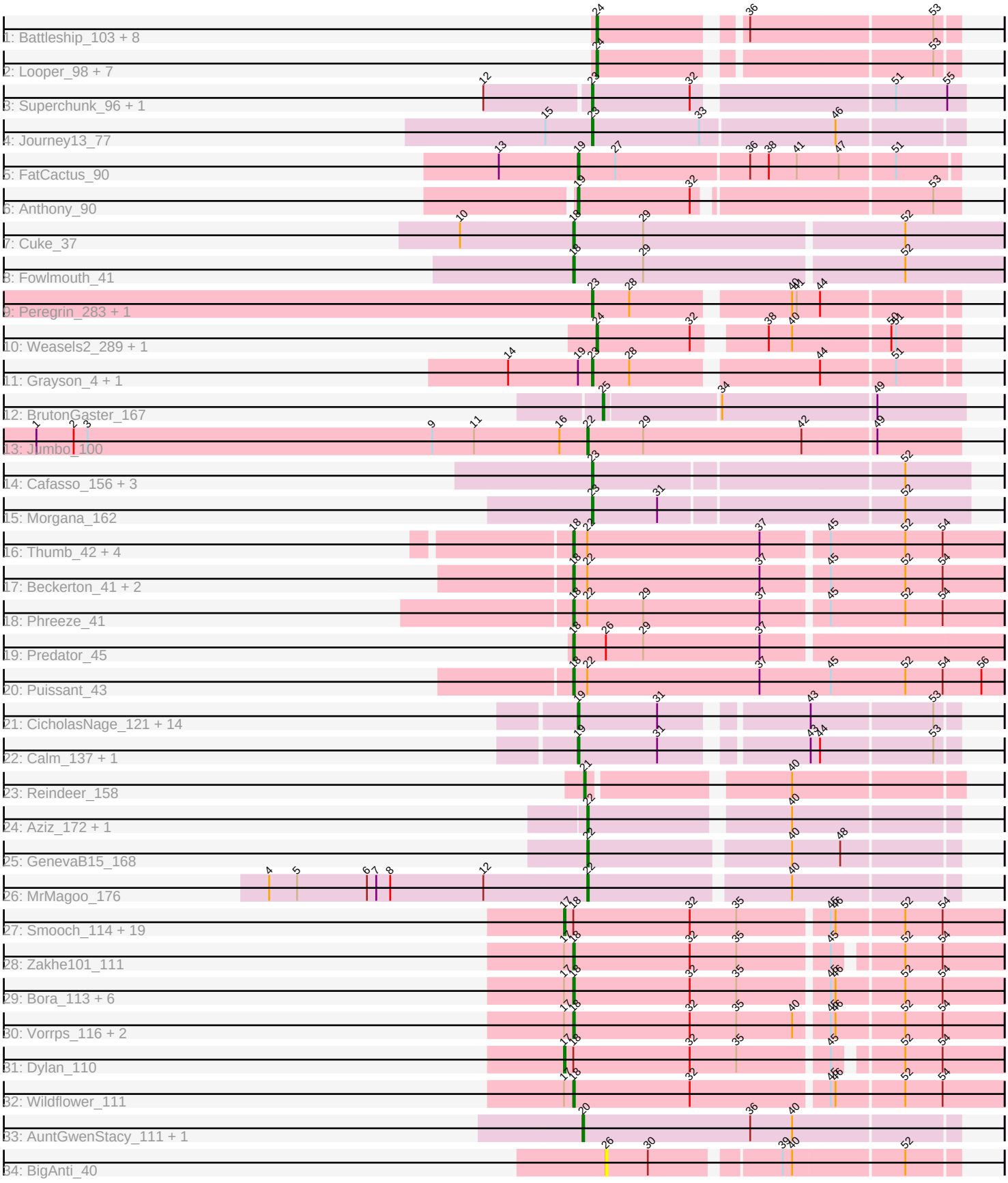
Pham 345570


1: Battleship_103 + 8
2: Looper_98 + 7
3: Superchunk_96 + 1
4: Journey13_77
5: FatCactus_90
6: Anthony_90
7: Cuke_37
8: Fowlmouth_41
9: Peregrin_283 + 1
10: Weasels2_289 + 1
11: Grayson_4 + 1
12: BrutonGaster_167
13: Jumbo_100
14: Cafasso_156 + 3
15: Morgana_162
16: Thumb_42 + 4
17: Beckerton_41 + 2
18: Phreeze_41
19: Predator_45
20: Puissant_43
21: CicholasNage_121 + 14
22: Calm_137 + 1
23: Reindeer_158
24: Aziz_172 + 1
25: GenevaB15_168
26: MrMagoo_176
27: Smooch_114 + 19
28: Zakhe101_111
29: Bora_113 + 6
30: Vorrps_116 + 2
31: Dylan_110
32: Wildflower_111
33: AuntGwenStacy_111 + 1
34: BigAnti_40

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 345570 Report

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

Pham number 345570 has 106 members, 5 are drafts.

Phages represented in each track:
• Track 1 : Battleship_103, KatherineG_100, DekHockey33_103, Elle_95, Waits_100, MinecraftSteve_101, Switzerland_99, Rosalind_101, ShayRa_99
• Track 2 : Looper_98, ReMo_99, Nebulosus_98, LastResort_99, JSwag_102, Boohoo_100, Soups_101, Anaysia_101
• Track 3 : Superchunk_96, Caraxes_96
• Track 4 : Journey13_77
• Track 5 : FatCactus_90
• Track 6 : Anthony_90
• Track 7 : Cuke_37
• Track 8 : Fowlmouth_41
• Track 9 : Peregrin_283, Peregrin_4
• Track 10 : Weasels2_289, Weasels2_3
• Track 11 : Grayson_4, Grayson_287
• Track 12 : BrutonGaster_167
• Track 13 : Jumbo_100
• Track 14 : Cafasso_156, Aleemily_154, ModicumRichard_156, ObLaDi_156
• Track 15 : Morgana_162
• Track 16 : Thumb_42, Oaker_41, BobtimousPrime_43, Nish23_44, Cborch11_43
• Track 17 : Beckerton_41, Megatron06_43, Damien_42
• Track 18 : Phreeze_41
• Track 19 : Predator_45
• Track 20 : Puissant_43
• Track 21 : CicholasNage_121, Wamburgrxpress_134, Halena_130, Wyatt2_130, OhShagHennessy_123, Appletree2_131, AvadaKedavra_131, Tyson_132, JoeDirt_132, Rose5_131, MAckerman_131, Acquire49_130, UPIE_129, LeBron_130, Poochiewood_123
• Track 22 : Calm_137, Zaria_135
• Track 23 : Reindeer_158
• Track 24 : Aziz_172, Estes_172
• Track 25 : GenevaB15_168
• Track 26 : MrMagoo_176
• Track 27 : Smooch_114, Schuy_116, Imara_115, MadKillah_119, Shida_115, Corndog_112, Firecracker_116, Wogge42_111, Idergollasper_120, KingPhillip3_114, Blessica_115, NiebruSaylor_116, YoyoKar_112, Murai_116, FoulBall_115, SchoolBus_117, JangDynasty_114, Vagabond_115, Winget_116, Familton_118
• Track 28 : Zakhe101_111

• Track 29 : Bora_113, TelAviv_112, Zebo_115, Alkhayr_116, Ryadel_121, Krili_118, Ashwin_111
• Track 30 : Vorrps_116, Mori_116, Catdawg_117
• Track 31 : Dylan_110
• Track 32 : Wildflower_111
• Track 33 : AuntGwenStacy_111, Typha_110
• Track 34 : BigAnti_40

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

The start number called the most often in the published annotations is 18, it was called in 24 of the 101 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Alkhayr_116, Ashwin_111, Beckerton_41, BobtimousPrime_43, Bora_113, Catdawg_117, Cborch11_43, Cuke_37, Damien_42, Fowlmouth_41, Krili_118, Megatron06_43, Mori_116, Nish23_44, Oaker_41, Phreeze_41, Predator_45, Puissant_43, Ryadel_121, TelAviv_112, Thumb_42, Vorrps_116, Wildflower_111, Zakhe101_111, Zebo_115,

Genes that have the "Most Annotated" start but do not call it:
• Blessica_115, Corndog_112, Dylan_110, Familton_118, Firecracker_116, FoulBall_115, Idergollasper_120, Imara_115, JangDynasty_114, KingPhillip3_114, MadKillah_119, Murai_116, NiebruSaylor_116, SchoolBus_117, Schuy_116, Shida_115, Smooch_114, Vagabond_115, Winget_116, Wogge42_111, YoyoKar_112,

Genes that do not have the "Most Annotated" start:
• Acquire49_130, Aleemily_154, Anaysia_101, Anthony_90, Appletree2_131, AuntGwenStacy_111, AvadaKedavra_131, Aziz_172, Battleship_103, BigAnti_40, Boohoo_100, BrutonGaster_167, Cafasso_156, Calm_137, Caraxes_96, CicholasNage_121, DekHockey33_103, Elle_95, Estes_172, FatCactus_90, GenevaB15_168, Grayson_287, Grayson_4, Halena_130, JSwag_102, JoeDirt_132, Journey13_77, Jumbo_100, KatherineG_100, LastResort_99, LeBron_130, Looper_98, MAckerman_131, MinecraftSteve_101, ModicumRichard_156, Morgana_162, MrMagoo_176, Nebulosus_98, ObLaDi_156, OhShagHennessy_123, Peregrin_283, Peregrin_4, Poochiewood_123, ReMo_99, Reindeer_158, Rosalind_101, Rose5_131, ShayRa_99, Soups_101, Superchunk_96, Switzerland_99, Typha_110, Tyson_132, UPIE_129, Waits_100, Wamburgrxpress_134, Weasels2_289, Weasels2_3, Wyatt2_130, Zaria_135,

Summary by start number:

Start 17:
• Found in 33 of 106 (31.1%) of genes in pham
• Manual Annotations of this start: 19 of 101
• Called 63.6% of time when present
• Phage (with cluster) where this start called: Blessica_115 (O), Corndog_112 (O), Dylan_110 (O), Familton_118 (O), Firecracker_116 (O), FoulBall_115 (O), Idergollasper_120 (O), Imara_115 (O), JangDynasty_114 (O), KingPhillip3_114 (O),

MadKillah_119 (O), Murai_116 (O), NiebruSaylor_116 (O), SchoolBus_117 (O), Schuy_116 (O), Shida_115 (O), Smooch_114 (O), Vagabond_115 (O), Winget_116 (O), Wogge42_111 (O), YoyoKar_112 (O),

Start 18:
• Found in 46 of 106 (43.4%) of genes in pham
• Manual Annotations of this start: 24 of 101
• Called 54.3% of time when present
• Phage (with cluster) where this start called: Alkhayr_116 (O), Ashwin_111 (O), Beckerton_41 (H1), BobtimousPrime_43 (H1), Bora_113 (O), Catdawg_117 (O), Cborch11_43 (H1), Cuke_37 (AC), Damien_42 (H1), Fowlmouth_41 (AC), Krili_118 (O), Megatron06_43 (H1), Mori_116 (O), Nish23_44 (H1), Oaker_41 (H1), Phreeze_41 (H1), Predator_45 (H1), Puissant_43 (H1), Ryadel_121 (O), TelAviv_112 (O), Thumb_42 (H1), Vorrps_116 (O), Wildflower_111 (O), Zakhe101_111 (O), Zebo_115 (O),

Start 19:
• Found in 21 of 106 (19.8%) of genes in pham
• Manual Annotations of this start: 18 of 101
• Called 90.5% of time when present
• Phage (with cluster) where this start called: Acquire49_130 (L1), Anthony_90 (A20), Appletree2_131 (L1), AvadaKedavra_131 (L1), Calm_137 (L1), CicholasNage_121 (L1), FatCactus_90 (A20), Halena_130 (L1), JoeDirt_132 (L1), LeBron_130 (L1), MAckerman_131 (L1), OhShagHennessy_123 (L1), Poochiewood_123 (L1), Rose5_131 (L1), Tyson_132 (L1), UPIE_129 (L1), Wamburgrxpress_134 (L1), Wyatt2_130 (L1), Zaria_135 (L1),

Start 20:
• Found in 2 of 106 (1.9%) of genes in pham
• Manual Annotations of this start: 2 of 101
• Called 100.0% of time when present
• Phage (with cluster) where this start called: AuntGwenStacy_111 (Y), Typha_110 (Y),

Start 21:
• Found in 1 of 106 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 101
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Reindeer_158 (M1),

Start 22:
• Found in 15 of 106 (14.2%) of genes in pham
• Manual Annotations of this start: 5 of 101
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Aziz_172 (M2), Estes_172 (M2), GenevaB15_168 (M2), Jumbo_100 (DF3), MrMagoo_176 (M2),

Start 23:
• Found in 12 of 106 (11.3%) of genes in pham
• Manual Annotations of this start: 12 of 101
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aleemily_154 (DZ), Cafasso_156 (DZ), Caraxes_96 (A2), Grayson_287 (CB), Grayson_4 (CB), Journey13_77 (A2),

ModicumRichard_156 (DZ), Morgana_162 (DZ), ObLaDi_156 (DZ), Peregrin_283 (CB), Peregrin_4 (CB), Superchunk_96 (A2),

Start 24:
• Found in 19 of 106 (17.9%) of genes in pham
• Manual Annotations of this start: 19 of 101
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Anaysia_101 (A15), Battleship_103 (A15), Boohoo_100 (A15), DekHockey33_103 (A15), Elle_95 (A15), JSwag_102 (A15), KatherineG_100 (A15), LastResort_99 (A15), Looper_98 (A15), MinecraftSteve_101 (A15), Nebulosus_98 (A15), ReMo_99 (A15), Rosalind_101 (A15), ShayRa_99 (A15), Soups_101 (A15), Switzerland_99 (A15), Waits_100 (A15), Weasels2_289 (CB), Weasels2_3 (CB),

Start 25:
• Found in 1 of 106 (0.9%) of genes in pham
• Manual Annotations of this start: 1 of 101
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BrutonGaster_167 (CQ2),

Start 26:
• Found in 2 of 106 (1.9%) of genes in pham
• No Manual Annotations of this start.
• Called 50.0% of time when present
• Phage (with cluster) where this start called: BigAnti_40 (singleton),

Summary by clusters:

There are 15 clusters represented in this pham: A15, A20, AC, CQ2, CB, H1, singleton, O, A2, DZ, DF3, L1, Y, M1, M2,

Info for manual annotations of cluster A15:
•Start number 24 was manually annotated 17 times for cluster A15.

Info for manual annotations of cluster A2:
•Start number 23 was manually annotated 3 times for cluster A2.

Info for manual annotations of cluster A20:
•Start number 19 was manually annotated 2 times for cluster A20.

Info for manual annotations of cluster AC:
•Start number 18 was manually annotated 2 times for cluster AC.

Info for manual annotations of cluster CB:
•Start number 23 was manually annotated 4 times for cluster CB.
•Start number 24 was manually annotated 2 times for cluster CB.

Info for manual annotations of cluster CQ2:
•Start number 25 was manually annotated 1 time for cluster CQ2.

Info for manual annotations of cluster DF3:
•Start number 22 was manually annotated 1 time for cluster DF3.

Info for manual annotations of cluster DZ:
•Start number 23 was manually annotated 5 times for cluster DZ.

Info for manual annotations of cluster H1:
•Start number 18 was manually annotated 10 times for cluster H1.

Info for manual annotations of cluster L1:
•Start number 19 was manually annotated 16 times for cluster L1.

Info for manual annotations of cluster M1:
•Start number 21 was manually annotated 1 time for cluster M1.

Info for manual annotations of cluster M2:
•Start number 22 was manually annotated 4 times for cluster M2.

Info for manual annotations of cluster O:
•Start number 17 was manually annotated 19 times for cluster O.
•Start number 18 was manually annotated 12 times for cluster O.

Info for manual annotations of cluster Y:
•Start number 20 was manually annotated 2 times for cluster Y.

Gene Information:

Gene: Acquire49_130 Start: 72231, Stop: 72010, Start Num: 19
Candidate Starts for Acquire49_130:
(Start: 19 @72231 has 18 MA's), (31, 72180), (43, 72099), (53, 72024),

Gene: Aleemily_154 Start: 81911, Stop: 82144, Start Num: 23
Candidate Starts for Aleemily_154:
(Start: 23 @81911 has 12 MA's), (52, 82103),

Gene: Alkhayr_116 Start: 66773, Stop: 66507, Start Num: 18
Candidate Starts for Alkhayr_116:
(Start: 17 @66779 has 19 MA's), (Start: 18 @66773 has 24 MA's), (32, 66698), (35, 66668), (45, 66614), (46, 66611), (52, 66569), (54, 66545),

Gene: Anaysia_101 Start: 51081, Stop: 50872, Start Num: 24
Candidate Starts for Anaysia_101:
(Start: 24 @51081 has 19 MA's), (53, 50886),

Gene: Anthony_90 Start: 50703, Stop: 50473, Start Num: 19
Candidate Starts for Anthony_90:
(Start: 19 @50703 has 18 MA's), (32, 50631), (53, 50490),

Gene: Appletree2_131 Start: 72409, Stop: 72188, Start Num: 19
Candidate Starts for Appletree2_131:
(Start: 19 @72409 has 18 MA's), (31, 72358), (43, 72277), (53, 72202),

Gene: Ashwin_111 Start: 65671, Stop: 65414, Start Num: 18
Candidate Starts for Ashwin_111:

(Start: 17 @65677 has 19 MA's), (Start: 18 @65671 has 24 MA's), (32, 65596), (35, 65566), (45, 65512), (46, 65509), (52, 65476), (54, 65452),

Gene: AuntGwenStacy_111 Start: 67266, Stop: 67502, Start Num: 20
Candidate Starts for AuntGwenStacy_111:
(Start: 20 @67266 has 2 MA's), (36, 67374), (40, 67401),

Gene: AvadaKedavra_131 Start: 72274, Stop: 72053, Start Num: 19
Candidate Starts for AvadaKedavra_131:
(Start: 19 @72274 has 18 MA's), (31, 72223), (43, 72142), (53, 72067),

Gene: Aziz_172 Start: 81638, Stop: 81417, Start Num: 22
Candidate Starts for Aziz_172:
(Start: 22 @81638 has 5 MA's), (40, 81518),

Gene: Battleship_103 Start: 50973, Stop: 50764, Start Num: 24
Candidate Starts for Battleship_103:
(Start: 24 @50973 has 19 MA's), (36, 50892), (53, 50778),

Gene: Beckerton_41 Start: 38294, Stop: 38563, Start Num: 18
Candidate Starts for Beckerton_41:
(Start: 18 @38294 has 24 MA's), (Start: 22 @38303 has 5 MA's), (37, 38414), (45, 38453), (52, 38501), (54, 38525),

Gene: BigAnti_40 Start: 40903, Stop: 41112, Start Num: 26
Candidate Starts for BigAnti_40:
(26, 40903), (30, 40930), (39, 41005), (40, 41011), (52, 41080),

Gene: Blessica_115 Start: 67445, Stop: 67173, Start Num: 17
Candidate Starts for Blessica_115:
(Start: 17 @67445 has 19 MA's), (Start: 18 @67439 has 24 MA's), (32, 67364), (35, 67334), (45, 67280), (46, 67277), (52, 67235), (54, 67211),

Gene: BobtimousPrime_43 Start: 38207, Stop: 38476, Start Num: 18
Candidate Starts for BobtimousPrime_43:
(Start: 18 @38207 has 24 MA's), (Start: 22 @38216 has 5 MA's), (37, 38327), (45, 38366), (52, 38414), (54, 38438),

Gene: Boohoo_100 Start: 50398, Stop: 50189, Start Num: 24
Candidate Starts for Boohoo_100:
(Start: 24 @50398 has 19 MA's), (53, 50203),

Gene: Bora_113 Start: 67457, Stop: 67191, Start Num: 18
Candidate Starts for Bora_113:
(Start: 17 @67463 has 19 MA's), (Start: 18 @67457 has 24 MA's), (32, 67382), (35, 67352), (45, 67298), (46, 67295), (52, 67253), (54, 67229),

Gene: BrutonGaster_167 Start: 88890, Stop: 88666, Start Num: 25
Candidate Starts for BrutonGaster_167:
(Start: 25 @88890 has 1 MA's), (34, 88818), (49, 88722),

Gene: Cafasso_156 Start: 82337, Stop: 82570, Start Num: 23
Candidate Starts for Cafasso_156:

(Start: 23 @82337 has 12 MA's), (52, 82529),

Gene: Calm_137 Start: 73492, Stop: 73271, Start Num: 19
Candidate Starts for Calm_137:
(Start: 19 @73492 has 18 MA's), (31, 73441), (43, 73360), (44, 73354), (53, 73285),

Gene: Caraxes_96 Start: 50973, Stop: 50749, Start Num: 23
Candidate Starts for Caraxes_96:
(12, 51039), (Start: 23 @50973 has 12 MA's), (32, 50910), (51, 50793), (55, 50760),

Gene: Catdawg_117 Start: 68093, Stop: 67827, Start Num: 18
Candidate Starts for Catdawg_117:
(Start: 17 @68099 has 19 MA's), (Start: 18 @68093 has 24 MA's), (32, 68018), (35, 67988), (40, 67952), (45, 67934), (46, 67931), (52, 67889), (54, 67865),

Gene: Cborch11_43 Start: 37756, Stop: 38025, Start Num: 18
Candidate Starts for Cborch11_43:
(Start: 18 @37756 has 24 MA's), (Start: 22 @37765 has 5 MA's), (37, 37876), (45, 37915), (52, 37963), (54, 37987),

Gene: CicholasNage_121 Start: 69588, Stop: 69367, Start Num: 19
Candidate Starts for CicholasNage_121:
(Start: 19 @69588 has 18 MA's), (31, 69537), (43, 69456), (53, 69381),

Gene: Corndog_112 Start: 65734, Stop: 65462, Start Num: 17
Candidate Starts for Corndog_112:
(Start: 17 @65734 has 19 MA's), (Start: 18 @65728 has 24 MA's), (32, 65653), (35, 65623), (45, 65569), (46, 65566), (52, 65524), (54, 65500),

Gene: Cuke_37 Start: 30414, Stop: 30683, Start Num: 18
Candidate Starts for Cuke_37:
(10, 30342), (Start: 18 @30414 has 24 MA's), (29, 30459), (52, 30621),

Gene: Damien_42 Start: 37764, Stop: 38033, Start Num: 18
Candidate Starts for Damien_42:
(Start: 18 @37764 has 24 MA's), (Start: 22 @37773 has 5 MA's), (37, 37884), (45, 37923), (52, 37971), (54, 37995),

Gene: DekHockey33_103 Start: 51186, Stop: 50977, Start Num: 24
Candidate Starts for DekHockey33_103:
(Start: 24 @51186 has 19 MA's), (36, 51105), (53, 50991),

Gene: Dylan_110 Start: 65781, Stop: 65518, Start Num: 17
Candidate Starts for Dylan_110:
(Start: 17 @65781 has 19 MA's), (Start: 18 @65775 has 24 MA's), (32, 65700), (35, 65670), (45, 65616), (52, 65580), (54, 65556),

Gene: Elle_95 Start: 50181, Stop: 49969, Start Num: 24
Candidate Starts for Elle_95:
(Start: 24 @50181 has 19 MA's), (36, 50100), (53, 49986),

Gene: Estes_172 Start: 81845, Stop: 81621, Start Num: 22
Candidate Starts for Estes_172:

(Start: 22 @81845 has 5 MA's), (40, 81722),

Gene: Familton_118 Start: 67806, Stop: 67534, Start Num: 17
Candidate Starts for Familton_118:
(Start: 17 @67806 has 19 MA's), (Start: 18 @67800 has 24 MA's), (32, 67725), (35, 67695), (45, 67641), (46, 67638), (52, 67596), (54, 67572),

Gene: FatCactus_90 Start: 50312, Stop: 50076, Start Num: 19
Candidate Starts for FatCactus_90:
(13, 50363), (Start: 19 @50312 has 18 MA's), (27, 50288), (36, 50204), (38, 50192), (41, 50174), (47, 50147), (51, 50114),

Gene: Firecracker_116 Start: 67314, Stop: 67042, Start Num: 17
Candidate Starts for Firecracker_116:
(Start: 17 @67314 has 19 MA's), (Start: 18 @67308 has 24 MA's), (32, 67233), (35, 67203), (45, 67149), (46, 67146), (52, 67104), (54, 67080),

Gene: FoulBall_115 Start: 67062, Stop: 66790, Start Num: 17
Candidate Starts for FoulBall_115:
(Start: 17 @67062 has 19 MA's), (Start: 18 @67056 has 24 MA's), (32, 66981), (35, 66951), (45, 66897), (46, 66894), (52, 66852), (54, 66828),

Gene: Fowlmouth_41 Start: 34176, Stop: 34445, Start Num: 18
Candidate Starts for Fowlmouth_41:
(Start: 18 @34176 has 24 MA's), (29, 34221), (52, 34383),

Gene: GenevaB15_168 Start: 78350, Stop: 78126, Start Num: 22
Candidate Starts for GenevaB15_168:
(Start: 22 @78350 has 5 MA's), (40, 78227), (48, 78197),

Gene: Grayson_4 Start: 1447, Stop: 1229, Start Num: 23
Candidate Starts for Grayson_4:
(14, 1501), (Start: 19 @1456 has 18 MA's), (Start: 23 @1447 has 12 MA's), (28, 1423), (44, 1312), (51, 1267),

Gene: Grayson_287 Start: 130348, Stop: 130130, Start Num: 23
Candidate Starts for Grayson_287:
(14, 130402), (Start: 19 @130357 has 18 MA's), (Start: 23 @130348 has 12 MA's), (28, 130324), (44, 130213), (51, 130168),

Gene: Halena_130 Start: 72429, Stop: 72208, Start Num: 19
Candidate Starts for Halena_130:
(Start: 19 @72429 has 18 MA's), (31, 72378), (43, 72297), (53, 72222),

Gene: Idergollasper_120 Start: 68517, Stop: 68245, Start Num: 17
Candidate Starts for Idergollasper_120:
(Start: 17 @68517 has 19 MA's), (Start: 18 @68511 has 24 MA's), (32, 68436), (35, 68406), (45, 68352), (46, 68349), (52, 68307), (54, 68283),

Gene: Imara_115 Start: 66800, Stop: 66528, Start Num: 17
Candidate Starts for Imara_115:
(Start: 17 @66800 has 19 MA's), (Start: 18 @66794 has 24 MA's), (32, 66719), (35, 66689), (45, 66635), (46, 66632), (52, 66590), (54, 66566),

Gene: JSwag_102 Start: 50605, Stop: 50396, Start Num: 24
Candidate Starts for JSwag_102:
(Start: 24 @50605 has 19 MA's), (53, 50410),

Gene: JangDynasty_114 Start: 66867, Stop: 66595, Start Num: 17
Candidate Starts for JangDynasty_114:
(Start: 17 @66867 has 19 MA's), (Start: 18 @66861 has 24 MA's), (32, 66786), (35, 66756), (45, 66702), (46, 66699), (52, 66657), (54, 66633),

Gene: JoeDirt_132 Start: 73472, Stop: 73251, Start Num: 19
Candidate Starts for JoeDirt_132:
(Start: 19 @73472 has 18 MA's), (31, 73421), (43, 73340), (53, 73265),

Gene: Journey13_77 Start: 46254, Stop: 46024, Start Num: 23
Candidate Starts for Journey13_77:
(15, 46284), (Start: 23 @46254 has 12 MA's), (33, 46185), (46, 46101),

Gene: Jumbo_100 Start: 76675, Stop: 76439, Start Num: 22
Candidate Starts for Jumbo_100:
(1, 77029), (2, 77005), (3, 76996), (9, 76774), (11, 76747), (16, 76693), (Start: 22 @76675 has 5 MA's), (29, 76639), (42, 76537), (49, 76492),

Gene: KatherineG_100 Start: 50906, Stop: 50697, Start Num: 24
Candidate Starts for KatherineG_100:
(Start: 24 @50906 has 19 MA's), (36, 50825), (53, 50711),

Gene: KingPhillip3_114 Start: 67373, Stop: 67101, Start Num: 17
Candidate Starts for KingPhillip3_114:
(Start: 17 @67373 has 19 MA's), (Start: 18 @67367 has 24 MA's), (32, 67292), (35, 67262), (45, 67208), (46, 67205), (52, 67163), (54, 67139),

Gene: Krili_118 Start: 67650, Stop: 67384, Start Num: 18
Candidate Starts for Krili_118:
(Start: 17 @67656 has 19 MA's), (Start: 18 @67650 has 24 MA's), (32, 67575), (35, 67545), (45, 67491), (46, 67488), (52, 67446), (54, 67422),

Gene: LastResort_99 Start: 50839, Stop: 50630, Start Num: 24
Candidate Starts for LastResort_99:
(Start: 24 @50839 has 19 MA's), (53, 50644),

Gene: LeBron_130 Start: 71994, Stop: 71773, Start Num: 19
Candidate Starts for LeBron_130:
(Start: 19 @71994 has 18 MA's), (31, 71943), (43, 71862), (53, 71787),

Gene: Looper_98 Start: 49688, Stop: 49479, Start Num: 24
Candidate Starts for Looper_98:
(Start: 24 @49688 has 19 MA's), (53, 49493),

Gene: MAckerman_131 Start: 72432, Stop: 72211, Start Num: 19
Candidate Starts for MAckerman_131:
(Start: 19 @72432 has 18 MA's), (31, 72381), (43, 72300), (53, 72225),

Gene: MadKillah_119 Start: 67132, Stop: 66860, Start Num: 17
Candidate Starts for MadKillah_119:
(Start: 17 @67132 has 19 MA's), (Start: 18 @67126 has 24 MA's), (32, 67051), (35, 67021), (45, 66967), (46, 66964), (52, 66922), (54, 66898),

Gene: Megatron06_43 Start: 38293, Stop: 38562, Start Num: 18
Candidate Starts for Megatron06_43:
(Start: 18 @38293 has 24 MA's), (Start: 22 @38302 has 5 MA's), (37, 38413), (45, 38452), (52, 38500), (54, 38524),

Gene: MinecraftSteve_101 Start: 50769, Stop: 50560, Start Num: 24
Candidate Starts for MinecraftSteve_101:
(Start: 24 @50769 has 19 MA's), (36, 50688), (53, 50574),

Gene: ModicumRichard_156 Start: 82598, Stop: 82831, Start Num: 23
Candidate Starts for ModicumRichard_156:
(Start: 23 @82598 has 12 MA's), (52, 82790),

Gene: Morgana_162 Start: 82939, Stop: 83172, Start Num: 23
Candidate Starts for Morgana_162:
(Start: 23 @82939 has 12 MA's), (31, 82981), (52, 83131),

Gene: Mori_116 Start: 67676, Stop: 67410, Start Num: 18
Candidate Starts for Mori_116:
(Start: 17 @67682 has 19 MA's), (Start: 18 @67676 has 24 MA's), (32, 67601), (35, 67571), (40, 67535), (45, 67517), (46, 67514), (52, 67472), (54, 67448),

Gene: MrMagoo_176 Start: 82529, Stop: 82305, Start Num: 22
Candidate Starts for MrMagoo_176:
(4, 82733), (5, 82715), (6, 82670), (7, 82664), (8, 82655), (12, 82595), (Start: 22 @82529 has 5 MA's), (40, 82406),

Gene: Murai_116 Start: 67500, Stop: 67228, Start Num: 17
Candidate Starts for Murai_116:
(Start: 17 @67500 has 19 MA's), (Start: 18 @67494 has 24 MA's), (32, 67419), (35, 67389), (45, 67335), (46, 67332), (52, 67290), (54, 67266),

Gene: Nebulosus_98 Start: 50396, Stop: 50187, Start Num: 24
Candidate Starts for Nebulosus_98:
(Start: 24 @50396 has 19 MA's), (53, 50201),

Gene: NiebruSaylor_116 Start: 66796, Stop: 66524, Start Num: 17
Candidate Starts for NiebruSaylor_116:
(Start: 17 @66796 has 19 MA's), (Start: 18 @66790 has 24 MA's), (32, 66715), (35, 66685), (45, 66631), (46, 66628), (52, 66586), (54, 66562),

Gene: Nish23_44 Start: 37756, Stop: 38025, Start Num: 18
Candidate Starts for Nish23_44:
(Start: 18 @37756 has 24 MA's), (Start: 22 @37765 has 5 MA's), (37, 37876), (45, 37915), (52, 37963), (54, 37987),

Gene: Oaker_41 Start: 38011, Stop: 38280, Start Num: 18
Candidate Starts for Oaker_41:

(Start: 18 @38011 has 24 MA's), (Start: 22 @38020 has 5 MA's), (37, 38131), (45, 38170), (52, 38218), (54, 38242),

Gene: ObLaDi_156 Start: 82597, Stop: 82830, Start Num: 23
Candidate Starts for ObLaDi_156:
(Start: 23 @82597 has 12 MA's), (52, 82789),

Gene: OhShagHennessy_123 Start: 71193, Stop: 70972, Start Num: 19
Candidate Starts for OhShagHennessy_123:
(Start: 19 @71193 has 18 MA's), (31, 71142), (43, 71061), (53, 70986),

Gene: Peregrin_283 Start: 131539, Stop: 131321, Start Num: 23
Candidate Starts for Peregrin_283:
(Start: 23 @131539 has 12 MA's), (28, 131515), (40, 131422), (41, 131419), (44, 131404),

Gene: Peregrin_4 Start: 1470, Stop: 1252, Start Num: 23
Candidate Starts for Peregrin_4:
(Start: 23 @1470 has 12 MA's), (28, 1446), (40, 1353), (41, 1350), (44, 1335),

Gene: Phreeze_41 Start: 37819, Stop: 38088, Start Num: 18
Candidate Starts for Phreeze_41:
(Start: 18 @37819 has 24 MA's), (Start: 22 @37828 has 5 MA's), (29, 37864), (37, 37939), (45, 37978), (52, 38026), (54, 38050),

Gene: Poochiewood_123 Start: 70018, Stop: 69797, Start Num: 19
Candidate Starts for Poochiewood_123:
(Start: 19 @70018 has 18 MA's), (31, 69967), (43, 69886), (53, 69811),

Gene: Predator_45 Start: 37593, Stop: 37862, Start Num: 18
Candidate Starts for Predator_45:
(Start: 18 @37593 has 24 MA's), (26, 37614), (29, 37638), (37, 37713),

Gene: Puissant_43 Start: 38658, Stop: 38933, Start Num: 18
Candidate Starts for Puissant_43:
(Start: 18 @38658 has 24 MA's), (Start: 22 @38667 has 5 MA's), (37, 38778), (45, 38823), (52, 38871), (54, 38895), (56, 38919),

Gene: ReMo_99 Start: 50822, Stop: 50613, Start Num: 24
Candidate Starts for ReMo_99:
(Start: 24 @50822 has 19 MA's), (53, 50627),

Gene: Reindeer_158 Start: 80568, Stop: 80347, Start Num: 21
Candidate Starts for Reindeer_158:
(Start: 21 @80568 has 1 MA's), (40, 80451),

Gene: Rosalind_101 Start: 50902, Stop: 50693, Start Num: 24
Candidate Starts for Rosalind_101:
(Start: 24 @50902 has 19 MA's), (36, 50821), (53, 50707),

Gene: Rose5_131 Start: 72502, Stop: 72281, Start Num: 19
Candidate Starts for Rose5_131:
(Start: 19 @72502 has 18 MA's), (31, 72451), (43, 72370), (53, 72295),

Gene: Ryadel_121 Start: 68642, Stop: 68376, Start Num: 18
Candidate Starts for Ryadel_121:
(Start: 17 @68648 has 19 MA's), (Start: 18 @68642 has 24 MA's), (32, 68567), (35, 68537), (45, 68483), (46, 68480), (52, 68438), (54, 68414),

Gene: SchoolBus_117 Start: 67682, Stop: 67410, Start Num: 17
Candidate Starts for SchoolBus_117:
(Start: 17 @67682 has 19 MA's), (Start: 18 @67676 has 24 MA's), (32, 67601), (35, 67571), (45, 67517), (46, 67514), (52, 67472), (54, 67448),

Gene: Schuy_116 Start: 66841, Stop: 66569, Start Num: 17
Candidate Starts for Schuy_116:
(Start: 17 @66841 has 19 MA's), (Start: 18 @66835 has 24 MA's), (32, 66760), (35, 66730), (45, 66676), (46, 66673), (52, 66631), (54, 66607),

Gene: ShayRa_99 Start: 49454, Stop: 49245, Start Num: 24
Candidate Starts for ShayRa_99:
(Start: 24 @49454 has 19 MA's), (36, 49373), (53, 49259),

Gene: Shida_115 Start: 67343, Stop: 67071, Start Num: 17
Candidate Starts for Shida_115:
(Start: 17 @67343 has 19 MA's), (Start: 18 @67337 has 24 MA's), (32, 67262), (35, 67232), (45, 67178), (46, 67175), (52, 67133), (54, 67109),

Gene: Smooch_114 Start: 67380, Stop: 67108, Start Num: 17
Candidate Starts for Smooch_114:
(Start: 17 @67380 has 19 MA's), (Start: 18 @67374 has 24 MA's), (32, 67299), (35, 67269), (45, 67215), (46, 67212), (52, 67170), (54, 67146),

Gene: Soups_101 Start: 51147, Stop: 50938, Start Num: 24
Candidate Starts for Soups_101:
(Start: 24 @51147 has 19 MA's), (53, 50952),

Gene: Superchunk_96 Start: 50973, Stop: 50749, Start Num: 23
Candidate Starts for Superchunk_96:
(12, 51039), (Start: 23 @50973 has 12 MA's), (32, 50910), (51, 50793), (55, 50760),

Gene: Switzerland_99 Start: 50423, Stop: 50214, Start Num: 24
Candidate Starts for Switzerland_99:
(Start: 24 @50423 has 19 MA's), (36, 50342), (53, 50228),

Gene: TelAviv_112 Start: 67409, Stop: 67143, Start Num: 18
Candidate Starts for TelAviv_112:
(Start: 17 @67415 has 19 MA's), (Start: 18 @67409 has 24 MA's), (32, 67334), (35, 67304), (45, 67250), (46, 67247), (52, 67205), (54, 67181),

Gene: Thumb_42 Start: 37751, Stop: 38020, Start Num: 18
Candidate Starts for Thumb_42:
(Start: 18 @37751 has 24 MA's), (Start: 22 @37760 has 5 MA's), (37, 37871), (45, 37910), (52, 37958), (54, 37982),

Gene: Typha_110 Start: 67267, Stop: 67503, Start Num: 20
Candidate Starts for Typha_110:

(Start: 20 @67267 has 2 MA's), (36, 67375), (40, 67402),

Gene: Tyson_132 Start: 72982, Stop: 72761, Start Num: 19
Candidate Starts for Tyson_132:
(Start: 19 @72982 has 18 MA's), (31, 72931), (43, 72850), (53, 72775),

Gene: UPIE_129 Start: 72301, Stop: 72080, Start Num: 19
Candidate Starts for UPIE_129:
(Start: 19 @72301 has 18 MA's), (31, 72250), (43, 72169), (53, 72094),

Gene: Vagabond_115 Start: 66830, Stop: 66558, Start Num: 17
Candidate Starts for Vagabond_115:
(Start: 17 @66830 has 19 MA's), (Start: 18 @66824 has 24 MA's), (32, 66749), (35, 66719), (45, 66665), (46, 66662), (52, 66620), (54, 66596),

Gene: Vorrps_116 Start: 67677, Stop: 67411, Start Num: 18
Candidate Starts for Vorrps_116:
(Start: 17 @67683 has 19 MA's), (Start: 18 @67677 has 24 MA's), (32, 67602), (35, 67572), (40, 67536), (45, 67518), (46, 67515), (52, 67473), (54, 67449),

Gene: Waits_100 Start: 51076, Stop: 50867, Start Num: 24
Candidate Starts for Waits_100:
(Start: 24 @51076 has 19 MA's), (36, 50995), (53, 50881),

Gene: Wamburgrxpress_134 Start: 72959, Stop: 72738, Start Num: 19
Candidate Starts for Wamburgrxpress_134:
(Start: 19 @72959 has 18 MA's), (31, 72908), (43, 72827), (53, 72752),

Gene: Weasels2_289 Start: 133162, Stop: 132950, Start Num: 24
Candidate Starts for Weasels2_289:
(Start: 24 @133162 has 19 MA's), (32, 133102), (38, 133066), (40, 133051), (50, 132991), (51, 132988),

Gene: Weasels2_3 Start: 1457, Stop: 1245, Start Num: 24
Candidate Starts for Weasels2_3:
(Start: 24 @1457 has 19 MA's), (32, 1397), (38, 1361), (40, 1346), (50, 1286), (51, 1283),

Gene: Wildflower_111 Start: 65312, Stop: 65046, Start Num: 18
Candidate Starts for Wildflower_111:
(Start: 17 @65318 has 19 MA's), (Start: 18 @65312 has 24 MA's), (32, 65237), (45, 65153), (46, 65150), (52, 65108), (54, 65084),

Gene: Winget_116 Start: 67532, Stop: 67260, Start Num: 17
Candidate Starts for Winget_116:
(Start: 17 @67532 has 19 MA's), (Start: 18 @67526 has 24 MA's), (32, 67451), (35, 67421), (45, 67367), (46, 67364), (52, 67322), (54, 67298),

Gene: Wogge42_111 Start: 66865, Stop: 66593, Start Num: 17
Candidate Starts for Wogge42_111:
(Start: 17 @66865 has 19 MA's), (Start: 18 @66859 has 24 MA's), (32, 66784), (35, 66754), (45, 66700), (46, 66697), (52, 66655), (54, 66631),

Gene: Wyatt2_130 Start: 72608, Stop: 72387, Start Num: 19

Candidate Starts for Wyatt2_130:
(Start: 19 @72608 has 18 MA's), (31, 72557), (43, 72476), (53, 72401),

Gene: YoyoKar_112 Start: 66890, Stop: 66618, Start Num: 17
Candidate Starts for YoyoKar_112:
(Start: 17 @66890 has 19 MA's), (Start: 18 @66884 has 24 MA's), (32, 66809), (35, 66779), (45, 66725), (46, 66722), (52, 66680), (54, 66656),

Gene: Zakhe101_111 Start: 65614, Stop: 65357, Start Num: 18
Candidate Starts for Zakhe101_111:
(Start: 17 @65620 has 19 MA's), (Start: 18 @65614 has 24 MA's), (32, 65539), (35, 65509), (45, 65455), (52, 65419), (54, 65395),

Gene: Zaria_135 Start: 72957, Stop: 72736, Start Num: 19
Candidate Starts for Zaria_135:
(Start: 19 @72957 has 18 MA's), (31, 72906), (43, 72825), (44, 72819), (53, 72750),

Gene: Zebo_115 Start: 67172, Stop: 66906, Start Num: 18
Candidate Starts for Zebo_115:
(Start: 17 @67178 has 19 MA's), (Start: 18 @67172 has 24 MA's), (32, 67097), (35, 67067), (45, 67013), (46, 67010), (52, 66968), (54, 66944),