54 Start: 37154, Stop: 36753, Start Num: 22
Candidate Starts for Chadwick_54:
(Start: 22 @37154 has 42 MA's), (30, 37073), (36, 37010), (46, 36953), (48, 36944), (58, 36890), (63, 36848),

Gene: Conspiracy_50 Start: 37166, Stop: 36747, Start Num: 22
Candidate Starts for Conspiracy_50:
(1, 37529), (4, 37466), (13, 37307), (Start: 22 @37166 has 42 MA's), (30, 37085), (36, 37022), (41, 36977), (44, 36950), (48, 36938), (58, 36884), (60, 36866), (63, 36842),

Gene: Constella_136 Start: 75648, Stop: 76037, Start Num: 19
Candidate Starts for Constella_136:
(5, 75402), (7, 75408), (8, 75423), (9, 75429), (11, 75528), (14, 75555), (15, 75558), (Start: 19 @75648 has 36 MA's), (20, 75657), (26, 75702), (35, 75789), (65, 76026),

Gene: Coog_49 Start: 37357, Stop: 36932, Start Num: 22
Candidate Starts for Coog_49:
(Start: 22 @37357 has 42 MA's), (25, 37339), (29, 37279), (36, 37213), (41, 37162), (44, 37135), (48, 37123), (55, 37084), (58, 37069),

Gene: Cuco_50 Start: 37214, Stop: 36804, Start Num: 22
Candidate Starts for Cuco_50:
(4, 37517), (13, 37355), (Start: 22 @37214 has 42 MA's), (33, 37100), (50, 36989), (55, 36956), (57, 36944), (61, 36914), (67, 36815),

Gene: Dallas_143 Start: 76462, Stop: 76851, Start Num: 19
Candidate Starts for Dallas_143:
(5, 76216), (7, 76222), (8, 76237), (9, 76243), (11, 76342), (14, 76369), (15, 76372), (Start: 19 @76462 has 36 MA's), (20, 76471), (26, 76516), (35, 76603), (65, 76840),

Gene: Danforth_56 Start: 36969, Stop: 36607, Start Num: 24
Candidate Starts for Danforth_56:

(6, 37257), (16, 37098), (Start: 22 @36972 has 42 MA's), (Start: 24 @36969 has 4 MA's), (27, 36933), (30, 36897), (32, 36870), (39, 36792), (42, 36780), (46, 36759), (59, 36690), (64, 36660), (66, 36618),

Gene: Discoknowium_48 Start: 36833, Stop: 36414, Start Num: 22
Candidate Starts for Discoknowium_48:
(1, 37196), (4, 37133), (13, 36974), (Start: 22 @36833 has 42 MA's), (30, 36752), (36, 36689), (41, 36644), (44, 36617), (48, 36605), (58, 36551), (60, 36533), (63, 36509),

Gene: DmpstrDiver_143 Start: 76381, Stop: 76770, Start Num: 19
Candidate Starts for DmpstrDiver_143:
(2, 76057), (5, 76135), (7, 76141), (8, 76156), (9, 76162), (11, 76261), (14, 76288), (Start: 19 @76381 has 36 MA's), (20, 76390), (26, 76435), (35, 76522), (65, 76759),

Gene: Dove_128 Start: 71980, Stop: 72369, Start Num: 19
Candidate Starts for Dove_128:
(2, 71656), (5, 71734), (7, 71740), (8, 71755), (10, 71818), (11, 71860), (14, 71887), (15, 71890), (Start: 19 @71980 has 36 MA's), (20, 71989), (26, 72034), (35, 72121), (65, 72358),

Gene: Dublin_50 Start: 37326, Stop: 36916, Start Num: 22
Candidate Starts for Dublin_50:
(Start: 22 @37326 has 42 MA's), (39, 37149), (50, 37101), (55, 37068), (57, 37056), (61, 37026), (67, 36927),

Gene: Duke13_138 Start: 73682, Stop: 74071, Start Num: 19
Candidate Starts for Duke13_138:
(5, 73436), (7, 73442), (8, 73457), (9, 73463), (10, 73520), (11, 73562), (14, 73589), (Start: 19 @73682 has 36 MA's), (20, 73691), (26, 73736), (35, 73823), (39, 73877), (65, 74060),

Gene: Ejimix_135 Start: 76530, Stop: 76919, Start Num: 19
Candidate Starts for Ejimix_135:
(5, 76284), (7, 76290), (8, 76305), (9, 76311), (11, 76410), (14, 76437), (15, 76440), (Start: 19 @76530 has 36 MA's), (20, 76539), (26, 76584), (35, 76671), (65, 76908),

Gene: ElTiger69_53 Start: 37289, Stop: 36873, Start Num: 22
Candidate Starts for ElTiger69_53:
(Start: 22 @37289 has 42 MA's), (30, 37208), (34, 37160), (36, 37145), (46, 37073), (48, 37064), (58, 37010),

Gene: EricMillard_134 Start: 75034, Stop: 75423, Start Num: 19
Candidate Starts for EricMillard_134:
(5, 74788), (7, 74794), (8, 74809), (9, 74815), (10, 74872), (11, 74914), (14, 74941), (Start: 19 @75034 has 36 MA's), (20, 75043), (26, 75088), (35, 75175), (39, 75229), (65, 75412),

Gene: Florence1_48 Start: 36696, Stop: 36277, Start Num: 22
Candidate Starts for Florence1_48:
(Start: 22 @36696 has 42 MA's), (25, 36678), (36, 36552), (38, 36516), (41, 36507), (44, 36480), (48, 36468), (58, 36414),

Gene: Florence4_50 Start: 36696, Stop: 36277, Start Num: 22
Candidate Starts for Florence4_50:
(Start: 22 @36696 has 42 MA's), (25, 36678), (36, 36552), (38, 36516), (41, 36507), (44, 36480), (48, 36468), (58, 36414),

Gene: ForGetIt_50 Start: 37191, Stop: 36772, Start Num: 22
Candidate Starts for ForGetIt_50:
(1, 37554), (4, 37491), (13, 37332), (Start: 22 @37191 has 42 MA's), (30, 37110), (36, 37047), (41, 37002), (44, 36975), (48, 36963), (58, 36909), (60, 36891), (63, 36867),

Gene: GMonster_51 Start: 37212, Stop: 36826, Start Num: 19
Candidate Starts for GMonster_51:
(Start: 19 @37212 has 36 MA's), (26, 37158), (35, 37071), (37, 37062), (39, 37017), (65, 36837),

Gene: Gachnar_54 Start: 37980, Stop: 37594, Start Num: 19
Candidate Starts for Gachnar_54:
(Start: 19 @37980 has 36 MA's), (26, 37926), (35, 37839), (37, 37830), (39, 37785), (65, 37605),

Gene: George_48 Start: 37264, Stop: 36845, Start Num: 22
Candidate Starts for George_48:
(Start: 22 @37264 has 42 MA's), (25, 37246), (36, 37120), (38, 37084), (41, 37075), (44, 37048), (48, 37036),

Gene: Ghoulboy_53 Start: 38061, Stop: 37651, Start Num: 22
Candidate Starts for Ghoulboy_53:
(Start: 22 @38061 has 42 MA's), (39, 37884), (50, 37836), (55, 37803), (57, 37791), (61, 37761), (67, 37662),

Gene: Groundhog_55 Start: 36884, Stop: 36522, Start Num: 24
Candidate Starts for Groundhog_55:
(6, 37172), (16, 37013), (Start: 22 @36887 has 42 MA's), (Start: 24 @36884 has 4 MA's), (27, 36848), (30, 36812), (32, 36785), (39, 36707), (42, 36695), (46, 36674), (59, 36605), (64, 36575), (66, 36533),

Gene: Halley_144 Start: 76846, Stop: 77235, Start Num: 19
Candidate Starts for Halley_144:
(5, 76600), (7, 76606), (8, 76621), (9, 76627), (11, 76726), (14, 76753), (15, 76756), (Start: 19 @76846 has 36 MA's), (20, 76855), (26, 76900), (35, 76987), (65, 77224),

Gene: Hidrated_126 Start: 75183, Stop: 75560, Start Num: 19
Candidate Starts for Hidrated_126:
(12, 75075), (17, 75099), (18, 75108), (Start: 19 @75183 has 36 MA's), (35, 75333), (39, 75387), (43, 75408), (52, 75456), (54, 75462), (56, 75474), (65, 75549),

Gene: HokkenD_134 Start: 75730, Stop: 76119, Start Num: 19
Candidate Starts for HokkenD_134:
(2, 75406), (5, 75484), (7, 75490), (8, 75505), (10, 75568), (11, 75610), (14, 75637), (Start: 19 @75730 has 36 MA's), (20, 75739), (26, 75784), (35, 75871), (39, 75925), (65, 76108),

Gene: Hughesyang_141 Start: 76616, Stop: 77005, Start Num: 19
Candidate Starts for Hughesyang_141:
(5, 76370), (7, 76376), (8, 76391), (9, 76397), (11, 76496), (14, 76523), (15, 76526), (Start: 19 @76616 has 36 MA's), (20, 76625), (26, 76670), (35, 76757), (65, 76994),

Gene: HuhtaEnerson15_50 Start: 37261, Stop: 36842, Start Num: 22
Candidate Starts for HuhtaEnerson15_50:
(Start: 22 @37261 has 42 MA's), (25, 37243), (36, 37117), (38, 37081), (41, 37072), (44, 37045), (48, 37033),

Gene: Jabiru_52 Start: 37168, Stop: 36767, Start Num: 22
Candidate Starts for Jabiru_52:
(Start: 22 @37168 has 42 MA's), (30, 37087), (36, 37024), (46, 36967), (48, 36958), (58, 36904), (63, 36862),

Gene: Jovo_50 Start: 37447, Stop: 37028, Start Num: 22
Candidate Starts for Jovo_50:
(1, 37810), (4, 37747), (13, 37588), (Start: 22 @37447 has 42 MA's), (30, 37366), (36, 37303), (41, 37258), (44, 37231), (48, 37219), (58, 37165), (60, 37147), (63, 37123),

Gene: JuicyJay_138 Start: 78131, Stop: 78520, Start Num: 19
Candidate Starts for JuicyJay_138:
(5, 77885), (7, 77891), (8, 77906), (9, 77912), (11, 78011), (14, 78038), (15, 78041), (Start: 19 @78131 has 36 MA's), (20, 78140), (26, 78185), (35, 78272), (65, 78509),

Gene: Kalah2_133 Start: 75737, Stop: 76126, Start Num: 19
Candidate Starts for Kalah2_133:
(5, 75491), (7, 75497), (8, 75512), (9, 75518), (11, 75617), (14, 75644), (Start: 19 @75737 has 36 MA's), (20, 75746), (26, 75791), (35, 75878), (65, 76115),

Gene: Klein_140 Start: 74339, Stop: 74728, Start Num: 19
Candidate Starts for Klein_140:
(5, 74093), (7, 74099), (8, 74114), (9, 74120), (11, 74219), (14, 74246), (15, 74249), (Start: 19 @74339 has 36 MA's), (20, 74348), (26, 74393), (35, 74480), (65, 74717),

Gene: Lev2_50 Start: 37079, Stop: 36660, Start Num: 22
Candidate Starts for Lev2_50:
(1, 37442), (4, 37379), (13, 37220), (Start: 22 @37079 has 42 MA's), (30, 36998), (36, 36935), (41, 36890), (44, 36863), (48, 36851), (58, 36797), (60, 36779), (63, 36755),

Gene: LittleCherry_50 Start: 37281, Stop: 36862, Start Num: 22
Candidate Starts for LittleCherry_50:
(Start: 22 @37281 has 42 MA's), (25, 37263), (36, 37137), (38, 37101), (41, 37092), (44, 37065), (48, 37053),

Gene: Marleymoo_125 Start: 72596, Stop: 72973, Start Num: 19
Candidate Starts for Marleymoo_125:
(12, 72488), (17, 72512), (18, 72521), (Start: 19 @72596 has 36 MA's), (35, 72746), (37, 72755), (39, 72800), (43, 72821), (52, 72869), (54, 72875), (56, 72887), (65, 72962),

Gene: MarysWell_50 Start: 37569, Stop: 37159, Start Num: 22
Candidate Starts for MarysWell_50:
(Start: 22 @37569 has 42 MA's), (39, 37392), (50, 37344), (55, 37311), (57, 37299), (61, 37269), (67, 37170),

Gene: Micasa_51 Start: 37449, Stop: 37030, Start Num: 22
Candidate Starts for Micasa_51:
(Start: 22 @37449 has 42 MA's), (25, 37431), (36, 37305), (38, 37269), (41, 37260), (44, 37233), (48, 37221), (55, 37182), (58, 37167),

Gene: Midas2_49 Start: 37357, Stop: 36932, Start Num: 22
Candidate Starts for Midas2_49:

(Start: 22 @37357 has 42 MA's), (25, 37339), (29, 37279), (36, 37213), (41, 37162), (44, 37135), (48, 37123), (55, 37084), (58, 37069),

Gene: Milcery_50 Start: 37232, Stop: 36813, Start Num: 22
Candidate Starts for Milcery_50:
(Start: 22 @37232 has 42 MA's), (25, 37214), (36, 37088), (38, 37052), (41, 37043), (44, 37016), (48, 37004), (58, 36950),

Gene: Minerva_142 Start: 75788, Stop: 76177, Start Num: 19
Candidate Starts for Minerva_142:
(5, 75542), (7, 75548), (8, 75563), (9, 75569), (11, 75668), (14, 75695), (15, 75698), (Start: 19 @75788 has 36 MA's), (20, 75797), (26, 75842), (35, 75929), (65, 76166),

Gene: Naca_51 Start: 37707, Stop: 37306, Start Num: 22
Candidate Starts for Naca_51:
(Start: 22 @37707 has 42 MA's), (30, 37626), (36, 37563), (46, 37506), (48, 37497), (58, 37443), (63, 37401),

Gene: NearlyHeadless_56 Start: 36735, Stop: 36373, Start Num: 24
Candidate Starts for NearlyHeadless_56:
(16, 36864), (Start: 22 @36738 has 42 MA's), (Start: 24 @36735 has 4 MA's), (30, 36663), (32, 36636), (39, 36558), (42, 36546), (46, 36525), (59, 36456), (64, 36426), (66, 36384),

Gene: NihilNomen_144 Start: 76076, Stop: 76465, Start Num: 19
Candidate Starts for NihilNomen_144:
(5, 75830), (7, 75836), (8, 75851), (9, 75857), (11, 75956), (14, 75983), (15, 75986), (Start: 19 @76076 has 36 MA's), (20, 76085), (26, 76130), (35, 76217), (39, 76271), (65, 76454),

Gene: Odette_146 Start: 78219, Stop: 78608, Start Num: 19
Candidate Starts for Odette_146:
(2, 77895), (5, 77973), (7, 77979), (8, 77994), (9, 78000), (11, 78099), (14, 78126), (15, 78129), (Start: 19 @78219 has 36 MA's), (20, 78228), (26, 78273), (35, 78360), (65, 78597),

Gene: Optimus_133 Start: 73356, Stop: 73745, Start Num: 19
Candidate Starts for Optimus_133:
(5, 73110), (7, 73116), (8, 73131), (9, 73137), (11, 73236), (14, 73263), (15, 73266), (Start: 19 @73356 has 36 MA's), (20, 73365), (26, 73410), (35, 73497), (65, 73734),

Gene: PP_56 Start: 41604, Stop: 41218, Start Num: 19
Candidate Starts for PP_56:
(Start: 19 @41604 has 36 MA's), (21, 41592), (23, 41571), (42, 41388), (47, 41361), (62, 41268), (65, 41232),

Gene: PetterN_55 Start: 37322, Stop: 36921, Start Num: 22
Candidate Starts for PetterN_55:
(Start: 22 @37322 has 42 MA's), (30, 37241), (36, 37178), (46, 37121), (48, 37112), (58, 37058), (63, 37016),

Gene: Phlorence_48 Start: 36824, Stop: 36405, Start Num: 22
Candidate Starts for Phlorence_48:
(1, 37187), (4, 37124), (13, 36965), (Start: 22 @36824 has 42 MA's), (30, 36743), (36, 36680), (41, 36635), (44, 36608), (48, 36596), (58, 36542), (60, 36524), (63, 36500),

Gene: Phoebus_142 Start: 77970, Stop: 78359, Start Num: 19
Candidate Starts for Phoebus_142:
(2, 77646), (5, 77724), (7, 77730), (8, 77745), (11, 77850), (14, 77877), (15, 77880), (Start: 19 @77970 has 36 MA's), (20, 77979), (26, 78024), (35, 78111), (39, 78165), (65, 78348),

Gene: PickleBack_50 Start: 37071, Stop: 36652, Start Num: 22
Candidate Starts for PickleBack_50:
(1, 37434), (4, 37371), (13, 37212), (Start: 22 @37071 has 42 MA's), (30, 36990), (36, 36927), (41, 36882), (44, 36855), (48, 36843), (58, 36789), (60, 36771), (63, 36747),

Gene: Pound_130 Start: 74668, Stop: 75057, Start Num: 19
Candidate Starts for Pound_130:
(5, 74422), (7, 74428), (8, 74443), (9, 74449), (11, 74548), (14, 74575), (15, 74578), (Start: 19 @74668 has 36 MA's), (20, 74677), (26, 74722), (35, 74809), (65, 75046),

Gene: Prinashe11_49 Start: 37140, Stop: 36715, Start Num: 22
Candidate Starts for Prinashe11_49:
(Start: 22 @37140 has 42 MA's), (25, 37122), (36, 36996), (38, 36954), (41, 36945), (44, 36918), (48, 36906),

Gene: Redno2_134 Start: 73358, Stop: 73747, Start Num: 19
Candidate Starts for Redno2_134:
(2, 73034), (5, 73112), (7, 73118), (8, 73133), (10, 73196), (11, 73238), (14, 73265), (Start: 19 @73358 has 36 MA's), (20, 73367), (26, 73412), (35, 73499), (39, 73553), (65, 73736),

Gene: Roary_57 Start: 36957, Stop: 36592, Start Num: 22
Candidate Starts for Roary_57:
(6, 37242), (16, 37083), (Start: 22 @36957 has 42 MA's), (Start: 24 @36954 has 4 MA's), (27, 36918), (30, 36882), (32, 36855), (39, 36777), (42, 36765), (46, 36744), (59, 36675), (64, 36645), (66, 36603),

Gene: Saintus_51 Start: 33622, Stop: 33272, Start Num: 24
Candidate Starts for Saintus_51:
(6, 33910), (16, 33751), (Start: 22 @33625 has 42 MA's), (Start: 24 @33622 has 4 MA's), (30, 33550), (32, 33523), (39, 33445), (48, 33406), (66, 33283),

Gene: Schatzie_138 Start: 76638, Stop: 77027, Start Num: 19
Candidate Starts for Schatzie_138:
(5, 76392), (7, 76398), (8, 76413), (9, 76419), (11, 76518), (14, 76545), (Start: 19 @76638 has 36 MA's), (20, 76647), (26, 76692), (35, 76779), (65, 77016),

Gene: Scorpia_55 Start: 37381, Stop: 36980, Start Num: 22
Candidate Starts for Scorpia_55:
(Start: 22 @37381 has 42 MA's), (30, 37300), (36, 37237), (46, 37180), (48, 37171), (58, 37117), (63, 37075),

Gene: ShortQueendom_49 Start: 35685, Stop: 35299, Start Num: 19
Candidate Starts for ShortQueendom_49:
(Start: 19 @35685 has 36 MA's), (26, 35631), (35, 35544), (37, 35535), (39, 35490), (65, 35310),

Gene: Snazzy_53 Start: 38294, Stop: 37908, Start Num: 19
Candidate Starts for Snazzy_53:
(Start: 19 @38294 has 36 MA's), (26, 38240), (35, 38153), (37, 38144), (39, 38099), (65, 37919),

Gene: Swirley_52 Start: 37437, Stop: 37018, Start Num: 22
Candidate Starts for Swirley_52:
(Start: 22 @37437 has 42 MA's), (25, 37419), (36, 37293), (38, 37257), (41, 37248), (44, 37221), (48, 37209), (58, 37155),

Gene: SydNat_53 Start: 38070, Stop: 37660, Start Num: 22
Candidate Starts for SydNat_53:
(Start: 22 @38070 has 42 MA's), (39, 37893), (50, 37845), (55, 37812), (57, 37800), (61, 37770), (67, 37671),

Gene: Tarynearal_48 Start: 36879, Stop: 36460, Start Num: 22
Candidate Starts for Tarynearal_48:
(Start: 22 @36879 has 42 MA's), (25, 36861), (36, 36735), (38, 36699), (41, 36690), (44, 36663), (48, 36651), (58, 36597),

Gene: Theia_49 Start: 37547, Stop: 37137, Start Num: 22
Candidate Starts for Theia_49:
(Start: 22 @37547 has 42 MA's), (33, 37433), (39, 37370), (50, 37322), (55, 37289), (57, 37277), (61, 37247), (67, 37148),

Gene: Thibault_125 Start: 73030, Stop: 73368, Start Num: 19
Candidate Starts for Thibault_125:
(Start: 19 @73030 has 36 MA's), (35, 73180), (37, 73189), (39, 73234), (47, 73273), (65, 73357),

Gene: ThreeRngTarjay_137 Start: 76561, Stop: 76950, Start Num: 19
Candidate Starts for ThreeRngTarjay_137:
(2, 76237), (5, 76315), (7, 76321), (8, 76336), (10, 76399), (11, 76441), (14, 76468), (Start: 19 @76561 has 36 MA's), (20, 76570), (26, 76615), (35, 76702), (39, 76756), (65, 76939),

Gene: Tiger_49 Start: 36745, Stop: 36326, Start Num: 22
Candidate Starts for Tiger_49:
(1, 37108), (4, 37045), (13, 36886), (Start: 22 @36745 has 42 MA's), (30, 36664), (36, 36601), (41, 36556), (44, 36529), (48, 36517), (58, 36463), (60, 36445), (63, 36421),

Gene: Twigg_50 Start: 37082, Stop: 36657, Start Num: 22
Candidate Starts for Twigg_50:
(Start: 22 @37082 has 42 MA's), (25, 37064), (36, 36938), (38, 36896), (41, 36887), (44, 36860), (48, 36848),

Gene: UnionJack_52 Start: 36886, Stop: 36470, Start Num: 22
Candidate Starts for UnionJack_52:
(Start: 22 @36886 has 42 MA's), (30, 36805), (36, 36742), (46, 36670), (48, 36661), (63, 36565),

Gene: Wanda_142 Start: 74268, Stop: 74657, Start Num: 19
Candidate Starts for Wanda_142:
(2, 73944), (5, 74022), (7, 74028), (8, 74043), (9, 74049), (11, 74148), (14, 74175), (15, 74178), (Start: 19 @74268 has 36 MA's), (20, 74277), (26, 74322), (35, 74409), (65, 74646),

Gene: Xiaokay_138 Start: 76094, Stop: 76495, Start Num: 19
Candidate Starts for Xiaokay_138:
(2, 75770), (3, 75806), (5, 75848), (7, 75854), (8, 75869), (9, 75875), (10, 75932), (11, 75974), (14, 76001), (Start: 19 @76094 has 36 MA's), (35, 76244), (45, 76331), (47, 76337), (53, 76373), (65, 76484),

Gene: Yeet_135 Start: 75759, Stop: 76148, Start Num: 19
Candidate Starts for Yeet_135:
(2, 75435), (5, 75513), (7, 75519), (8, 75534), (10, 75597), (11, 75639), (14, 75666), (Start: 19 @75759 has 36 MA's), (20, 75768), (26, 75813), (35, 75900), (39, 75954), (65, 76137),

Gene: Zelink_137 Start: 77080, Stop: 77469, Start Num: 19
Candidate Starts for Zelink_137:
(5, 76834), (7, 76840), (8, 76855), (9, 76861), (11, 76960), (14, 76987), (15, 76990), (Start: 19 @77080 has 36 MA's), (20, 77089), (26, 77134), (35, 77221), (65, 77458),

Gene: Zolita_52 Start: 38074, Stop: 37664, Start Num: 22
Candidate Starts for Zolita_52:
(Start: 22 @38074 has 42 MA's), (39, 37897), (50, 37849), (55, 37816), (57, 37804), (61, 37774), (67, 37675),