Pham 347302


1: Orange_68 + 21
2: Saskia_71
3: Jabith_70
4: Elle_75
5: ForesterFrank_68
6: Serenity_74
7: AN9_74 + 1
8: Journey13_62
9: DBQu4n_74 + 9
10: Dignity_72 + 8
11: Crucio_71 + 8
12: Fameo_70
13: GaugeLDP_66
14: Quokka_72 + 3
15: L5_68 + 1
16: Ph8s_74 + 1
17: QueenB2_69
18: VC3_73 + 1
19: MissWhite_70
20: BabyBack_67
21: JoshKayV_71
22: ArcherNM_64
23: EZMoney23_68
24: Jsquared_74
25: Echild_71 + 1
26: Heffalump_69
27: AbbyPaige_72
28: ChipMunk_72 + 2
29: Herbertwm_67
30: Iwokeuplikedis_71
31: GtownJaz_72 + 5
32: Stagni_69 + 4
33: Benedict_69 + 18
34: PetterN_73 + 8
35: Micasa_65 + 4
36: Garak_74 + 17
37: Hexamo_72 + 3
38: VohminGhazi_71 + 9
39: Gruunaga_72 + 1
40: Timshel_68
41: Caitlin_79 + 7
42: Roary_82
43: Groundhog_78

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 347302 Report

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

Pham number 347302 has 175 members, 9 are drafts.

Phages represented in each track:
• Track 1 : Orange_68, Timothy_69, Munch_69, Gilberta_70, Et2Brutus_68, Mabel_69, MaCh_69, Flaverint_70, Sham4_69, Bud_68, Bowtie_70, Salz_68, Hutc2_68, Fibonacci_69, Mulciber_68, Bachome_71, Lucivia_70, Petersenfast_69, Snape_69, Ebony_69, Wolpertinger_67, Aneem_70
• Track 2 : Saskia_71
• Track 3 : Jabith_70
• Track 4 : Elle_75
• Track 5 : ForesterFrank_68
• Track 6 : Serenity_74
• Track 7 : AN9_74, ANI8_74
• Track 8 : Journey13_62
• Track 9 : DBQu4n_74, D29_68, Pomar16_73, D32_73, Travvers_73, Duplo_74, StarStuff_74, Naji_74, Kerberos_74, Tomathan_74
• Track 10 : Dignity_72, Agape74_72, Jerm_72, Leviathan_72, Smeagan_73, LilTurb_71, Turbido_71, Whabigail7_71, Bugsy_72
• Track 11 : Crucio_71, FiringLine_71, Retro23_71, Power_70, SnapTap_70, SemperFi_71, SweetiePie_70, QueenBeesly_71, Georgie2_72
• Track 12 : Fameo_70
• Track 13 : GaugeLDP_66
• Track 14 : Quokka_72, Bradman_73, TipsytheTRex_70, MajorMajor_72
• Track 15 : L5_68, Koduck_73
• Track 16 : Ph8s_74, Adzzy_74
• Track 17 : QueenB2_69
• Track 18 : VC3_73, C3_67
• Track 19 : MissWhite_70
• Track 20 : BabyBack_67
• Track 21 : JoshKayV_71
• Track 22 : ArcherNM_64
• Track 23 : EZMoney23_68
• Track 24 : Jsquared_74
• Track 25 : Echild_71, Benvolio_68
• Track 26 : Heffalump_69
• Track 27 : AbbyPaige_72
• Track 28 : ChipMunk_72, KingCyrus_71, EvilGenius_71
• Track 29 : Herbertwm_67
• Track 30 : Iwokeuplikedis_71

• Track 31 : GtownJaz_72, Grif_70, Snickers_72, Croquant_69, Montavir_67, LarryKay_72
• Track 32 : Stagni_69, HashRod_73, Bxz2_67, Phoebe_73, Bigflo_70
• Track 33 : Benedict_69, Aragog_65, Jabiru_67, Phlorence_64, Tarynearal_64, ElTiger69_71, ForGetIt_66, Tiger_65, Airmid_68, Jovo_66, PickleBack_66, Naca_68, Florence4_64, UnionJack_69, Discoknowium_63, Conspiracy_66, AgentM_65, Florence1_62, Lev2_66
• Track 34 : PetterN_73, HuhtaEnerson15_63, Swirley_65, Prinashe11_64, George_62, Scorpia_69, LittleCherry_64, Milcery_65, Chadwick_69
• Track 35 : Micasa_65, Bonamassa_65, Twigg_64, MarysWell_65, Dublin_65
• Track 36 : Garak_74, Indra_76, Rifter_73, Temprado_74, Zaka_73, Lilbunny_72, Jeffabunny_73, ToneTone_70, Hammer_73, Yokurt_72, BennyP_73, WunderPhul_73, Zulu_74, Tucker_73, Helmet_75, BlessJoy_73, Wiks_72, Blue7_74
• Track 37 : Hexamo_72, Koko_74, Artemis2UCLA_72, CloudWang3_73
• Track 38 : VohminGhazi_71, Kazan_72, SmellyB_71, Hoot_66, Candra_72, GreedyLawyer_68, EricB_70, Chartreuse_70, Kipper29_71, DaVinci_69
• Track 39 : Gruunaga_72, Roksolana_73
• Track 40 : Timshel_68
• Track 41 : Caitlin_79, Expelliarmus_77, Stephig9_79, Astro_80, Saintus_76, Dixon_79, Danforth_81, Smeadley_80
• Track 42 : Roary_82
• Track 43 : Groundhog_78

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

The start number called the most often in the published annotations is 16, it was called in 47 of the 166 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aneem_70, Artemis2UCLA_72, Bachome_71, BennyP_73, BlessJoy_73, Blue7_74, Bowtie_70, Bud_68, CloudWang3_73, Ebony_69, Et2Brutus_68, Fibonacci_69, Flaverint_70, Garak_74, Gilberta_70, Gruunaga_72, Hammer_73, Helmet_75, Hexamo_72, Hutc2_68, Indra_76, Jabith_70, Jeffabunny_73, Koko_74, Lilbunny_72, Lucivia_70, MaCh_69, Mabel_69, Mulciber_68, Munch_69, Orange_68, Petersenfast_69, Rifter_73, Roksolana_73, Salz_68, Saskia_71, Sham4_69, Snape_69, Temprado_74, Timothy_69, ToneTone_70, Tucker_73, Wiks_72, Wolpertinger_67, WunderPhul_73, Yokurt_72, Zaka_73, Zulu_74,

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

Genes that do not have the "Most Annotated" start:
• AN9_74, ANI8_74, AbbyPaige_72, Adzzy_74, Agape74_72, AgentM_65, Airmid_68, Aragog_65, ArcherNM_64, Astro_80, BabyBack_67, Benedict_69, Benvolio_68, Bigflo_70, Bonamassa_65, Bradman_73, Bugsy_72, Bxz2_67, C3_67, Caitlin_79, Candra_72, Chadwick_69, Chartreuse_70, ChipMunk_72, Conspiracy_66, Croquant_69, Crucio_71, D29_68, D32_73, DBQu4n_74, DaVinci_69, Danforth_81, Dignity_72, Discoknowium_63, Dixon_79, Dublin_65, Duplo_74, EZMoney23_68, Echild_71, ElTiger69_71, Elle_75, EricB_70, EvilGenius_71, Expelliarmus_77, Fameo_70, FiringLine_71, Florence1_62, Florence4_64, ForGetIt_66,

ForesterFrank_68, GaugeLDP_66, George_62, Georgie2_72, GreedyLawyer_68, Grif_70, Groundhog_78, GtownJaz_72, HashRod_73, Heffalump_69, Herbertwm_67, Hoot_66, HuhtaEnerson15_63, Iwokeuplikedis_71, Jabiru_67, Jerm_72, JoshKayV_71, Journey13_62, Jovo_66, Jsquared_74, Kazan_72, Kerberos_74, KingCyrus_71, Kipper29_71, Koduck_73, L5_68, LarryKay_72, Lev2_66, Leviathan_72, LilTurb_71, LittleCherry_64, MajorMajor_72, MarysWell_65, Micasa_65, Milcery_65, MissWhite_70, Montavir_67, Naca_68, Naji_74, PetterN_73, Ph8s_74, Phlorence_64, Phoebe_73, PickleBack_66, Pomar16_73, Power_70, Prinashe11_64, QueenB2_69, QueenBeesly_71, Quokka_72, Retro23_71, Roary_82, Saintus_76, Scorpia_69, SemperFi_71, Serenity_74, Smeadley_80, Smeagan_73, SmellyB_71, SnapTap_70, Snickers_72, Stagni_69, StarStuff_74, Stephig9_79, SweetiePie_70, Swirley_65, Tarynearal_64, Tiger_65, Timshel_68, TipsytheTRex_70, Tomathan_74, Travvers_73, Turbido_71, Twigg_64, UnionJack_69, VC3_73, VohminGhazi_71, Whabigail7_71,

Summary by start number:

Start 12:
• Found in 29 of 175 (16.6%) of genes in pham
• Manual Annotations of this start: 2 of 166
• Called 6.9% of time when present
• Phage (with cluster) where this start called: Herbertwm_67 (A2), Serenity_74 (A2),

Start 13:
• Found in 26 of 175 (14.9%) of genes in pham
• Manual Annotations of this start: 19 of 166
• Called 76.9% of time when present
• Phage (with cluster) where this start called: AN9_74 (A2), ANI8_74 (A2), Adzzy_74 (A2), BabyBack_67 (A2), C3_67 (A2), D29_68 (A2), D32_73 (A2), DBQu4n_74 (A2), Duplo_74 (A2), GaugeLDP_66 (A2), Kerberos_74 (A2), MissWhite_70 (A2), Naji_74 (A2), Ph8s_74 (A2), Pomar16_73 (A2), StarStuff_74 (A2), Timshel_68 (A7), Tomathan_74 (A2), Travvers_73 (A2), VC3_73 (A2),

Start 14:
• Found in 5 of 175 (2.9%) of genes in pham
• Manual Annotations of this start: 1 of 166
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Elle_75 (A15),

Start 16:
• Found in 48 of 175 (27.4%) of genes in pham
• Manual Annotations of this start: 47 of 166
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aneem_70 (A11), Artemis2UCLA_72 (A6), Bachome_71 (A11), BennyP_73 (A6), BlessJoy_73 (A6), Blue7_74 (A6), Bowtie_70 (A11), Bud_68 (A11), CloudWang3_73 (A6), Ebony_69 (A11), Et2Brutus_68 (A11), Fibonacci_69 (A11), Flaverint_70 (A11), Garak_74 (A6), Gilberta_70 (A11), Gruunaga_72 (A6), Hammer_73 (A6), Helmet_75 (A6), Hexamo_72 (A6), Hutc2_68 (A11), Indra_76 (A6), Jabith_70 (A11), Jeffabunny_73 (A6), Koko_74 (A6), Lilbunny_72 (A6), Lucivia_70 (A11), MaCh_69 (A11), Mabel_69 (A11), Mulciber_68 (A11), Munch_69 (A11), Orange_68 (A11), Petersenfast_69 (A11), Rifter_73 (A6), Roksolana_73 (A6), Salz_68 (A11), Saskia_71 (A11), Sham4_69 (A11), Snape_69 (A11), Temprado_74 (A6), Timothy_69 (A11),

ToneTone_70 (A6), Tucker_73 (A6), Wiks_72 (A6), Wolpertinger_67 (A11), WunderPhul_73 (A6), Yokurt_72 (A6), Zaka_73 (A6), Zulu_74 (A6),

Start 17:
• Found in 11 of 175 (6.3%) of genes in pham
• Manual Annotations of this start: 9 of 166
• Called 81.8% of time when present
• Phage (with cluster) where this start called: Astro_80 (A8), Caitlin_79 (A8), Danforth_81 (A8), Dixon_79 (A8), Expelliarmus_77 (A8), Roary_82 (A8), Saintus_76 (A8), Smeadley_80 (A8), Stephig9_79 (A8),

Start 18:
• Found in 68 of 175 (38.9%) of genes in pham
• Manual Annotations of this start: 31 of 166
• Called 48.5% of time when present
• Phage (with cluster) where this start called: AgentM_65 (A5), Airmid_68 (A5), Aragog_65 (A5), Benedict_69 (A5), Bonamassa_65 (A5), Chadwick_69 (A5), Conspiracy_66 (A5), Discoknowium_63 (A5), Dublin_65 (A5), ElTiger69_71 (A5), Florence1_62 (A5), Florence4_64 (A5), ForGetIt_66 (A5), George_62 (A5), HuhtaEnerson15_63 (A5), Jabiru_67 (A5), Jovo_66 (A5), Lev2_66 (A5), LittleCherry_64 (A5), MarysWell_65 (A5), Micasa_65 (A5), Milcery_65 (A5), Naca_68 (A5), PetterN_73 (A5), Phlorence_64 (A5), PickleBack_66 (A5), Prinashe11_64 (A5), Scorpia_69 (A5), Swirley_65 (A5), Tarynearal_64 (A5), Tiger_65 (A5), Twigg_64 (A5), UnionJack_69 (A5),

Start 19:
• Found in 40 of 175 (22.9%) of genes in pham
• Manual Annotations of this start: 34 of 166
• Called 92.5% of time when present
• Phage (with cluster) where this start called: AbbyPaige_72 (A2), Agape74_72 (A2), ArcherNM_64 (A2), Benvolio_68 (A2), Bradman_73 (A2), Bugsy_72 (A2), ChipMunk_72 (A2), Crucio_71 (A2), Dignity_72 (A2), Echild_71 (A2), EvilGenius_71 (A2), Fameo_70 (A2), FiringLine_71 (A2), ForesterFrank_68 (A2), Georgie2_72 (A2), Heffalump_69 (A2), Jerm_72 (A2), JoshKayV_71 (A2), Jsquared_74 (A2), KingCyrus_71 (A2), Koduck_73 (A2), L5_68 (A2), Leviathan_72 (A2), LilTurb_71 (A2), MajorMajor_72 (A2), Power_70 (A2), QueenB2_69 (A2), QueenBeesly_71 (A2), Quokka_72 (A2), Retro23_71 (A2), SemperFi_71 (A2), Smeagan_73 (A2), SnapTap_70 (A2), SweetiePie_70 (A2), TipsytheTRex_70 (A2), Turbido_71 (A2), Whabigail7_71 (A2),

Start 20:
• Found in 14 of 175 (8.0%) of genes in pham
• Manual Annotations of this start: 12 of 166
• Called 85.7% of time when present
• Phage (with cluster) where this start called: Candra_72 (A6), Chartreuse_70 (A6), DaVinci_69 (A6), EZMoney23_68 (A2), EricB_70 (A6), GreedyLawyer_68 (A6), Hoot_66 (A6), Journey13_62 (A2), Kazan_72 (A6), Kipper29_71 (A6), SmellyB_71 (A6), VohminGhazi_71 (A6),

Start 21:
• Found in 11 of 175 (6.3%) of genes in pham
• Manual Annotations of this start: 9 of 166
• Called 100.0% of time when present

• Phage (with cluster) where this start called: Bigflo_70 (A3), Bxz2_67 (A3), Croquant_69 (A3), Grif_70 (A3), GtownJaz_72 (A3), HashRod_73 (A3), LarryKay_72 (A3), Montavir_67 (A3), Phoebe_73 (A3), Snickers_72 (A3), Stagni_69 (A3),

Start 22:
• Found in 16 of 175 (9.1%) of genes in pham
• Manual Annotations of this start: 2 of 166
• Called 12.5% of time when present
• Phage (with cluster) where this start called: Groundhog_78 (A8), Iwokeuplikedis_71 (A2),

Summary by clusters:

There are 8 clusters represented in this pham: A15, A11, A3, A2, A5, A7, A6, A8,

Info for manual annotations of cluster A11:
•Start number 16 was manually annotated 24 times for cluster A11.

Info for manual annotations of cluster A15:
•Start number 14 was manually annotated 1 time for cluster A15.

Info for manual annotations of cluster A2:
•Start number 12 was manually annotated 2 times for cluster A2.
•Start number 13 was manually annotated 18 times for cluster A2.
•Start number 19 was manually annotated 34 times for cluster A2.
•Start number 20 was manually annotated 2 times for cluster A2.
•Start number 22 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A3:
•Start number 21 was manually annotated 9 times for cluster A3.

Info for manual annotations of cluster A5:
•Start number 18 was manually annotated 31 times for cluster A5.

Info for manual annotations of cluster A6:
•Start number 16 was manually annotated 23 times for cluster A6.
•Start number 20 was manually annotated 10 times for cluster A6.

Info for manual annotations of cluster A7:
•Start number 13 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster A8:
•Start number 17 was manually annotated 9 times for cluster A8.
•Start number 22 was manually annotated 1 time for cluster A8.

Gene Information:

Gene: AN9_74 Start: 43176, Stop: 42916, Start Num: 13
Candidate Starts for AN9_74:
(Start: 13 @43176 has 19 MA's), (28, 43071), (32, 43038), (38, 43005), (40, 42984), (41, 42978), (45, 42930), (46, 42927),

Gene: ANI8_74 Start: 43176, Stop: 42916, Start Num: 13
Candidate Starts for ANI8_74:
(Start: 13 @43176 has 19 MA's), (28, 43071), (32, 43038), (38, 43005), (40, 42984), (41, 42978), (45, 42930), (46, 42927),

Gene: AbbyPaige_72 Start: 43323, Stop: 43084, Start Num: 19
Candidate Starts for AbbyPaige_72:
(5, 43485), (Start: 12 @43362 has 2 MA's), (Start: 19 @43323 has 34 MA's), (28, 43248), (32, 43215), (38, 43182), (39, 43173), (40, 43161),

Gene: Adzzy_74 Start: 41977, Stop: 41702, Start Num: 13
Candidate Starts for Adzzy_74:
(Start: 13 @41977 has 19 MA's), (Start: 14 @41968 has 1 MA's), (Start: 22 @41908 has 2 MA's), (26, 41869), (32, 41827), (33, 41818), (38, 41794), (40, 41773),

Gene: Agape74_72 Start: 43317, Stop: 43078, Start Num: 19
Candidate Starts for Agape74_72:
(Start: 12 @43356 has 2 MA's), (Start: 19 @43317 has 34 MA's), (28, 43242), (32, 43209), (38, 43176), (39, 43167), (40, 43155),

Gene: AgentM_65 Start: 41621, Stop: 41370, Start Num: 18
Candidate Starts for AgentM_65:
(Start: 18 @41621 has 31 MA's), (28, 41528), (29, 41513), (39, 41450), (43, 41405), (45, 41384), (47, 41378),

Gene: Airmid_68 Start: 42454, Stop: 42200, Start Num: 18
Candidate Starts for Airmid_68:
(Start: 18 @42454 has 31 MA's), (28, 42361), (29, 42346), (39, 42283), (43, 42238), (45, 42217), (47, 42211),

Gene: Aneem_70 Start: 42035, Stop: 41769, Start Num: 16
Candidate Starts for Aneem_70:
(Start: 16 @42035 has 47 MA's), (27, 41942), (32, 41903), (38, 41870), (39, 41861), (40, 41849), (43, 41816),

Gene: Aragog_65 Start: 41641, Stop: 41390, Start Num: 18
Candidate Starts for Aragog_65:
(Start: 18 @41641 has 31 MA's), (28, 41548), (29, 41533), (39, 41470), (43, 41425), (45, 41404), (47, 41398),

Gene: ArcherNM_64 Start: 42544, Stop: 42302, Start Num: 19
Candidate Starts for ArcherNM_64:
(7, 42646), (Start: 12 @42583 has 2 MA's), (Start: 19 @42544 has 34 MA's), (26, 42475), (28, 42466), (32, 42433), (38, 42400), (39, 42391), (40, 42379),

Gene: Artemis2UCLA_72 Start: 41385, Stop: 41128, Start Num: 16
Candidate Starts for Artemis2UCLA_72:
(Start: 16 @41385 has 47 MA's), (Start: 18 @41376 has 31 MA's), (26, 41301), (28, 41292), (32, 41259), (37, 41229), (39, 41217), (49, 41136),

Gene: Astro_80 Start: 44089, Stop: 43805, Start Num: 17
Candidate Starts for Astro_80:

(Start: 17 @44089 has 9 MA's), (Start: 22 @44047 has 2 MA's), (27, 44005), (28, 43999), (42, 43891),

Gene: BabyBack_67 Start: 43084, Stop: 42833, Start Num: 13
Candidate Starts for BabyBack_67:
(Start: 13 @43084 has 19 MA's), (Start: 14 @43075 has 1 MA's), (24, 43033), (28, 42997), (32, 42964), (38, 42931), (39, 42922), (40, 42910),

Gene: Bachome_71 Start: 42031, Stop: 41765, Start Num: 16
Candidate Starts for Bachome_71:
(Start: 16 @42031 has 47 MA's), (27, 41938), (32, 41899), (38, 41866), (39, 41857), (40, 41845), (43, 41812),

Gene: Benedict_69 Start: 42186, Stop: 41932, Start Num: 18
Candidate Starts for Benedict_69:
(Start: 18 @42186 has 31 MA's), (28, 42093), (29, 42078), (39, 42015), (43, 41970), (45, 41949), (47, 41943),

Gene: BennyP_73 Start: 41551, Stop: 41294, Start Num: 16
Candidate Starts for BennyP_73:
(Start: 16 @41551 has 47 MA's), (Start: 18 @41542 has 31 MA's), (26, 41467), (28, 41458), (32, 41425), (37, 41395), (39, 41383),

Gene: Benvolio_68 Start: 42707, Stop: 42468, Start Num: 19
Candidate Starts for Benvolio_68:
(Start: 12 @42746 has 2 MA's), (Start: 19 @42707 has 34 MA's), (26, 42641), (28, 42632), (32, 42599), (38, 42566), (39, 42557), (40, 42545),

Gene: Bigflo_70 Start: 42387, Stop: 42133, Start Num: 21
Candidate Starts for Bigflo_70:
(Start: 13 @42441 has 19 MA's), (15, 42423), (Start: 18 @42408 has 31 MA's), (Start: 21 @42387 has 9 MA's), (23, 42354), (26, 42303), (28, 42294), (30, 42267), (32, 42261), (38, 42228),

Gene: BlessJoy_73 Start: 41907, Stop: 41650, Start Num: 16
Candidate Starts for BlessJoy_73:
(Start: 16 @41907 has 47 MA's), (Start: 18 @41898 has 31 MA's), (26, 41823), (28, 41814), (32, 41781), (37, 41751), (39, 41739),

Gene: Blue7_74 Start: 41605, Stop: 41348, Start Num: 16
Candidate Starts for Blue7_74:
(Start: 16 @41605 has 47 MA's), (Start: 18 @41596 has 31 MA's), (26, 41521), (28, 41512), (32, 41479), (37, 41449), (39, 41437),

Gene: Bonamassa_65 Start: 41816, Stop: 41565, Start Num: 18
Candidate Starts for Bonamassa_65:
(Start: 18 @41816 has 31 MA's), (26, 41732), (28, 41723), (29, 41708), (39, 41645), (43, 41600), (45, 41579),

Gene: Bowtie_70 Start: 42042, Stop: 41776, Start Num: 16
Candidate Starts for Bowtie_70:
(Start: 16 @42042 has 47 MA's), (27, 41949), (32, 41910), (38, 41877), (39, 41868), (40, 41856), (43, 41823),

Gene: Bradman_73 Start: 42401, Stop: 42162, Start Num: 19

Candidate Starts for Bradman_73:
(Start: 19 @42401 has 34 MA's), (25, 42359), (28, 42326), (30, 42299), (32, 42293), (38, 42260), (39, 42251), (40, 42239), (44, 42188), (49, 42170),

Gene: Bud_68 Start: 41589, Stop: 41323, Start Num: 16
Candidate Starts for Bud_68:
(Start: 16 @41589 has 47 MA's), (27, 41496), (32, 41457), (38, 41424), (39, 41415), (40, 41403), (43, 41370),

Gene: Bugsy_72 Start: 43370, Stop: 43131, Start Num: 19
Candidate Starts for Bugsy_72:
(Start: 12 @43409 has 2 MA's), (Start: 19 @43370 has 34 MA's), (28, 43295), (32, 43262), (38, 43229), (39, 43220), (40, 43208),

Gene: Bxz2_67 Start: 42422, Stop: 42168, Start Num: 21
Candidate Starts for Bxz2_67:
(Start: 13 @42476 has 19 MA's), (15, 42458), (Start: 18 @42443 has 31 MA's), (Start: 21 @42422 has 9 MA's), (23, 42389), (26, 42338), (28, 42329), (30, 42302), (32, 42296), (38, 42263),

Gene: C3_67 Start: 43176, Stop: 42916, Start Num: 13
Candidate Starts for C3_67:
(Start: 13 @43176 has 19 MA's), (28, 43071), (32, 43038), (38, 43005), (40, 42984), (45, 42930), (46, 42927),

Gene: Caitlin_79 Start: 43781, Stop: 43497, Start Num: 17
Candidate Starts for Caitlin_79:
(Start: 17 @43781 has 9 MA's), (Start: 22 @43739 has 2 MA's), (27, 43697), (28, 43691), (42, 43583),

Gene: Candra_72 Start: 41351, Stop: 41112, Start Num: 20
Candidate Starts for Candra_72:
(Start: 20 @41351 has 12 MA's), (28, 41276), (32, 41243), (38, 41210), (39, 41201),

Gene: Chadwick_69 Start: 41930, Stop: 41679, Start Num: 18
Candidate Starts for Chadwick_69:
(Start: 18 @41930 has 31 MA's), (28, 41837), (29, 41822), (39, 41759), (43, 41714), (45, 41693),

Gene: Chartreuse_70 Start: 40662, Stop: 40423, Start Num: 20
Candidate Starts for Chartreuse_70:
(Start: 20 @40662 has 12 MA's), (28, 40587), (32, 40554), (38, 40521), (39, 40512),

Gene: ChipMunk_72 Start: 44601, Stop: 44362, Start Num: 19
Candidate Starts for ChipMunk_72:
(Start: 19 @44601 has 34 MA's), (28, 44526), (32, 44493), (38, 44460), (39, 44451), (40, 44439),

Gene: CloudWang3_73 Start: 41897, Stop: 41640, Start Num: 16
Candidate Starts for CloudWang3_73:
(Start: 16 @41897 has 47 MA's), (Start: 18 @41888 has 31 MA's), (26, 41813), (28, 41804), (32, 41771), (37, 41741), (39, 41729), (49, 41648),

Gene: Conspiracy_66 Start: 41863, Stop: 41612, Start Num: 18
Candidate Starts for Conspiracy_66:
(Start: 18 @41863 has 31 MA's), (28, 41770), (29, 41755), (39, 41692), (43, 41647), (45, 41626), (47, 41620),

Gene: Croquant_69 Start: 42386, Stop: 42132, Start Num: 21
Candidate Starts for Croquant_69:
(15, 42422), (Start: 18 @42407 has 31 MA's), (Start: 21 @42386 has 9 MA's), (23, 42353), (26, 42302), (28, 42293), (30, 42266), (32, 42260), (38, 42227),

Gene: Crucio_71 Start: 43367, Stop: 43128, Start Num: 19
Candidate Starts for Crucio_71:
(Start: 12 @43406 has 2 MA's), (Start: 19 @43367 has 34 MA's), (28, 43292), (32, 43259), (38, 43226), (39, 43217), (40, 43205), (46, 43148),

Gene: D29_68 Start: 43721, Stop: 43488, Start Num: 13
Candidate Starts for D29_68:
(Start: 13 @43721 has 19 MA's), (28, 43643), (32, 43610), (38, 43577), (40, 43556), (45, 43502),

Gene: D32_73 Start: 43721, Stop: 43488, Start Num: 13
Candidate Starts for D32_73:
(Start: 13 @43721 has 19 MA's), (28, 43643), (32, 43610), (38, 43577), (40, 43556), (45, 43502),

Gene: DBQu4n_74 Start: 43701, Stop: 43468, Start Num: 13
Candidate Starts for DBQu4n_74:
(Start: 13 @43701 has 19 MA's), (28, 43623), (32, 43590), (38, 43557), (40, 43536), (45, 43482),

Gene: DaVinci_69 Start: 40716, Stop: 40477, Start Num: 20
Candidate Starts for DaVinci_69:
(Start: 20 @40716 has 12 MA's), (28, 40641), (32, 40608), (38, 40575), (39, 40566),

Gene: Danforth_81 Start: 44166, Stop: 43882, Start Num: 17
Candidate Starts for Danforth_81:
(Start: 17 @44166 has 9 MA's), (Start: 22 @44124 has 2 MA's), (27, 44082), (28, 44076), (42, 43968),

Gene: Dignity_72 Start: 43408, Stop: 43169, Start Num: 19
Candidate Starts for Dignity_72:
(Start: 12 @43447 has 2 MA's), (Start: 19 @43408 has 34 MA's), (28, 43333), (32, 43300), (38, 43267), (39, 43258), (40, 43246),

Gene: Discoknowium_63 Start: 41380, Stop: 41129, Start Num: 18
Candidate Starts for Discoknowium_63:
(Start: 18 @41380 has 31 MA's), (28, 41287), (29, 41272), (39, 41209), (43, 41164), (45, 41143), (47, 41137),

Gene: Dixon_79 Start: 43648, Stop: 43364, Start Num: 17
Candidate Starts for Dixon_79:
(Start: 17 @43648 has 9 MA's), (Start: 22 @43606 has 2 MA's), (27, 43564), (28, 43558), (42, 43450),

Gene: Dublin_65 Start: 41773, Stop: 41522, Start Num: 18
Candidate Starts for Dublin_65:
(Start: 18 @41773 has 31 MA's), (26, 41689), (28, 41680), (29, 41665), (39, 41602), (43, 41557), (45, 41536),

Gene: Duplo_74 Start: 43758, Stop: 43525, Start Num: 13
Candidate Starts for Duplo_74:
(Start: 13 @43758 has 19 MA's), (28, 43680), (32, 43647), (38, 43614), (40, 43593), (45, 43539),

Gene: EZMoney23_68 Start: 42791, Stop: 42552, Start Num: 20
Candidate Starts for EZMoney23_68:
(Start: 12 @42833 has 2 MA's), (Start: 19 @42794 has 34 MA's), (Start: 20 @42791 has 12 MA's), (25, 42749), (26, 42725), (28, 42716), (32, 42683), (38, 42650), (39, 42641), (40, 42629),

Gene: Ebony_69 Start: 41606, Stop: 41340, Start Num: 16
Candidate Starts for Ebony_69:
(Start: 16 @41606 has 47 MA's), (27, 41513), (32, 41474), (38, 41441), (39, 41432), (40, 41420), (43, 41387),

Gene: Echild_71 Start: 42731, Stop: 42492, Start Num: 19
Candidate Starts for Echild_71:
(Start: 12 @42770 has 2 MA's), (Start: 19 @42731 has 34 MA's), (26, 42665), (28, 42656), (32, 42623), (38, 42590), (39, 42581), (40, 42569),

Gene: ElTiger69_71 Start: 42857, Stop: 42603, Start Num: 18
Candidate Starts for ElTiger69_71:
(Start: 18 @42857 has 31 MA's), (28, 42764), (29, 42749), (39, 42686), (43, 42641), (45, 42620), (47, 42614),

Gene: Elle_75 Start: 42755, Stop: 42471, Start Num: 14
Candidate Starts for Elle_75:
(6, 42842), (8, 42815), (Start: 14 @42755 has 1 MA's), (28, 42638), (31, 42608), (34, 42590), (35, 42584), (39, 42563), (48, 42482),

Gene: EricB_70 Start: 41308, Stop: 41069, Start Num: 20
Candidate Starts for EricB_70:
(Start: 20 @41308 has 12 MA's), (28, 41233), (32, 41200), (38, 41167), (39, 41158),

Gene: Et2Brutus_68 Start: 41569, Stop: 41303, Start Num: 16
Candidate Starts for Et2Brutus_68:
(Start: 16 @41569 has 47 MA's), (27, 41476), (32, 41437), (38, 41404), (39, 41395), (40, 41383), (43, 41350),

Gene: EvilGenius_71 Start: 44602, Stop: 44363, Start Num: 19
Candidate Starts for EvilGenius_71:
(Start: 19 @44602 has 34 MA's), (28, 44527), (32, 44494), (38, 44461), (39, 44452), (40, 44440),

Gene: Expelliarmus_77 Start: 43862, Stop: 43578, Start Num: 17
Candidate Starts for Expelliarmus_77:
(Start: 17 @43862 has 9 MA's), (Start: 22 @43820 has 2 MA's), (27, 43778), (28, 43772), (42, 43664),

Gene: Fameo_70 Start: 43185, Stop: 42946, Start Num: 19
Candidate Starts for Fameo_70:
(Start: 12 @43224 has 2 MA's), (Start: 19 @43185 has 34 MA's), (26, 43119), (28, 43110), (32, 43077), (38, 43044), (39, 43035), (40, 43023), (47, 42963),

Gene: Fibonacci_69 Start: 41575, Stop: 41309, Start Num: 16
Candidate Starts for Fibonacci_69:
(Start: 16 @41575 has 47 MA's), (27, 41482), (32, 41443), (38, 41410), (39, 41401), (40, 41389), (43, 41356),

Gene: FiringLine_71 Start: 43349, Stop: 43110, Start Num: 19
Candidate Starts for FiringLine_71:
(Start: 12 @43388 has 2 MA's), (Start: 19 @43349 has 34 MA's), (28, 43274), (32, 43241), (38, 43208), (39, 43199), (40, 43187), (46, 43130),

Gene: Flaverint_70 Start: 42033, Stop: 41767, Start Num: 16
Candidate Starts for Flaverint_70:
(Start: 16 @42033 has 47 MA's), (27, 41940), (32, 41901), (38, 41868), (39, 41859), (40, 41847), (43, 41814),

Gene: Florence1_62 Start: 41328, Stop: 41077, Start Num: 18
Candidate Starts for Florence1_62:
(Start: 18 @41328 has 31 MA's), (28, 41235), (29, 41220), (39, 41157), (43, 41112), (45, 41091), (47, 41085),

Gene: Florence4_64 Start: 41328, Stop: 41077, Start Num: 18
Candidate Starts for Florence4_64:
(Start: 18 @41328 has 31 MA's), (28, 41235), (29, 41220), (39, 41157), (43, 41112), (45, 41091), (47, 41085),

Gene: ForGetIt_66 Start: 41888, Stop: 41637, Start Num: 18
Candidate Starts for ForGetIt_66:
(Start: 18 @41888 has 31 MA's), (28, 41795), (29, 41780), (39, 41717), (43, 41672), (45, 41651), (47, 41645),

Gene: ForesterFrank_68 Start: 43066, Stop: 42824, Start Num: 19
Candidate Starts for ForesterFrank_68:
(Start: 12 @43105 has 2 MA's), (Start: 19 @43066 has 34 MA's), (Start: 20 @43063 has 12 MA's), (26, 42997), (28, 42988), (32, 42955), (38, 42922), (39, 42913), (40, 42901),

Gene: Garak_74 Start: 41848, Stop: 41591, Start Num: 16
Candidate Starts for Garak_74:
(Start: 16 @41848 has 47 MA's), (Start: 18 @41839 has 31 MA's), (26, 41764), (28, 41755), (32, 41722), (37, 41692), (39, 41680),

Gene: GaugeLDP_66 Start: 42652, Stop: 42401, Start Num: 13
Candidate Starts for GaugeLDP_66:
(Start: 13 @42652 has 19 MA's), (Start: 14 @42643 has 1 MA's), (23, 42610), (28, 42565), (32, 42532), (38, 42499), (39, 42490), (40, 42478),

Gene: George_62 Start: 41560, Stop: 41309, Start Num: 18
Candidate Starts for George_62:
(Start: 18 @41560 has 31 MA's), (28, 41467), (29, 41452), (39, 41389), (43, 41344), (45, 41323),

Gene: Georgie2_72 Start: 43394, Stop: 43155, Start Num: 19
Candidate Starts for Georgie2_72:
(Start: 12 @43433 has 2 MA's), (Start: 19 @43394 has 34 MA's), (28, 43319), (32, 43286), (38, 43253), (39, 43244), (40, 43232), (46, 43175),

Gene: Gilberta_70 Start: 42026, Stop: 41760, Start Num: 16
Candidate Starts for Gilberta_70:
(Start: 16 @42026 has 47 MA's), (27, 41933), (32, 41894), (38, 41861), (39, 41852), (40, 41840), (43, 41807),

Gene: GreedyLawyer_68 Start: 41281, Stop: 41042, Start Num: 20
Candidate Starts for GreedyLawyer_68:
(Start: 20 @41281 has 12 MA's), (28, 41206), (32, 41173), (38, 41140), (39, 41131),

Gene: Grif_70 Start: 42462, Stop: 42208, Start Num: 21
Candidate Starts for Grif_70:
(15, 42498), (Start: 18 @42483 has 31 MA's), (Start: 21 @42462 has 9 MA's), (23, 42429), (26, 42378), (28, 42369), (30, 42342), (32, 42336), (38, 42303),

Gene: Groundhog_78 Start: 43876, Stop: 43634, Start Num: 22
Candidate Starts for Groundhog_78:
(Start: 17 @43918 has 9 MA's), (Start: 22 @43876 has 2 MA's), (27, 43834), (28, 43828), (42, 43720),

Gene: Gruunaga_72 Start: 41706, Stop: 41449, Start Num: 16
Candidate Starts for Gruunaga_72:
(Start: 16 @41706 has 47 MA's), (Start: 18 @41697 has 31 MA's), (26, 41622), (28, 41613), (32, 41580), (37, 41550), (39, 41538), (49, 41457),

Gene: GtownJaz_72 Start: 42389, Stop: 42135, Start Num: 21
Candidate Starts for GtownJaz_72:
(15, 42425), (Start: 18 @42410 has 31 MA's), (Start: 21 @42389 has 9 MA's), (23, 42356), (26, 42305), (28, 42296), (30, 42269), (32, 42263), (38, 42230),

Gene: Hammer_73 Start: 41413, Stop: 41156, Start Num: 16
Candidate Starts for Hammer_73:
(Start: 16 @41413 has 47 MA's), (Start: 18 @41404 has 31 MA's), (26, 41329), (28, 41320), (32, 41287), (37, 41257), (39, 41245),

Gene: HashRod_73 Start: 42415, Stop: 42161, Start Num: 21
Candidate Starts for HashRod_73:
(Start: 13 @42469 has 19 MA's), (15, 42451), (Start: 18 @42436 has 31 MA's), (Start: 21 @42415 has 9 MA's), (23, 42382), (26, 42331), (28, 42322), (30, 42295), (32, 42289), (38, 42256),

Gene: Heffalump_69 Start: 43653, Stop: 43414, Start Num: 19
Candidate Starts for Heffalump_69:
(Start: 19 @43653 has 34 MA's), (26, 43587), (28, 43578), (32, 43545), (38, 43512), (39, 43503), (40, 43491), (47, 43431),

Gene: Helmet_75 Start: 41848, Stop: 41591, Start Num: 16
Candidate Starts for Helmet_75:
(Start: 16 @41848 has 47 MA's), (Start: 18 @41839 has 31 MA's), (26, 41764), (28, 41755), (32, 41722), (37, 41692), (39, 41680),

Gene: Herbertwm_67 Start: 42568, Stop: 42287, Start Num: 12
Candidate Starts for Herbertwm_67:
(Start: 12 @42568 has 2 MA's), (Start: 19 @42529 has 34 MA's), (Start: 22 @42496 has 2 MA's), (26, 42457), (34, 42400), (37, 42385), (50, 42292),

Gene: Hexamo_72 Start: 41382, Stop: 41125, Start Num: 16
Candidate Starts for Hexamo_72:
(Start: 16 @41382 has 47 MA's), (Start: 18 @41373 has 31 MA's), (26, 41298), (28, 41289), (32, 41256), (37, 41226), (39, 41214), (49, 41133),

Gene: Hoot_66 Start: 39166, Stop: 38927, Start Num: 20
Candidate Starts for Hoot_66:
(Start: 20 @39166 has 12 MA's), (28, 39091), (32, 39058), (38, 39025), (39, 39016),

Gene: HuhtaEnerson15_63 Start: 41469, Stop: 41218, Start Num: 18
Candidate Starts for HuhtaEnerson15_63:
(Start: 18 @41469 has 31 MA's), (28, 41376), (29, 41361), (39, 41298), (43, 41253), (45, 41232),

Gene: Hutc2_68 Start: 41575, Stop: 41309, Start Num: 16
Candidate Starts for Hutc2_68:
(Start: 16 @41575 has 47 MA's), (27, 41482), (32, 41443), (38, 41410), (39, 41401), (40, 41389), (43, 41356),

Gene: Indra_76 Start: 41849, Stop: 41592, Start Num: 16
Candidate Starts for Indra_76:
(Start: 16 @41849 has 47 MA's), (Start: 18 @41840 has 31 MA's), (26, 41765), (28, 41756), (32, 41723), (37, 41693), (39, 41681),

Gene: Iwokeuplikedis_71 Start: 42572, Stop: 42360, Start Num: 22
Candidate Starts for Iwokeuplikedis_71:
(11, 42650), (Start: 17 @42608 has 9 MA's), (Start: 22 @42572 has 2 MA's), (25, 42557), (28, 42524), (32, 42491), (38, 42458), (39, 42449), (40, 42437),

Gene: Jabiru_67 Start: 42041, Stop: 41787, Start Num: 18
Candidate Starts for Jabiru_67:
(Start: 18 @42041 has 31 MA's), (28, 41948), (29, 41933), (39, 41870), (43, 41825), (45, 41804), (47, 41798),

Gene: Jabith_70 Start: 42031, Stop: 41765, Start Num: 16
Candidate Starts for Jabith_70:
(1, 42307), (2, 42223), (3, 42211), (Start: 16 @42031 has 47 MA's), (27, 41938), (32, 41899), (38, 41866), (39, 41857), (40, 41845), (43, 41812),

Gene: Jeffabunny_73 Start: 41475, Stop: 41218, Start Num: 16
Candidate Starts for Jeffabunny_73:
(Start: 16 @41475 has 47 MA's), (Start: 18 @41466 has 31 MA's), (26, 41391), (28, 41382), (32, 41349), (37, 41319), (39, 41307),

Gene: Jerm_72 Start: 43390, Stop: 43151, Start Num: 19
Candidate Starts for Jerm_72:
(Start: 12 @43429 has 2 MA's), (Start: 19 @43390 has 34 MA's), (28, 43315), (32, 43282), (38, 43249), (39, 43240), (40, 43228),

Gene: JoshKayV_71 Start: 43441, Stop: 43202, Start Num: 19
Candidate Starts for JoshKayV_71:
(Start: 12 @43480 has 2 MA's), (Start: 19 @43441 has 34 MA's), (28, 43366), (32, 43333), (38, 43300), (39, 43291), (40, 43279),

Gene: Journey13_62 Start: 40039, Stop: 39803, Start Num: 20
Candidate Starts for Journey13_62:
(10, 40096), (Start: 13 @40072 has 19 MA's), (Start: 20 @40039 has 12 MA's), (26, 39976), (28, 39967), (32, 39934), (38, 39901), (39, 39892), (40, 39880), (49, 39811),

Gene: Jovo_66 Start: 42144, Stop: 41893, Start Num: 18
Candidate Starts for Jovo_66:
(Start: 18 @42144 has 31 MA's), (28, 42051), (29, 42036), (39, 41973), (43, 41928), (45, 41907), (47, 41901),

Gene: Jsquared_74 Start: 42531, Stop: 42292, Start Num: 19
Candidate Starts for Jsquared_74:
(Start: 19 @42531 has 34 MA's), (25, 42489), (28, 42456), (32, 42423), (38, 42390), (39, 42381), (40, 42369), (44, 42318), (49, 42300),

Gene: Kazan_72 Start: 41321, Stop: 41082, Start Num: 20
Candidate Starts for Kazan_72:
(Start: 20 @41321 has 12 MA's), (28, 41246), (32, 41213), (38, 41180), (39, 41171),

Gene: Kerberos_74 Start: 43720, Stop: 43487, Start Num: 13
Candidate Starts for Kerberos_74:
(Start: 13 @43720 has 19 MA's), (28, 43642), (32, 43609), (38, 43576), (40, 43555), (45, 43501),

Gene: KingCyrus_71 Start: 44597, Stop: 44358, Start Num: 19
Candidate Starts for KingCyrus_71:
(Start: 19 @44597 has 34 MA's), (28, 44522), (32, 44489), (38, 44456), (39, 44447), (40, 44435),

Gene: Kipper29_71 Start: 41334, Stop: 41095, Start Num: 20
Candidate Starts for Kipper29_71:
(Start: 20 @41334 has 12 MA's), (28, 41259), (32, 41226), (38, 41193), (39, 41184),

Gene: Koduck_73 Start: 42427, Stop: 42188, Start Num: 19
Candidate Starts for Koduck_73:
(Start: 19 @42427 has 34 MA's), (28, 42352), (32, 42319), (38, 42286), (39, 42277), (40, 42265), (44, 42214), (49, 42196),

Gene: Koko_74 Start: 42237, Stop: 41980, Start Num: 16
Candidate Starts for Koko_74:
(Start: 16 @42237 has 47 MA's), (Start: 18 @42228 has 31 MA's), (26, 42153), (28, 42144), (32, 42111), (37, 42081), (39, 42069), (49, 41988),

Gene: L5_68 Start: 42580, Stop: 42341, Start Num: 19
Candidate Starts for L5_68:
(Start: 19 @42580 has 34 MA's), (28, 42505), (32, 42472), (38, 42439), (39, 42430), (40, 42418), (44, 42367), (49, 42349),

Gene: LarryKay_72 Start: 42417, Stop: 42163, Start Num: 21
Candidate Starts for LarryKay_72:
(15, 42453), (Start: 18 @42438 has 31 MA's), (Start: 21 @42417 has 9 MA's), (23, 42384), (26, 42333), (28, 42324), (30, 42297), (32, 42291), (38, 42258),

Gene: Lev2_66 Start: 41776, Stop: 41525, Start Num: 18
Candidate Starts for Lev2_66:
(Start: 18 @41776 has 31 MA's), (28, 41683), (29, 41668), (39, 41605), (43, 41560), (45, 41539), (47, 41533),

Gene: Leviathan_72 Start: 43457, Stop: 43218, Start Num: 19

Candidate Starts for Leviathan_72:
(Start: 12 @43496 has 2 MA's), (Start: 19 @43457 has 34 MA's), (28, 43382), (32, 43349), (38, 43316), (39, 43307), (40, 43295),

Gene: LilTurb_71 Start: 43271, Stop: 43032, Start Num: 19
Candidate Starts for LilTurb_71:
(Start: 12 @43310 has 2 MA's), (Start: 19 @43271 has 34 MA's), (28, 43196), (32, 43163), (38, 43130), (39, 43121), (40, 43109),

Gene: Lilbunny_72 Start: 41479, Stop: 41222, Start Num: 16
Candidate Starts for Lilbunny_72:
(Start: 16 @41479 has 47 MA's), (Start: 18 @41470 has 31 MA's), (26, 41395), (28, 41386), (32, 41353), (37, 41323), (39, 41311),

Gene: LittleCherry_64 Start: 41339, Stop: 41088, Start Num: 18
Candidate Starts for LittleCherry_64:
(Start: 18 @41339 has 31 MA's), (28, 41246), (29, 41231), (39, 41168), (43, 41123), (45, 41102),

Gene: Lucivia_70 Start: 42084, Stop: 41818, Start Num: 16
Candidate Starts for Lucivia_70:
(Start: 16 @42084 has 47 MA's), (27, 41991), (32, 41952), (38, 41919), (39, 41910), (40, 41898), (43, 41865),

Gene: MaCh_69 Start: 42030, Stop: 41764, Start Num: 16
Candidate Starts for MaCh_69:
(Start: 16 @42030 has 47 MA's), (27, 41937), (32, 41898), (38, 41865), (39, 41856), (40, 41844), (43, 41811),

Gene: Mabel_69 Start: 42031, Stop: 41765, Start Num: 16
Candidate Starts for Mabel_69:
(Start: 16 @42031 has 47 MA's), (27, 41938), (32, 41899), (38, 41866), (39, 41857), (40, 41845), (43, 41812),

Gene: MajorMajor_72 Start: 42401, Stop: 42162, Start Num: 19
Candidate Starts for MajorMajor_72:
(Start: 19 @42401 has 34 MA's), (25, 42359), (28, 42326), (30, 42299), (32, 42293), (38, 42260), (39, 42251), (40, 42239), (44, 42188), (49, 42170),

Gene: MarysWell_65 Start: 42016, Stop: 41765, Start Num: 18
Candidate Starts for MarysWell_65:
(Start: 18 @42016 has 31 MA's), (26, 41932), (28, 41923), (29, 41908), (39, 41845), (43, 41800), (45, 41779),

Gene: Micasa_65 Start: 41738, Stop: 41487, Start Num: 18
Candidate Starts for Micasa_65:
(Start: 18 @41738 has 31 MA's), (26, 41654), (28, 41645), (29, 41630), (39, 41567), (43, 41522), (45, 41501),

Gene: Milcery_65 Start: 41528, Stop: 41277, Start Num: 18
Candidate Starts for Milcery_65:
(Start: 18 @41528 has 31 MA's), (28, 41435), (29, 41420), (39, 41357), (43, 41312), (45, 41291),

Gene: MissWhite_70 Start: 41650, Stop: 41378, Start Num: 13

Candidate Starts for MissWhite_70:
(Start: 13 @41650 has 19 MA's), (Start: 20 @41617 has 12 MA's), (Start: 22 @41590 has 2 MA's), (26, 41551), (28, 41542), (32, 41509), (38, 41476), (39, 41467), (40, 41455), (42, 41440), (49, 41386),

Gene: Montavir_67 Start: 42388, Stop: 42134, Start Num: 21
Candidate Starts for Montavir_67:
(15, 42424), (Start: 18 @42409 has 31 MA's), (Start: 21 @42388 has 9 MA's), (23, 42355), (26, 42304), (28, 42295), (30, 42268), (32, 42262), (38, 42229),

Gene: Mulciber_68 Start: 41572, Stop: 41306, Start Num: 16
Candidate Starts for Mulciber_68:
(Start: 16 @41572 has 47 MA's), (27, 41479), (32, 41440), (38, 41407), (39, 41398), (40, 41386), (43, 41353),

Gene: Munch_69 Start: 42035, Stop: 41769, Start Num: 16
Candidate Starts for Munch_69:
(Start: 16 @42035 has 47 MA's), (27, 41942), (32, 41903), (38, 41870), (39, 41861), (40, 41849), (43, 41816),

Gene: Naca_68 Start: 42929, Stop: 42675, Start Num: 18
Candidate Starts for Naca_68:
(Start: 18 @42929 has 31 MA's), (28, 42836), (29, 42821), (39, 42758), (43, 42713), (45, 42692), (47, 42686),

Gene: Naji_74 Start: 43721, Stop: 43488, Start Num: 13
Candidate Starts for Naji_74:
(Start: 13 @43721 has 19 MA's), (28, 43643), (32, 43610), (38, 43577), (40, 43556), (45, 43502),

Gene: Orange_68 Start: 41584, Stop: 41318, Start Num: 16
Candidate Starts for Orange_68:
(Start: 16 @41584 has 47 MA's), (27, 41491), (32, 41452), (38, 41419), (39, 41410), (40, 41398), (43, 41365),

Gene: Petersenfast_69 Start: 41583, Stop: 41317, Start Num: 16
Candidate Starts for Petersenfast_69:
(Start: 16 @41583 has 47 MA's), (27, 41490), (32, 41451), (38, 41418), (39, 41409), (40, 41397), (43, 41364),

Gene: PetterN_73 Start: 42716, Stop: 42465, Start Num: 18
Candidate Starts for PetterN_73:
(Start: 18 @42716 has 31 MA's), (28, 42623), (29, 42608), (39, 42545), (43, 42500), (45, 42479),

Gene: Ph8s_74 Start: 42194, Stop: 41919, Start Num: 13
Candidate Starts for Ph8s_74:
(Start: 13 @42194 has 19 MA's), (Start: 14 @42185 has 1 MA's), (Start: 22 @42125 has 2 MA's), (26, 42086), (32, 42044), (33, 42035), (38, 42011), (40, 41990),

Gene: Phlorence_64 Start: 41521, Stop: 41270, Start Num: 18
Candidate Starts for Phlorence_64:
(Start: 18 @41521 has 31 MA's), (28, 41428), (29, 41413), (39, 41350), (43, 41305), (45, 41284), (47, 41278),

Gene: Phoebe_73 Start: 42380, Stop: 42126, Start Num: 21

Candidate Starts for Phoebe_73:
(Start: 13 @42434 has 19 MA's), (15, 42416), (Start: 18 @42401 has 31 MA's), (Start: 21 @42380 has 9 MA's), (23, 42347), (26, 42296), (28, 42287), (30, 42260), (32, 42254), (38, 42221),

Gene: PickleBack_66 Start: 41698, Stop: 41447, Start Num: 18
Candidate Starts for PickleBack_66:
(Start: 18 @41698 has 31 MA's), (28, 41605), (29, 41590), (39, 41527), (43, 41482), (45, 41461), (47, 41455),

Gene: Pomar16_73 Start: 43761, Stop: 43528, Start Num: 13
Candidate Starts for Pomar16_73:
(Start: 13 @43761 has 19 MA's), (28, 43683), (32, 43650), (38, 43617), (40, 43596), (45, 43542),

Gene: Power_70 Start: 43392, Stop: 43153, Start Num: 19
Candidate Starts for Power_70:
(Start: 12 @43431 has 2 MA's), (Start: 19 @43392 has 34 MA's), (28, 43317), (32, 43284), (38, 43251), (39, 43242), (40, 43230), (46, 43173),

Gene: Prinashe11_64 Start: 41348, Stop: 41097, Start Num: 18
Candidate Starts for Prinashe11_64:
(Start: 18 @41348 has 31 MA's), (28, 41255), (29, 41240), (39, 41177), (43, 41132), (45, 41111),

Gene: QueenB2_69 Start: 42866, Stop: 42627, Start Num: 19
Candidate Starts for QueenB2_69:
(Start: 12 @42905 has 2 MA's), (Start: 19 @42866 has 34 MA's), (28, 42791), (32, 42758), (38, 42725), (39, 42716), (40, 42704), (47, 42644),

Gene: QueenBeesly_71 Start: 43349, Stop: 43110, Start Num: 19
Candidate Starts for QueenBeesly_71:
(Start: 12 @43388 has 2 MA's), (Start: 19 @43349 has 34 MA's), (28, 43274), (32, 43241), (38, 43208), (39, 43199), (40, 43187), (46, 43130),

Gene: Quokka_72 Start: 42401, Stop: 42162, Start Num: 19
Candidate Starts for Quokka_72:
(Start: 19 @42401 has 34 MA's), (25, 42359), (28, 42326), (30, 42299), (32, 42293), (38, 42260), (39, 42251), (40, 42239), (44, 42188), (49, 42170),

Gene: Retro23_71 Start: 43080, Stop: 42841, Start Num: 19
Candidate Starts for Retro23_71:
(Start: 12 @43119 has 2 MA's), (Start: 19 @43080 has 34 MA's), (28, 43005), (32, 42972), (38, 42939), (39, 42930), (40, 42918), (46, 42861),

Gene: Rifter_73 Start: 41009, Stop: 40752, Start Num: 16
Candidate Starts for Rifter_73:
(Start: 16 @41009 has 47 MA's), (Start: 18 @41000 has 31 MA's), (26, 40925), (28, 40916), (32, 40883), (37, 40853), (39, 40841),

Gene: Roary_82 Start: 44168, Stop: 43884, Start Num: 17
Candidate Starts for Roary_82:
(Start: 17 @44168 has 9 MA's), (Start: 22 @44126 has 2 MA's), (26, 44087), (27, 44084), (28, 44078), (42, 43970),

Gene: Roksolana_73 Start: 41743, Stop: 41486, Start Num: 16

Candidate Starts for Roksolana_73:
(Start: 16 @41743 has 47 MA's), (Start: 18 @41734 has 31 MA's), (26, 41659), (28, 41650), (32, 41617), (37, 41587), (39, 41575), (49, 41494),

Gene: Saintus_76 Start: 40816, Stop: 40532, Start Num: 17
Candidate Starts for Saintus_76:
(Start: 17 @40816 has 9 MA's), (Start: 22 @40774 has 2 MA's), (27, 40732), (28, 40726), (42, 40618),

Gene: Salz_68 Start: 41498, Stop: 41232, Start Num: 16
Candidate Starts for Salz_68:
(Start: 16 @41498 has 47 MA's), (27, 41405), (32, 41366), (38, 41333), (39, 41324), (40, 41312), (43, 41279),

Gene: Saskia_71 Start: 42046, Stop: 41783, Start Num: 16
Candidate Starts for Saskia_71:
(Start: 16 @42046 has 47 MA's), (27, 41953), (32, 41914), (37, 41884), (38, 41881), (39, 41872), (40, 41860), (49, 41791),

Gene: Scorpia_69 Start: 42287, Stop: 42036, Start Num: 18
Candidate Starts for Scorpia_69:
(Start: 18 @42287 has 31 MA's), (28, 42194), (29, 42179), (39, 42116), (43, 42071), (45, 42050),

Gene: SemperFi_71 Start: 43237, Stop: 42998, Start Num: 19
Candidate Starts for SemperFi_71:
(Start: 12 @43276 has 2 MA's), (Start: 19 @43237 has 34 MA's), (28, 43162), (32, 43129), (38, 43096), (39, 43087), (40, 43075), (46, 43018),

Gene: Serenity_74 Start: 42637, Stop: 42359, Start Num: 12
Candidate Starts for Serenity_74:
(Start: 12 @42637 has 2 MA's), (Start: 19 @42598 has 34 MA's), (25, 42556), (28, 42523), (32, 42490), (37, 42460), (38, 42457), (39, 42448), (40, 42436), (49, 42367),

Gene: Sham4_69 Start: 41582, Stop: 41316, Start Num: 16
Candidate Starts for Sham4_69:
(Start: 16 @41582 has 47 MA's), (27, 41489), (32, 41450), (38, 41417), (39, 41408), (40, 41396), (43, 41363),

Gene: Smeadley_80 Start: 43984, Stop: 43700, Start Num: 17
Candidate Starts for Smeadley_80:
(Start: 17 @43984 has 9 MA's), (Start: 22 @43942 has 2 MA's), (27, 43900), (28, 43894), (42, 43786),

Gene: Smeagan_73 Start: 43548, Stop: 43309, Start Num: 19
Candidate Starts for Smeagan_73:
(Start: 12 @43587 has 2 MA's), (Start: 19 @43548 has 34 MA's), (28, 43473), (32, 43440), (38, 43407), (39, 43398), (40, 43386),

Gene: SmellyB_71 Start: 41315, Stop: 41076, Start Num: 20
Candidate Starts for SmellyB_71:
(Start: 20 @41315 has 12 MA's), (28, 41240), (32, 41207), (38, 41174), (39, 41165),

Gene: SnapTap_70 Start: 43048, Stop: 42809, Start Num: 19
Candidate Starts for SnapTap_70:

(Start: 12 @43087 has 2 MA's), (Start: 19 @43048 has 34 MA's), (28, 42973), (32, 42940), (38, 42907), (39, 42898), (40, 42886), (46, 42829),

Gene: Snape_69 Start: 41574, Stop: 41308, Start Num: 16
Candidate Starts for Snape_69:
(Start: 16 @41574 has 47 MA's), (27, 41481), (32, 41442), (38, 41409), (39, 41400), (40, 41388), (43, 41355),

Gene: Snickers_72 Start: 42361, Stop: 42107, Start Num: 21
Candidate Starts for Snickers_72:
(15, 42397), (Start: 18 @42382 has 31 MA's), (Start: 21 @42361 has 9 MA's), (23, 42328), (26, 42277), (28, 42268), (30, 42241), (32, 42235), (38, 42202),

Gene: Stagni_69 Start: 42390, Stop: 42136, Start Num: 21
Candidate Starts for Stagni_69:
(Start: 13 @42444 has 19 MA's), (15, 42426), (Start: 18 @42411 has 31 MA's), (Start: 21 @42390 has 9 MA's), (23, 42357), (26, 42306), (28, 42297), (30, 42270), (32, 42264), (38, 42231),

Gene: StarStuff_74 Start: 43723, Stop: 43490, Start Num: 13
Candidate Starts for StarStuff_74:
(Start: 13 @43723 has 19 MA's), (28, 43645), (32, 43612), (38, 43579), (40, 43558), (45, 43504),

Gene: Stephig9_79 Start: 43923, Stop: 43639, Start Num: 17
Candidate Starts for Stephig9_79:
(Start: 17 @43923 has 9 MA's), (Start: 22 @43881 has 2 MA's), (27, 43839), (28, 43833), (42, 43725),

Gene: SweetiePie_70 Start: 43180, Stop: 42941, Start Num: 19
Candidate Starts for SweetiePie_70:
(Start: 12 @43219 has 2 MA's), (Start: 19 @43180 has 34 MA's), (28, 43105), (32, 43072), (38, 43039), (39, 43030), (40, 43018), (46, 42961),

Gene: Swirley_65 Start: 41678, Stop: 41427, Start Num: 18
Candidate Starts for Swirley_65:
(Start: 18 @41678 has 31 MA's), (28, 41585), (29, 41570), (39, 41507), (43, 41462), (45, 41441),

Gene: Tarynearal_64 Start: 41514, Stop: 41263, Start Num: 18
Candidate Starts for Tarynearal_64:
(Start: 18 @41514 has 31 MA's), (28, 41421), (29, 41406), (39, 41343), (43, 41298), (45, 41277), (47, 41271),

Gene: Temprado_74 Start: 41848, Stop: 41591, Start Num: 16
Candidate Starts for Temprado_74:
(Start: 16 @41848 has 47 MA's), (Start: 18 @41839 has 31 MA's), (26, 41764), (28, 41755), (32, 41722), (37, 41692), (39, 41680),

Gene: Tiger_65 Start: 41442, Stop: 41191, Start Num: 18
Candidate Starts for Tiger_65:
(Start: 18 @41442 has 31 MA's), (28, 41349), (29, 41334), (39, 41271), (43, 41226), (45, 41205), (47, 41199),

Gene: Timothy_69 Start: 41551, Stop: 41285, Start Num: 16
Candidate Starts for Timothy_69:

(Start: 16 @41551 has 47 MA's), (27, 41458), (32, 41419), (38, 41386), (39, 41377), (40, 41365), (43, 41332),

Gene: Timshel_68 Start: 45505, Stop: 45218, Start Num: 13
Candidate Starts for Timshel_68:
(4, 45658), (6, 45583), (9, 45550), (Start: 13 @45505 has 19 MA's), (Start: 22 @45427 has 2 MA's), (26, 45388), (28, 45379), (34, 45331), (36, 45319), (38, 45313), (40, 45292), (44, 45241), (50, 45223),

Gene: TipsytheTRex_70 Start: 42600, Stop: 42361, Start Num: 19
Candidate Starts for TipsytheTRex_70:
(Start: 19 @42600 has 34 MA's), (25, 42558), (28, 42525), (30, 42498), (32, 42492), (38, 42459), (39, 42450), (40, 42438), (44, 42387), (49, 42369),

Gene: Tomathan_74 Start: 43834, Stop: 43601, Start Num: 13
Candidate Starts for Tomathan_74:
(Start: 13 @43834 has 19 MA's), (28, 43756), (32, 43723), (38, 43690), (40, 43669), (45, 43615),

Gene: ToneTone_70 Start: 41408, Stop: 41151, Start Num: 16
Candidate Starts for ToneTone_70:
(Start: 16 @41408 has 47 MA's), (Start: 18 @41399 has 31 MA's), (26, 41324), (28, 41315), (32, 41282), (37, 41252), (39, 41240),

Gene: Travvers_73 Start: 43720, Stop: 43487, Start Num: 13
Candidate Starts for Travvers_73:
(Start: 13 @43720 has 19 MA's), (28, 43642), (32, 43609), (38, 43576), (40, 43555), (45, 43501),

Gene: Tucker_73 Start: 41611, Stop: 41354, Start Num: 16
Candidate Starts for Tucker_73:
(Start: 16 @41611 has 47 MA's), (Start: 18 @41602 has 31 MA's), (26, 41527), (28, 41518), (32, 41485), (37, 41455), (39, 41443),

Gene: Turbido_71 Start: 43267, Stop: 43028, Start Num: 19
Candidate Starts for Turbido_71:
(Start: 12 @43306 has 2 MA's), (Start: 19 @43267 has 34 MA's), (28, 43192), (32, 43159), (38, 43126), (39, 43117), (40, 43105),

Gene: Twigg_64 Start: 41326, Stop: 41075, Start Num: 18
Candidate Starts for Twigg_64:
(Start: 18 @41326 has 31 MA's), (26, 41242), (28, 41233), (29, 41218), (39, 41155), (43, 41110), (45, 41089),

Gene: UnionJack_69 Start: 41951, Stop: 41700, Start Num: 18
Candidate Starts for UnionJack_69:
(Start: 18 @41951 has 31 MA's), (28, 41858), (29, 41843), (39, 41780), (43, 41735), (45, 41714), (47, 41708),

Gene: VC3_73 Start: 43176, Stop: 42916, Start Num: 13
Candidate Starts for VC3_73:
(Start: 13 @43176 has 19 MA's), (28, 43071), (32, 43038), (38, 43005), (40, 42984), (45, 42930), (46, 42927),

Gene: VohminGhazi_71 Start: 41316, Stop: 41077, Start Num: 20
Candidate Starts for VohminGhazi_71:

(Start: 20 @41316 has 12 MA's), (28, 41241), (32, 41208), (38, 41175), (39, 41166),

Gene: Whabigail7_71 Start: 43267, Stop: 43028, Start Num: 19
Candidate Starts for Whabigail7_71:
(Start: 12 @43306 has 2 MA's), (Start: 19 @43267 has 34 MA's), (28, 43192), (32, 43159), (38, 43126), (39, 43117), (40, 43105),

Gene: Wiks_72 Start: 41479, Stop: 41222, Start Num: 16
Candidate Starts for Wiks_72:
(Start: 16 @41479 has 47 MA's), (Start: 18 @41470 has 31 MA's), (26, 41395), (28, 41386), (32, 41353), (37, 41323), (39, 41311),

Gene: Wolpertinger_67 Start: 41583, Stop: 41317, Start Num: 16
Candidate Starts for Wolpertinger_67:
(Start: 16 @41583 has 47 MA's), (27, 41490), (32, 41451), (38, 41418), (39, 41409), (40, 41397), (43, 41364),

Gene: WunderPhul_73 Start: 41477, Stop: 41220, Start Num: 16
Candidate Starts for WunderPhul_73:
(Start: 16 @41477 has 47 MA's), (Start: 18 @41468 has 31 MA's), (26, 41393), (28, 41384), (32, 41351), (37, 41321), (39, 41309),

Gene: Yokurt_72 Start: 41479, Stop: 41222, Start Num: 16
Candidate Starts for Yokurt_72:
(Start: 16 @41479 has 47 MA's), (Start: 18 @41470 has 31 MA's), (26, 41395), (28, 41386), (32, 41353), (37, 41323), (39, 41311),

Gene: Zaka_73 Start: 41479, Stop: 41222, Start Num: 16
Candidate Starts for Zaka_73:
(Start: 16 @41479 has 47 MA's), (Start: 18 @41470 has 31 MA's), (26, 41395), (28, 41386), (32, 41353), (37, 41323), (39, 41311),

Gene: Zulu_74 Start: 41857, Stop: 41600, Start Num: 16
Candidate Starts for Zulu_74:
(Start: 16 @41857 has 47 MA's), (Start: 18 @41848 has 31 MA's), (26, 41773), (28, 41764), (32, 41731), (37, 41701), (39, 41689),