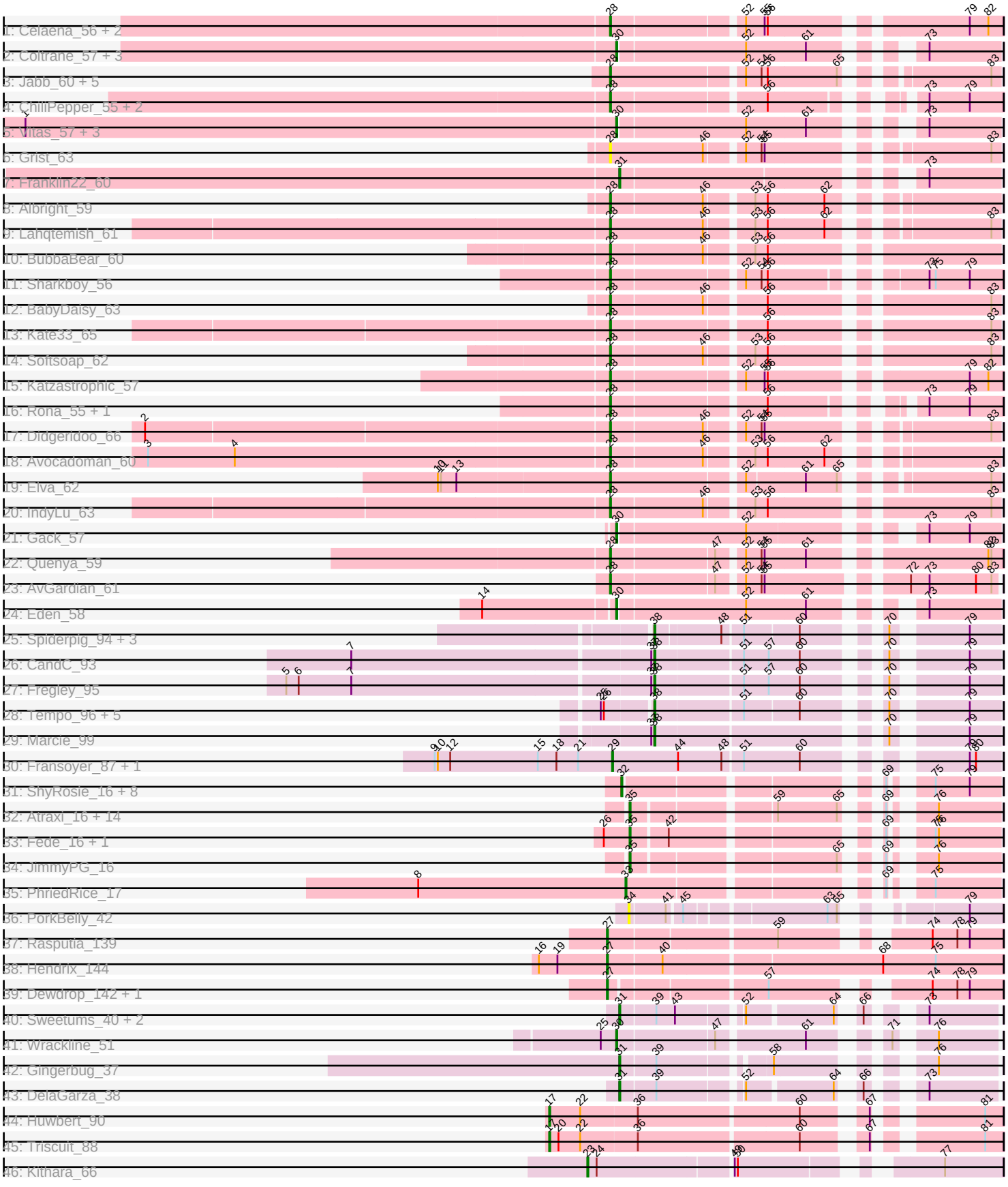
Pham 345593


1: Celaena_56 + 2
2: Coltrane_57 + 3
3: Jabb_60 + 5
4: ChiliPepper_55 + 2
5: Vitas_57 + 3
6: Grist_63
7: Franklin22_60
8: Albright_59
9: Lahqtemish_61
10: BubbaBear_60
11: Sharkboy_56
12: BabyDaisy_63
13: Kate33_65
14: Softsoap_62
15: Katzastrophic_57
16: Rona_55 + 1
17: Didgeridoo_66
18: Avocadoman_60
19: Elva_62
20: IndyLu_63
21: Gack_57
22: Quenya_59
23: AvGardian_61
24: Eden_58
25: Spiderpig_94 + 3
26: CandC_93
27: Fregley_95
28: Tempo_96 + 5
29: Marcie_99
30: Fransoyer_87 + 1
31: ShyRosie_16 + 8
32: Atraxi_16 + 14
33: Fede_16 + 1
34: JimmyPG_16
35: PhriedRice_17
36: PorkBelly_42
37: Rasputia_139
38: Hendrix_144
39: Dewdrop_142 + 1
40: Sweetums_40 + 2
41: Wrackline_51
42: Gingerbug_37
43: DelaGarza_38
44: Huwbert_90
45: Triscuit_88
46: Kithara_66

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 345593 Report

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

Pham number 345593 has 97 members, 9 are drafts.

Phages represented in each track:
• Track 1 : Celaena_56, Bachaco_56, FlameThrower_55
• Track 2 : Coltrane_57, Brahms_57, Armstrong_57, Clayda5_59
• Track 3 : Jabb_60, MsUbiquitous_60, Eula_60, CupcakePrincess_60, QMacho_62, AylexOG_61
• Track 4 : ChiliPepper_55, Dismas_56, Kamdara_55
• Track 5 : Vitas_57, Bernstein_57, Skylord_57, Rollins_57
• Track 6 : Grist_63
• Track 7 : Franklin22_60
• Track 8 : Albright_59
• Track 9 : Lahqtemish_61
• Track 10 : BubbaBear_60
• Track 11 : Sharkboy_56
• Track 12 : BabyDaisy_63
• Track 13 : Kate33_65
• Track 14 : Softsoap_62
• Track 15 : Katzastrophic_57
• Track 16 : Rona_55, Kieran_55
• Track 17 : Didgeridoo_66
• Track 18 : Avocadoman_60
• Track 19 : Elva_62
• Track 20 : IndyLu_63
• Track 21 : Gack_57
• Track 22 : Quenya_59
• Track 23 : AvGardian_61
• Track 24 : Eden_58
• Track 25 : Spiderpig_94, BirdInFrench_93, Wilca_93, Pepe25_91
• Track 26 : CandC_93
• Track 27 : Fregley_95
• Track 28 : Tempo_96, Kelcole_94, KillerQueen_97, Romm_97, RobinRose_97, OneinaGillian_92
• Track 29 : Marcie_99
• Track 30 : Fransoyer_87, SadLad_89
• Track 31 : ShyRosie_16, AloeVera_16, Ashton_16, Truong_16, JordanFarm_16, Barroma_16, Waterlily_16, SoilSleuth_16, Akoni_16
• Track 32 : Atraxi_16, Keough_16, TrippleS_16, Morrill_16, Yafa_16, Pharky_17, RicoCaldo_17, Phractured_17, Fullmetal_17, StagePhright_17, Phedro_17, Mazun_17, Astartes_17, Moleficent_17, ThirteenKH_16

• Track 33 : Fede_16, Kosier_16
• Track 34 : JimmyPG_16
• Track 35 : PhriedRice_17
• Track 36 : PorkBelly_42
• Track 37 : Rasputia_139
• Track 38 : Hendrix_144
• Track 39 : Dewdrop_142, Leaf_142
• Track 40 : Sweetums_40, Teng_39, Lesiram_39
• Track 41 : Wrackline_51
• Track 42 : Gingerbug_37
• Track 43 : DelaGarza_38
• Track 44 : Huwbert_90
• Track 45 : Triscuit_88
• Track 46 : Kithara_66

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

The start number called the most often in the published annotations is 28, it was called in 28 of the 88 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Albright_59, AvGardian_61, Avocadoman_60, AylexOG_61, BabyDaisy_63, Bachaco_56, BubbaBear_60, Celaena_56, ChiliPepper_55, CupcakePrincess_60, Didgeridoo_66, Dismas_56, Elva_62, Eula_60, FlameThrower_55, Grist_63, IndyLu_63, Jabb_60, Kamdara_55, Kate33_65, Katzastrophic_57, Kieran_55, Lahqtemish_61, MsUbiquitous_60, QMacho_62, Quenya_59, Rona_55, Sharkboy_56, Softsoap_62,

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

Genes that do not have the "Most Annotated" start:
• Akoni_16, AloeVera_16, Armstrong_57, Ashton_16, Astartes_17, Atraxi_16, Barroma_16, Bernstein_57, BirdInFrench_93, Brahms_57, CandC_93, Clayda5_59, Coltrane_57, DelaGarza_38, Dewdrop_142, Eden_58, Fede_16, Franklin22_60, Fransoyer_87, Fregley_95, Fullmetal_17, Gack_57, Gingerbug_37, Hendrix_144, Huwbert_90, JimmyPG_16, JordanFarm_16, Kelcole_94, Keough_16, KillerQueen_97, Kithara_66, Kosier_16, Leaf_142, Lesiram_39, Marcie_99, Mazun_17, Moleficent_17, Morrill_16, OneinaGillian_92, Pepe25_91, Pharky_17, Phedro_17, Phractured_17, PhriedRice_17, PorkBelly_42, Rasputia_139, RicoCaldo_17, RobinRose_97, Rollins_57, Romm_97, SadLad_89, ShyRosie_16, Skylord_57, SoilSleuth_16, Spiderpig_94, StagePhright_17, Sweetums_40, Tempo_96, Teng_39, ThirteenKH_16, TrippleS_16, Triscuit_88, Truong_16, Vitas_57, Waterlily_16, Wilca_93, Wrackline_51, Yafa_16,

Summary by start number:

Start 17:
• Found in 2 of 97 (2.1%) of genes in pham
• Manual Annotations of this start: 2 of 88

• Called 100.0% of time when present
• Phage (with cluster) where this start called: Huwbert_90 (GG), Triscuit_88 (GG),

Start 23:
• Found in 1 of 97 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Kithara_66 (singleton),

Start 27:
• Found in 4 of 97 (4.1%) of genes in pham
• Manual Annotations of this start: 4 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Dewdrop_142 (GC), Hendrix_144 (GC), Leaf_142 (GC), Rasputia_139 (GC),

Start 28:
• Found in 29 of 97 (29.9%) of genes in pham
• Manual Annotations of this start: 28 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Albright_59 (EB), AvGardian_61 (EB), Avocadoman_60 (EB), AylexOG_61 (EB), BabyDaisy_63 (EB), Bachaco_56 (EB), BubbaBear_60 (EB), Celaena_56 (EB), ChiliPepper_55 (EB), CupcakePrincess_60 (EB), Didgeridoo_66 (EB), Dismas_56 (EB), Elva_62 (EB), Eula_60 (EB), FlameThrower_55 (EB), Grist_63 (EB), IndyLu_63 (EB), Jabb_60 (EB), Kamdara_55 (EB), Kate33_65 (EB), Katzastrophic_57 (EB), Kieran_55 (EB), Lahqtemish_61 (EB), MsUbiquitous_60 (EB), QMacho_62 (EB), Quenya_59 (EB), Rona_55 (EB), Sharkboy_56 (EB), Softsoap_62 (EB),

Start 29:
• Found in 2 of 97 (2.1%) of genes in pham
• Manual Annotations of this start: 2 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Fransoyer_87 (EG), SadLad_89 (EG),

Start 30:
• Found in 11 of 97 (11.3%) of genes in pham
• Manual Annotations of this start: 11 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Armstrong_57 (EB), Bernstein_57 (EB), Brahms_57 (EB), Clayda5_59 (EB), Coltrane_57 (EB), Eden_58 (EB), Gack_57 (EB), Rollins_57 (EB), Skylord_57 (EB), Vitas_57 (EB), Wrackline_51 (GF),

Start 31:
• Found in 6 of 97 (6.2%) of genes in pham
• Manual Annotations of this start: 6 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: DelaGarza_38 (GF), Franklin22_60 (EB), Gingerbug_37 (GF), Lesiram_39 (GF), Sweetums_40 (GF), Teng_39 (GF),

Start 32:
• Found in 9 of 97 (9.3%) of genes in pham
• Manual Annotations of this start: 7 of 88

• Called 100.0% of time when present
• Phage (with cluster) where this start called: Akoni_16 (EK2), AloeVera_16 (EK2), Ashton_16 (EK2), Barroma_16 (EK2), JordanFarm_16 (EK2), ShyRosie_16 (EK2), SoilSleuth_16 (EK2), Truong_16 (EK2), Waterlily_16 (EK2),

Start 33:
• Found in 1 of 97 (1.0%) of genes in pham
• Manual Annotations of this start: 1 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: PhriedRice_17 (EK2),

Start 34:
• Found in 1 of 97 (1.0%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: PorkBelly_42 (FJ),

Start 35:
• Found in 18 of 97 (18.6%) of genes in pham
• Manual Annotations of this start: 15 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Astartes_17 (EK2), Atraxi_16 (EK2), Fede_16 (EK2), Fullmetal_17 (EK2), JimmyPG_16 (EK2), Keough_16 (EK2), Kosier_16 (EK2), Mazun_17 (EK2), Moleficent_17 (EK2), Morrill_16 (EK2), Pharky_17 (EK2), Phedro_17 (EK2), Phractured_17 (EK2), RicoCaldo_17 (EK2), StagePhright_17 (EK2), ThirteenKH_16 (EK2), TrippleS_16 (EK2), Yafa_16 (EK2),

Start 38:
• Found in 13 of 97 (13.4%) of genes in pham
• Manual Annotations of this start: 11 of 88
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BirdInFrench_93 (EG), CandC_93 (EG), Fregley_95 (EG), Kelcole_94 (EG), KillerQueen_97 (EG), Marcie_99 (EG), OneinaGillian_92 (EG), Pepe25_91 (EG), RobinRose_97 (EG), Romm_97 (EG), Spiderpig_94 (EG), Tempo_96 (EG), Wilca_93 (EG),

Summary by clusters:

There are 8 clusters represented in this pham: singleton, EG, EB, GG, GF, GC, FJ, EK2,

Info for manual annotations of cluster EB:
•Start number 28 was manually annotated 28 times for cluster EB.
•Start number 30 was manually annotated 10 times for cluster EB.
•Start number 31 was manually annotated 1 time for cluster EB.

Info for manual annotations of cluster EG:
•Start number 29 was manually annotated 2 times for cluster EG.
•Start number 38 was manually annotated 11 times for cluster EG.

Info for manual annotations of cluster EK2:
•Start number 32 was manually annotated 7 times for cluster EK2.
•Start number 33 was manually annotated 1 time for cluster EK2.

•Start number 35 was manually annotated 15 times for cluster EK2.

Info for manual annotations of cluster GC:
•Start number 27 was manually annotated 4 times for cluster GC.

Info for manual annotations of cluster GF:
•Start number 30 was manually annotated 1 time for cluster GF.
•Start number 31 was manually annotated 5 times for cluster GF.

Info for manual annotations of cluster GG:
•Start number 17 was manually annotated 2 times for cluster GG.

Gene Information:

Gene: Akoni_16 Start: 11287, Stop: 10994, Start Num: 32
Candidate Starts for Akoni_16:
(Start: 32 @11287 has 7 MA's), (69, 11080), (75, 11056), (79, 11023),

Gene: Albright_59 Start: 38042, Stop: 38365, Start Num: 28
Candidate Starts for Albright_59:
(Start: 28 @38042 has 28 MA's), (46, 38129), (53, 38168), (56, 38180), (62, 38234),

Gene: AloeVera_16 Start: 11287, Stop: 10994, Start Num: 32
Candidate Starts for AloeVera_16:
(Start: 32 @11287 has 7 MA's), (69, 11080), (75, 11056), (79, 11023),

Gene: Armstrong_57 Start: 35575, Stop: 35892, Start Num: 30
Candidate Starts for Armstrong_57:
(Start: 30 @35575 has 11 MA's), (52, 35695), (61, 35752), (73, 35824),

Gene: Ashton_16 Start: 11291, Stop: 10998, Start Num: 32
Candidate Starts for Ashton_16:
(Start: 32 @11291 has 7 MA's), (69, 11084), (75, 11060), (79, 11027),

Gene: Astartes_17 Start: 11549, Stop: 11265, Start Num: 35
Candidate Starts for Astartes_17:
(Start: 35 @11549 has 15 MA's), (59, 11426), (65, 11369), (69, 11351), (76, 11324),

Gene: Atraxi_16 Start: 11306, Stop: 11022, Start Num: 35
Candidate Starts for Atraxi_16:
(Start: 35 @11306 has 15 MA's), (59, 11183), (65, 11126), (69, 11108), (76, 11081),

Gene: AvGardian_61 Start: 39011, Stop: 39343, Start Num: 28
Candidate Starts for AvGardian_61:
(Start: 28 @39011 has 28 MA's), (47, 39107), (52, 39128), (54, 39143), (55, 39146), (72, 39260), (73, 39278), (80, 39323), (83, 39338),

Gene: Avocadoman_60 Start: 38243, Stop: 38566, Start Num: 28
Candidate Starts for Avocadoman_60:

(3, 37802), (4, 37886), (Start: 28 @38243 has 28 MA's), (46, 38330), (53, 38369), (56, 38381), (62, 38435),

Gene: AylexOG_61 Start: 38878, Stop: 39204, Start Num: 28
Candidate Starts for AylexOG_61:
(Start: 28 @38878 has 28 MA's), (52, 38998), (54, 39013), (56, 39019), (65, 39085), (83, 39196),

Gene: BabyDaisy_63 Start: 39765, Stop: 40097, Start Num: 28
Candidate Starts for BabyDaisy_63:
(Start: 28 @39765 has 28 MA's), (46, 39852), (56, 39903), (83, 40089),

Gene: Bachaco_56 Start: 38775, Stop: 39110, Start Num: 28
Candidate Starts for Bachaco_56:
(Start: 28 @38775 has 28 MA's), (52, 38892), (55, 38910), (56, 38913), (79, 39078), (82, 39096),

Gene: Barroma_16 Start: 11287, Stop: 10994, Start Num: 32
Candidate Starts for Barroma_16:
(Start: 32 @11287 has 7 MA's), (69, 11080), (75, 11056), (79, 11023),

Gene: Bernstein_57 Start: 35573, Stop: 35890, Start Num: 30
Candidate Starts for Bernstein_57:
(1, 35003), (Start: 30 @35573 has 11 MA's), (52, 35693), (61, 35750), (73, 35822),

Gene: BirdInFrench_93 Start: 56287, Stop: 56012, Start Num: 38
Candidate Starts for BirdInFrench_93:
(Start: 38 @56287 has 11 MA's), (48, 56227), (51, 56209), (60, 56158), (70, 56101), (79, 56041),

Gene: Brahms_57 Start: 35475, Stop: 35792, Start Num: 30
Candidate Starts for Brahms_57:
(Start: 30 @35475 has 11 MA's), (52, 35595), (61, 35652), (73, 35724),

Gene: BubbaBear_60 Start: 39018, Stop: 39350, Start Num: 28
Candidate Starts for BubbaBear_60:
(Start: 28 @39018 has 28 MA's), (46, 39105), (53, 39144), (56, 39156),

Gene: CandC_93 Start: 56401, Stop: 56120, Start Num: 38
Candidate Starts for CandC_93:
(7, 56686), (37, 56404), (Start: 38 @56401 has 11 MA's), (51, 56320), (57, 56296), (60, 56266), (70, 56209), (79, 56149),

Gene: Celaena_56 Start: 38537, Stop: 38872, Start Num: 28
Candidate Starts for Celaena_56:
(Start: 28 @38537 has 28 MA's), (52, 38654), (55, 38672), (56, 38675), (79, 38840), (82, 38858),

Gene: ChiliPepper_55 Start: 37847, Stop: 38161, Start Num: 28
Candidate Starts for ChiliPepper_55:
(Start: 28 @37847 has 28 MA's), (56, 37985), (73, 38090), (79, 38129),

Gene: Clayda5_59 Start: 35540, Stop: 35857, Start Num: 30
Candidate Starts for Clayda5_59:
(Start: 30 @35540 has 11 MA's), (52, 35660), (61, 35717), (73, 35789),

Gene: Coltrane_57 Start: 35475, Stop: 35792, Start Num: 30

Candidate Starts for Coltrane_57:
(Start: 30 @35475 has 11 MA's), (52, 35595), (61, 35652), (73, 35724),

Gene: CupcakePrincess_60 Start: 38349, Stop: 38675, Start Num: 28
Candidate Starts for CupcakePrincess_60:
(Start: 28 @38349 has 28 MA's), (52, 38469), (54, 38484), (56, 38490), (65, 38556), (83, 38667),

Gene: DelaGarza_38 Start: 24570, Stop: 24280, Start Num: 31
Candidate Starts for DelaGarza_38:
(Start: 31 @24570 has 6 MA's), (39, 24537), (52, 24465), (64, 24387), (66, 24378), (73, 24345),

Gene: Dewdrop_142 Start: 85102, Stop: 85425, Start Num: 27
Candidate Starts for Dewdrop_142:
(Start: 27 @85102 has 4 MA's), (57, 85240), (74, 85357), (78, 85381), (79, 85393),

Gene: Didgeridoo_66 Start: 39884, Stop: 40207, Start Num: 28
Candidate Starts for Didgeridoo_66:
(2, 39446), (Start: 28 @39884 has 28 MA's), (46, 39971), (52, 40001), (54, 40016), (55, 40019), (83, 40199),

Gene: Dismas_56 Start: 37768, Stop: 38082, Start Num: 28
Candidate Starts for Dismas_56:
(Start: 28 @37768 has 28 MA's), (56, 37906), (73, 38011), (79, 38050),

Gene: Eden_58 Start: 36683, Stop: 37000, Start Num: 30
Candidate Starts for Eden_58:
(14, 36560), (Start: 30 @36683 has 11 MA's), (52, 36803), (61, 36860), (73, 36932),

Gene: Elva_62 Start: 39454, Stop: 39777, Start Num: 28
Candidate Starts for Elva_62:
(10, 39292), (11, 39295), (13, 39310), (Start: 28 @39454 has 28 MA's), (52, 39574), (61, 39628), (65, 39658), (83, 39769),

Gene: Eula_60 Start: 38335, Stop: 38661, Start Num: 28
Candidate Starts for Eula_60:
(Start: 28 @38335 has 28 MA's), (52, 38455), (54, 38470), (56, 38476), (65, 38542), (83, 38653),

Gene: Fede_16 Start: 11540, Stop: 11253, Start Num: 35
Candidate Starts for Fede_16:
(26, 11558), (Start: 35 @11540 has 15 MA's), (42, 11507), (69, 11339), (75, 11315), (76, 11312),

Gene: FlameThrower_55 Start: 37574, Stop: 37909, Start Num: 28
Candidate Starts for FlameThrower_55:
(Start: 28 @37574 has 28 MA's), (52, 37691), (55, 37709), (56, 37712), (79, 37877), (82, 37895),

Gene: Franklin22_60 Start: 36334, Stop: 36648, Start Num: 31
Candidate Starts for Franklin22_60:
(Start: 31 @36334 has 6 MA's), (73, 36580),

Gene: Fransoyer_87 Start: 55594, Stop: 55271, Start Num: 29
Candidate Starts for Fransoyer_87:
(9, 55765), (10, 55762), (12, 55750), (15, 55666), (18, 55648), (21, 55627), (Start: 29 @55594 has 2 MA's), (44, 55531), (48, 55489), (51, 55471), (60, 55417), (79, 55300), (80, 55294),

Gene: Fregley_95 Start: 56447, Stop: 56166, Start Num: 38
Candidate Starts for Fregley_95:
(5, 56795), (6, 56783), (7, 56732), (37, 56450), (Start: 38 @56447 has 11 MA's), (51, 56366), (57, 56342), (60, 56312), (70, 56255), (79, 56195),

Gene: Fullmetal_17 Start: 11547, Stop: 11263, Start Num: 35
Candidate Starts for Fullmetal_17:
(Start: 35 @11547 has 15 MA's), (59, 11424), (65, 11367), (69, 11349), (76, 11322),

Gene: Gack_57 Start: 36282, Stop: 36596, Start Num: 30
Candidate Starts for Gack_57:
(Start: 30 @36282 has 11 MA's), (52, 36402), (73, 36528), (79, 36567),

Gene: Gingerbug_37 Start: 25076, Stop: 24786, Start Num: 31
Candidate Starts for Gingerbug_37:
(Start: 31 @25076 has 6 MA's), (39, 25043), (58, 24950), (76, 24842),

Gene: Grist_63 Start: 39220, Stop: 39546, Start Num: 28
Candidate Starts for Grist_63:
(Start: 28 @39220 has 28 MA's), (46, 39310), (52, 39340), (54, 39355), (55, 39358), (83, 39538),

Gene: Hendrix_144 Start: 89102, Stop: 89473, Start Num: 27
Candidate Starts for Hendrix_144:
(16, 89036), (19, 89054), (Start: 27 @89102 has 4 MA's), (40, 89153), (68, 89357), (75, 89408),

Gene: Huwbert_90 Start: 53979, Stop: 53599, Start Num: 17
Candidate Starts for Huwbert_90:
(Start: 17 @53979 has 2 MA's), (22, 53949), (36, 53895), (60, 53745), (67, 53697), (81, 53616),

Gene: IndyLu_63 Start: 39496, Stop: 39828, Start Num: 28
Candidate Starts for IndyLu_63:
(Start: 28 @39496 has 28 MA's), (46, 39583), (53, 39622), (56, 39634), (83, 39820),

Gene: Jabb_60 Start: 38349, Stop: 38675, Start Num: 28
Candidate Starts for Jabb_60:
(Start: 28 @38349 has 28 MA's), (52, 38469), (54, 38484), (56, 38490), (65, 38556), (83, 38667),

Gene: JimmyPG_16 Start: 11503, Stop: 11219, Start Num: 35
Candidate Starts for JimmyPG_16:
(Start: 35 @11503 has 15 MA's), (65, 11323), (69, 11305), (76, 11278),

Gene: JordanFarm_16 Start: 11287, Stop: 10994, Start Num: 32
Candidate Starts for JordanFarm_16:
(Start: 32 @11287 has 7 MA's), (69, 11080), (75, 11056), (79, 11023),

Gene: Kamdara_55 Start: 37806, Stop: 38120, Start Num: 28
Candidate Starts for Kamdara_55:
(Start: 28 @37806 has 28 MA's), (56, 37944), (73, 38049), (79, 38088),

Gene: Kate33_65 Start: 39232, Stop: 39564, Start Num: 28
Candidate Starts for Kate33_65:
(Start: 28 @39232 has 28 MA's), (56, 39370), (83, 39556),

Gene: Katzastrophic_57 Start: 38084, Stop: 38419, Start Num: 28
Candidate Starts for Katzastrophic_57:
(Start: 28 @38084 has 28 MA's), (52, 38201), (55, 38219), (56, 38222), (79, 38387), (82, 38405),

Gene: Kelcole_94 Start: 56959, Stop: 56681, Start Num: 38
Candidate Starts for Kelcole_94:
(25, 57004), (26, 57001), (Start: 38 @56959 has 11 MA's), (51, 56878), (60, 56827), (70, 56770), (79, 56710),

Gene: Keough_16 Start: 11275, Stop: 10991, Start Num: 35
Candidate Starts for Keough_16:
(Start: 35 @11275 has 15 MA's), (59, 11152), (65, 11095), (69, 11077), (76, 11050),

Gene: Kieran_55 Start: 37809, Stop: 38123, Start Num: 28
Candidate Starts for Kieran_55:
(Start: 28 @37809 has 28 MA's), (56, 37947), (73, 38052), (79, 38091),

Gene: KillerQueen_97 Start: 56878, Stop: 56600, Start Num: 38
Candidate Starts for KillerQueen_97:
(25, 56923), (26, 56920), (Start: 38 @56878 has 11 MA's), (51, 56797), (60, 56746), (70, 56689), (79, 56629),

Gene: Kithara_66 Start: 48343, Stop: 47999, Start Num: 23
Candidate Starts for Kithara_66:
(Start: 23 @48343 has 1 MA's), (24, 48334), (49, 48211), (50, 48208), (77, 48055),

Gene: Kosier_16 Start: 11540, Stop: 11253, Start Num: 35
Candidate Starts for Kosier_16:
(26, 11558), (Start: 35 @11540 has 15 MA's), (42, 11507), (69, 11339), (75, 11315), (76, 11312),

Gene: Lahqtemish_61 Start: 39515, Stop: 39841, Start Num: 28
Candidate Starts for Lahqtemish_61:
(Start: 28 @39515 has 28 MA's), (46, 39605), (53, 39644), (56, 39656), (62, 39710), (83, 39833),

Gene: Leaf_142 Start: 85033, Stop: 85356, Start Num: 27
Candidate Starts for Leaf_142:
(Start: 27 @85033 has 4 MA's), (57, 85171), (74, 85288), (78, 85312), (79, 85324),

Gene: Lesiram_39 Start: 24542, Stop: 24252, Start Num: 31
Candidate Starts for Lesiram_39:
(Start: 31 @24542 has 6 MA's), (39, 24509), (43, 24491), (52, 24437), (64, 24359), (66, 24350), (73, 24317),

Gene: Marcie_99 Start: 57159, Stop: 56878, Start Num: 38
Candidate Starts for Marcie_99:
(37, 57162), (Start: 38 @57159 has 11 MA's), (70, 56967), (79, 56907),

Gene: Mazun_17 Start: 11548, Stop: 11264, Start Num: 35
Candidate Starts for Mazun_17:
(Start: 35 @11548 has 15 MA's), (59, 11425), (65, 11368), (69, 11350), (76, 11323),

Gene: Moleficent_17 Start: 11543, Stop: 11259, Start Num: 35

Candidate Starts for Moleficent_17:
(Start: 35 @11543 has 15 MA's), (59, 11420), (65, 11363), (69, 11345), (76, 11318),

Gene: Morrill_16 Start: 11285, Stop: 11001, Start Num: 35
Candidate Starts for Morrill_16:
(Start: 35 @11285 has 15 MA's), (59, 11162), (65, 11105), (69, 11087), (76, 11060),

Gene: MsUbiquitous_60 Start: 38349, Stop: 38675, Start Num: 28
Candidate Starts for MsUbiquitous_60:
(Start: 28 @38349 has 28 MA's), (52, 38469), (54, 38484), (56, 38490), (65, 38556), (83, 38667),

Gene: OneinaGillian_92 Start: 55864, Stop: 55589, Start Num: 38
Candidate Starts for OneinaGillian_92:
(25, 55909), (26, 55906), (Start: 38 @55864 has 11 MA's), (51, 55786), (60, 55735), (70, 55678), (79, 55618),

Gene: Pepe25_91 Start: 55206, Stop: 54931, Start Num: 38
Candidate Starts for Pepe25_91:
(Start: 38 @55206 has 11 MA's), (48, 55146), (51, 55128), (60, 55077), (70, 55020), (79, 54960),

Gene: Pharky_17 Start: 11507, Stop: 11223, Start Num: 35
Candidate Starts for Pharky_17:
(Start: 35 @11507 has 15 MA's), (59, 11384), (65, 11327), (69, 11309), (76, 11282),

Gene: Phedro_17 Start: 11507, Stop: 11223, Start Num: 35
Candidate Starts for Phedro_17:
(Start: 35 @11507 has 15 MA's), (59, 11384), (65, 11327), (69, 11309), (76, 11282),

Gene: Phractured_17 Start: 11507, Stop: 11223, Start Num: 35
Candidate Starts for Phractured_17:
(Start: 35 @11507 has 15 MA's), (59, 11384), (65, 11327), (69, 11309), (76, 11282),

Gene: PhriedRice_17 Start: 11517, Stop: 11224, Start Num: 33
Candidate Starts for PhriedRice_17:
(8, 11718), (Start: 33 @11517 has 1 MA's), (69, 11310), (75, 11286),

Gene: PorkBelly_42 Start: 30342, Stop: 30058, Start Num: 34
Candidate Starts for PorkBelly_42:
(34, 30342), (41, 30309), (45, 30297), (63, 30174), (65, 30165), (79, 30090),

Gene: QMacho_62 Start: 38995, Stop: 39321, Start Num: 28
Candidate Starts for QMacho_62:
(Start: 28 @38995 has 28 MA's), (52, 39115), (54, 39130), (56, 39136), (65, 39202), (83, 39313),

Gene: Quenya_59 Start: 38216, Stop: 38551, Start Num: 28
Candidate Starts for Quenya_59:
(Start: 28 @38216 has 28 MA's), (47, 38312), (52, 38333), (54, 38348), (55, 38351), (61, 38390), (82, 38537), (83, 38540),

Gene: Rasputia_139 Start: 86480, Stop: 86809, Start Num: 27
Candidate Starts for Rasputia_139:
(Start: 27 @86480 has 4 MA's), (59, 86633), (74, 86741), (78, 86765), (79, 86777),

Gene: RicoCaldo_17 Start: 11539, Stop: 11255, Start Num: 35
Candidate Starts for RicoCaldo_17:
(Start: 35 @11539 has 15 MA's), (59, 11416), (65, 11359), (69, 11341), (76, 11314),

Gene: RobinRose_97 Start: 57031, Stop: 56753, Start Num: 38
Candidate Starts for RobinRose_97:
(25, 57076), (26, 57073), (Start: 38 @57031 has 11 MA's), (51, 56950), (60, 56899), (70, 56842), (79, 56782),

Gene: Rollins_57 Start: 35573, Stop: 35890, Start Num: 30
Candidate Starts for Rollins_57:
(1, 35003), (Start: 30 @35573 has 11 MA's), (52, 35693), (61, 35750), (73, 35822),

Gene: Romm_97 Start: 57028, Stop: 56750, Start Num: 38
Candidate Starts for Romm_97:
(25, 57073), (26, 57070), (Start: 38 @57028 has 11 MA's), (51, 56947), (60, 56896), (70, 56839), (79, 56779),

Gene: Rona_55 Start: 37759, Stop: 38073, Start Num: 28
Candidate Starts for Rona_55:
(Start: 28 @37759 has 28 MA's), (56, 37897), (73, 38002), (79, 38041),

Gene: SadLad_89 Start: 56322, Stop: 55999, Start Num: 29
Candidate Starts for SadLad_89:
(9, 56493), (10, 56490), (12, 56478), (15, 56394), (18, 56376), (21, 56355), (Start: 29 @56322 has 2 MA's), (44, 56259), (48, 56217), (51, 56199), (60, 56145), (79, 56028), (80, 56022),

Gene: Sharkboy_56 Start: 37858, Stop: 38187, Start Num: 28
Candidate Starts for Sharkboy_56:
(Start: 28 @37858 has 28 MA's), (52, 37975), (54, 37990), (56, 37996), (73, 38116), (75, 38122), (79, 38155),

Gene: ShyRosie_16 Start: 11287, Stop: 10994, Start Num: 32
Candidate Starts for ShyRosie_16:
(Start: 32 @11287 has 7 MA's), (69, 11080), (75, 11056), (79, 11023),

Gene: Skylord_57 Start: 35514, Stop: 35831, Start Num: 30
Candidate Starts for Skylord_57:
(1, 34944), (Start: 30 @35514 has 11 MA's), (52, 35634), (61, 35691), (73, 35763),

Gene: Softsoap_62 Start: 39051, Stop: 39383, Start Num: 28
Candidate Starts for Softsoap_62:
(Start: 28 @39051 has 28 MA's), (46, 39138), (53, 39177), (56, 39189), (83, 39375),

Gene: SoilSleuth_16 Start: 11287, Stop: 10994, Start Num: 32
Candidate Starts for SoilSleuth_16:
(Start: 32 @11287 has 7 MA's), (69, 11080), (75, 11056), (79, 11023),

Gene: Spiderpig_94 Start: 56473, Stop: 56198, Start Num: 38
Candidate Starts for Spiderpig_94:
(Start: 38 @56473 has 11 MA's), (48, 56413), (51, 56395), (60, 56344), (70, 56287), (79, 56227),

Gene: StagePhright_17 Start: 11507, Stop: 11223, Start Num: 35

Candidate Starts for StagePhright_17:
(Start: 35 @11507 has 15 MA's), (59, 11384), (65, 11327), (69, 11309), (76, 11282),

Gene: Sweetums_40 Start: 24663, Stop: 24373, Start Num: 31
Candidate Starts for Sweetums_40:
(Start: 31 @24663 has 6 MA's), (39, 24630), (43, 24612), (52, 24558), (64, 24480), (66, 24471), (73, 24438),

Gene: Tempo_96 Start: 57068, Stop: 56790, Start Num: 38
Candidate Starts for Tempo_96:
(25, 57113), (26, 57110), (Start: 38 @57068 has 11 MA's), (51, 56987), (60, 56936), (70, 56879), (79, 56819),

Gene: Teng_39 Start: 24578, Stop: 24288, Start Num: 31
Candidate Starts for Teng_39:
(Start: 31 @24578 has 6 MA's), (39, 24545), (43, 24527), (52, 24473), (64, 24395), (66, 24386), (73, 24353),

Gene: ThirteenKH_16 Start: 11284, Stop: 11000, Start Num: 35
Candidate Starts for ThirteenKH_16:
(Start: 35 @11284 has 15 MA's), (59, 11161), (65, 11104), (69, 11086), (76, 11059),

Gene: TrippleS_16 Start: 11291, Stop: 11007, Start Num: 35
Candidate Starts for TrippleS_16:
(Start: 35 @11291 has 15 MA's), (59, 11168), (65, 11111), (69, 11093), (76, 11066),

Gene: Triscuit_88 Start: 53720, Stop: 53340, Start Num: 17
Candidate Starts for Triscuit_88:
(Start: 17 @53720 has 2 MA's), (20, 53711), (22, 53690), (36, 53636), (60, 53486), (67, 53438), (81, 53357),

Gene: Truong_16 Start: 11287, Stop: 10994, Start Num: 32
Candidate Starts for Truong_16:
(Start: 32 @11287 has 7 MA's), (69, 11080), (75, 11056), (79, 11023),

Gene: Vitas_57 Start: 35546, Stop: 35863, Start Num: 30
Candidate Starts for Vitas_57:
(1, 34976), (Start: 30 @35546 has 11 MA's), (52, 35666), (61, 35723), (73, 35795),

Gene: Waterlily_16 Start: 11287, Stop: 10994, Start Num: 32
Candidate Starts for Waterlily_16:
(Start: 32 @11287 has 7 MA's), (69, 11080), (75, 11056), (79, 11023),

Gene: Wilca_93 Start: 56287, Stop: 56012, Start Num: 38
Candidate Starts for Wilca_93:
(Start: 38 @56287 has 11 MA's), (48, 56227), (51, 56209), (60, 56158), (70, 56101), (79, 56041),

Gene: Wrackline_51 Start: 28147, Stop: 27845, Start Num: 30
Candidate Starts for Wrackline_51:
(25, 28162), (Start: 30 @28147 has 11 MA's), (47, 28057), (61, 27979), (71, 27928), (76, 27901),

Gene: Yafa_16 Start: 11307, Stop: 11023, Start Num: 35
Candidate Starts for Yafa_16:

(Start: 35 @11307 has 15 MA's), (59, 11184), (65, 11127), (69, 11109), (76, 11082),