Pham 290984

Genome map alignment for Pham 290984 showing the following phages:

1: Peregrin_132
2: Weasels2_136
3: Grayson_132
4: Sixama_38
5: Sephiroth_108
6: Kudefre_112
7: Syleon_113
8: Octobien14_108
9: LilJank_106
10: Trax_110 + 1
11: Rabbitrun_110
12: Apocalypse_61
13: Pisa4_52 + 4
14: Jarvi_58 + 14
15: Prithvi_59 + 15
16: MeaningOfLife_59 + 3
17: Peel_58 + 29
18: DrHayes_59 + 5
19: Ageofdapage_61
20: Yunkel11_61 + 2
21: LaterM_59
22: Tiri_59
23: Devera_64 + 2
24: YoureAdopted_57
25: Angelica_58
26: CrimD_59
27: TingHuaYa_60
28: Anaya_60
29: Stinson_59
30: Geraldini_61
31: Curiosium_61
32: Hurricane_58 + 1
33: Lea83_58 + 1
34: Keshu_60
35: TribleTrouble_57
36: Pixie_57
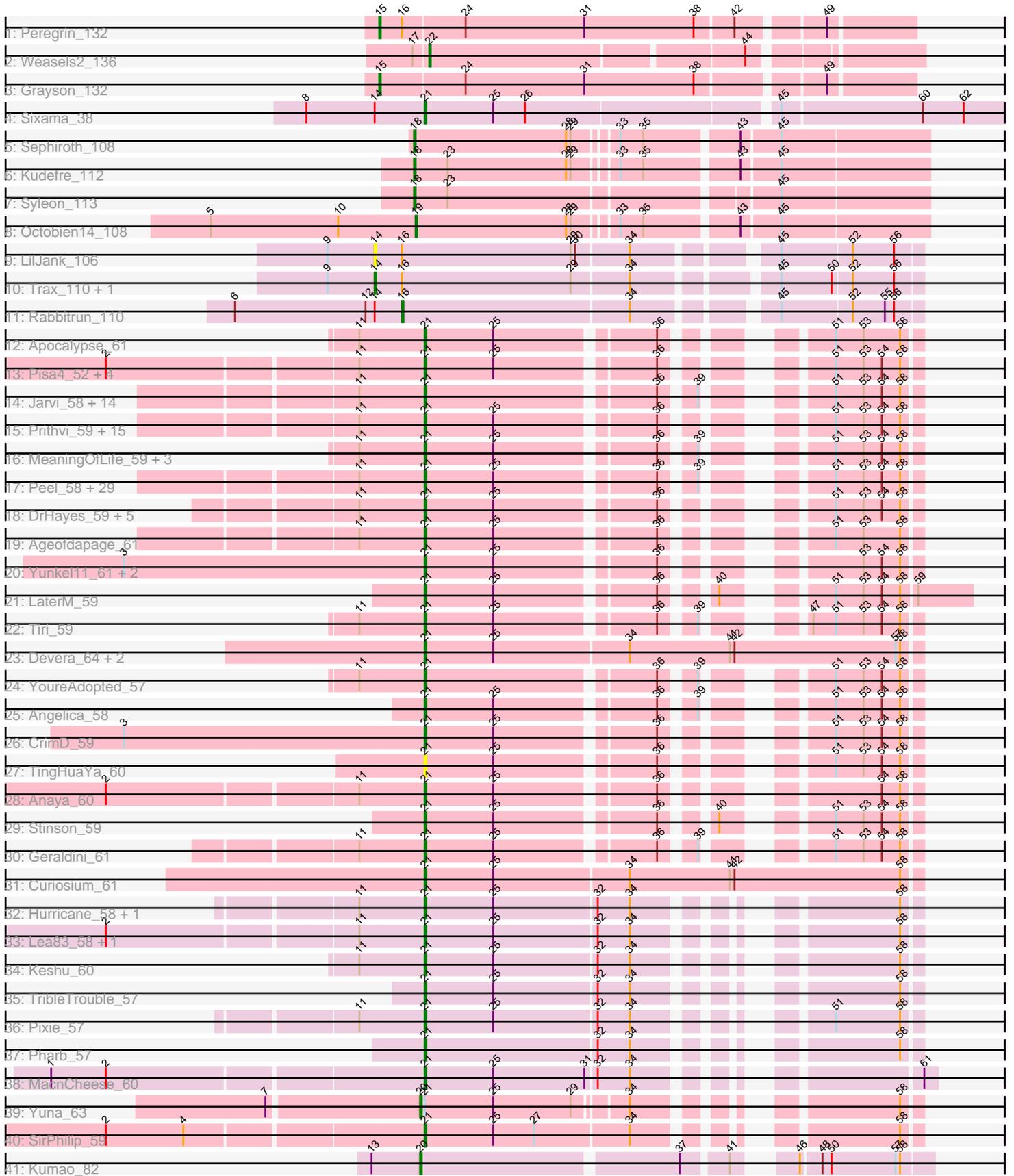37: Pharb_57
38: MacnCheese_60
39: Yuna_63
40: SirPhilip_59
41: Kumao_82

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 290984 Report

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

Pham number 290984 has 118 members, 7 are drafts.

Phages represented in each track:
• Track 1 : Peregrin_132
• Track 2 : Weasels2_136
• Track 3 : Grayson_132
• Track 4 : Sixama_38
• Track 5 : Sephiroth_108
• Track 6 : Kudefre_112
• Track 7 : Syleon_113
• Track 8 : Octobien14_108
• Track 9 : LilJank_106
• Track 10 : Trax_110, Neville_108
• Track 11 : Rabbitrun_110
• Track 12 : Apocalypse_61
• Track 13 : Pisa4_52, Bella96_59, DartGoblin_61, Pisa1_58, Murucutumbu_59
• Track 14 : Jarvi_58, Rosmarinus_58, CREW_58, Topper_58, Dalmuri_58, BGlluviae_58, Jeckyll_58, Joy99_58, Inky_58, Lunahalos_58, Capricorn_58, Belladonna_58, CallaLilly_58, Spock_58, Llorens_58
• Track 15 : Prithvi_59, MacKat_53, Megsy_60, LindNT_57, Zabiza_53, ActinUp_58, Zavala_60, Clipper_61, JAWS_58, TreyKay_59, Veliki_59, TaiwanKao_60, Mynx_59, HedwigODU_58, Sulley_58, Ramen_59
• Track 16 : MeaningOfLife_59, Adonis_58, Deby_58, Jayhawk_59
• Track 17 : Peel_58, TruffulaTree_58, Boiiii_58, Hyperbowlee_58, Asayake_58, Bern_59, AlishaPH_58, Atiba_59, BEEST_58, BaghaKamala_57, Slimphazie_58, Pokerus_57, CheetoDust_57, Blizzard_58, Durfee_58, Beezoo_60, Rapunzel97_59, Tachez_58, Homura_58, Padpat_60, BarrelRoll_58, Twitch_58, Emerson_59, Ganymede_59, QuincyRose_57, ShiaSurprise_59, Adephagia_58, Piatt_58, Padfoot_58, CaseJules_60
• Track 18 : DrHayes_59, TiniBug_59, SamuelLPlaqson_59, Anma_60, Urkel_59, LastHope_61
• Track 19 : Ageofdapage_61
• Track 20 : Yunkel11_61, Efra2_62, Guanica15_61
• Track 21 : LaterM_59
• Track 22 : Tiri_59
• Track 23 : Devera_64, Dole_62, Illumine_62
• Track 24 : YoureAdopted_57
• Track 25 : Angelica_58
• Track 26 : CrimD_59
• Track 27 : TingHuaYa_60

• Track 28 : Anaya_60
• Track 29 : Stinson_59
• Track 30 : Geraldini_61
• Track 31 : Curiosium_61
• Track 32 : Hurricane_58, TBond007_56
• Track 33 : Lea83_58, ShedlockHolmes_59
• Track 34 : Keshu_60
• Track 35 : TribleTrouble_57
• Track 36 : Pixie_57
• Track 37 : Pharb_57
• Track 38 : MacnCheese_60
• Track 39 : Yuna_63
• Track 40 : SirPhilip_59
• Track 41 : Kumao_82

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

The start number called the most often in the published annotations is 21, it was called in 99 of the 111 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• ActinUp_58, Adephagia_58, Adonis_58, Ageofdapage_61, AlishaPH_58, Anaya_60, Angelica_58, Anma_60, Apocalypse_61, Asayake_58, Atiba_59, BEEST_58, BGlluviae_58, BaghaKamala_57, BarrelRoll_58, Beezoo_60, Bella96_59, Belladonna_58, Bern_59, Blizzard_58, Boiiii_58, CREW_58, CallaLilly_58, Capricorn_58, CaseJules_60, CheetoDust_57, Clipper_61, CrimD_59, Curiosium_61, Dalmuri_58, DartGoblin_61, Deby_58, Devera_64, Dole_62, DrHayes_59, Durfee_58, Efra2_62, Emerson_59, Ganymede_59, Geraldini_61, Guanica15_61, HedwigODU_58, Homura_58, Hurricane_58, Hyperbowlee_58, Illumine_62, Inky_58, JAWS_58, Jarvi_58, Jayhawk_59, Jeckyll_58, Joy99_58, Keshu_60, LastHope_61, LaterM_59, Lea83_58, LindNT_57, Llorens_58, Lunahalos_58, MacKat_53, MacnCheese_60, MeaningOfLife_59, Megsy_60, Murucutumbu_59, Mynx_59, Padfoot_58, Padpat_60, Peel_58, Pharb_57, Piatt_58, Pisa1_58, Pisa4_52, Pixie_57, Pokerus_57, Prithvi_59, QuincyRose_57, Ramen_59, Rapunzel97_59, Rosmarinus_58, SamuelLPlaqson_59, ShedlockHolmes_59, ShiaSurprise_59, SirPhilip_59, Sixama_38, Slimphazie_58, Spock_58, Stinson_59, Sulley_58, TBond007_56, Tachez_58, TaiwanKao_60, TingHuaYa_60, TiniBug_59, Tiri_59, Topper_58, TreyKay_59, TribleTrouble_57, TruffulaTree_58, Twitch_58, Urkel_59, Veliki_59, YoureAdopted_57, Yunkel11_61, Zabiza_53, Zavala_60,

Genes that have the "Most Annotated" start but do not call it:
• Yuna_63,

Genes that do not have the "Most Annotated" start:
• Grayson_132, Kudefre_112, Kumao_82, LilJank_106, Neville_108, Octobien14_108, Peregrin_132, Rabbitrun_110, Sephiroth_108, Syleon_113, Trax_110, Weasels2_136,

Summary by start number:

Start 14:
• Found in 5 of 118 (4.2%) of genes in pham
• Manual Annotations of this start: 2 of 111
• Called 60.0% of time when present
• Phage (with cluster) where this start called: LilJank_106 (DU2), Neville_108 (DU2), Trax_110 (DU2),

Start 15:
• Found in 2 of 118 (1.7%) of genes in pham
• Manual Annotations of this start: 2 of 111
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Grayson_132 (CB), Peregrin_132 (CB),

Start 16:
• Found in 5 of 118 (4.2%) of genes in pham
• Manual Annotations of this start: 1 of 111
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Rabbitrun_110 (DU2),

Start 18:
• Found in 3 of 118 (2.5%) of genes in pham
• Manual Annotations of this start: 3 of 111
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Kudefre_112 (DU1), Sephiroth_108 (DU1), Syleon_113 (DU1),

Start 19:
• Found in 1 of 118 (0.8%) of genes in pham
• Manual Annotations of this start: 1 of 111
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Octobien14_108 (DU1),

Start 20:
• Found in 2 of 118 (1.7%) of genes in pham
• Manual Annotations of this start: 2 of 111
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Kumao_82 (singleton), Yuna_63 (K6),

Start 21:
• Found in 106 of 118 (89.8%) of genes in pham
• Manual Annotations of this start: 99 of 111
• Called 99.1% of time when present
• Phage (with cluster) where this start called: ActinUp_58 (K1), Adephagia_58 (K1), Adonis_58 (K1), Ageofdapage_61 (K1), AlishaPH_58 (K1), Anaya_60 (K1), Angelica_58 (K1), Anma_60 (K1), Apocalypse_61 (K1), Asayake_58 (K1), Atiba_59 (K1), BEEST_58 (K1), BGlluviae_58 (K1), BaghaKamala_57 (K1), BarrelRoll_58 (K1), Beezoo_60 (K1), Bella96_59 (K1), Belladonna_58 (K1), Bern_59 (K1), Blizzard_58 (K1), Boiiii_58 (K1), CREW_58 (K1), CallaLilly_58 (K1), Capricorn_58 (K1), CaseJules_60 (K1), CheetoDust_57 (K1), Clipper_61 (K1), CrimD_59 (K1), Curiosium_61 (K1), Dalmuri_58 (K1), DartGoblin_61 (K1), Deby_58 (K1), Devera_64 (K1), Dole_62 (K1), DrHayes_59 (K1), Durfee_58 (K1), Efra2_62 (K1), Emerson_59 (K1), Ganymede_59 (K1), Geraldini_61 (K1), Guanica15_61 (K1), HedwigODU_58 (K1), Homura_58 (K1), Hurricane_58 (K3), Hyperbowlee_58 (K1), Illumine_62 (K1),

Inky_58 (K1), JAWS_58 (K1), Jarvi_58 (K1), Jayhawk_59 (K1), Jeckyll_58 (K1), Joy99_58 (K1), Keshu_60 (K3), LastHope_61 (K1), LaterM_59 (K1), Lea83_58 (K3), LindNT_57 (K1), Llorens_58 (K1), Lunahalos_58 (K1), MacKat_53 (K1), MacnCheese_60 (K3), MeaningOfLife_59 (K1), Megsy_60 (K1), Murucutumbu_59 (K1), Mynx_59 (K1), Padfoot_58 (K1), Padpat_60 (K1), Peel_58 (K1), Pharb_57 (K3), Piatt_58 (K1), Pisa1_58 (K1), Pisa4_52 (K1), Pixie_57 (K3), Pokerus_57 (K1), Prithvi_59 (K1), QuincyRose_57 (K1), Ramen_59 (K1), Rapunzel97_59 (K1), Rosmarinus_58 (K1), SamuelLPlaqson_59 (K1), ShedlockHolmes_59 (K3), ShiaSurprise_59 (K1), SirPhilip_59 (K6), Sixama_38 (DS), Slimphazie_58 (K1), Spock_58 (K1), Stinson_59 (K1), Sulley_58 (K1), TBond007_56 (K3), Tachez_58 (K1), TaiwanKao_60 (K1), TingHuaYa_60 (K1), TiniBug_59 (K1), Tiri_59 (K1), Topper_58 (K1), TreyKay_59 (K1), TribleTrouble_57 (K3), TruffulaTree_58 (K1), Twitch_58 (K1), Urkel_59 (K1), Veliki_59 (K1), YoureAdopted_57 (K1), Yunkel11_61 (K1), Zabiza_53 (K1), Zavala_60 (K1),

Start 22:
• Found in 1 of 118 (0.8%) of genes in pham
• Manual Annotations of this start: 1 of 111
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Weasels2_136 (CB),

Summary by clusters:

There are 8 clusters represented in this pham: singleton, CB, K3, K1, K6, DU1, DU2, DS,

Info for manual annotations of cluster CB:
•Start number 15 was manually annotated 2 times for cluster CB.
•Start number 22 was manually annotated 1 time for cluster CB.

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

Info for manual annotations of cluster DU1:
•Start number 18 was manually annotated 3 times for cluster DU1.
•Start number 19 was manually annotated 1 time for cluster DU1.

Info for manual annotations of cluster DU2:
•Start number 14 was manually annotated 2 times for cluster DU2.
•Start number 16 was manually annotated 1 time for cluster DU2.

Info for manual annotations of cluster K1:
•Start number 21 was manually annotated 88 times for cluster K1.

Info for manual annotations of cluster K3:
•Start number 21 was manually annotated 9 times for cluster K3.

Info for manual annotations of cluster K6:
•Start number 20 was manually annotated 1 time for cluster K6.
•Start number 21 was manually annotated 1 time for cluster K6.

Gene Information:

Gene: ActinUp_58 Start: 40539, Stop: 40805, Start Num: 21
Candidate Starts for ActinUp_58:
(11, 40497), (Start: 21 @40539 has 99 MA's), (25, 40584), (36, 40680), (51, 40752), (53, 40770), (54, 40782), (58, 40794),

Gene: Adephagia_58 Start: 40540, Stop: 40806, Start Num: 21
Candidate Starts for Adephagia_58:
(11, 40498), (Start: 21 @40540 has 99 MA's), (25, 40585), (36, 40681), (39, 40699), (51, 40753), (53, 40771), (54, 40783), (58, 40795),

Gene: Adonis_58 Start: 40787, Stop: 41053, Start Num: 21
Candidate Starts for Adonis_58:
(11, 40745), (Start: 21 @40787 has 99 MA's), (25, 40832), (36, 40928), (39, 40946), (51, 41000), (53, 41018), (54, 41030), (58, 41042),

Gene: Ageofdapage_61 Start: 41528, Stop: 41794, Start Num: 21
Candidate Starts for Ageofdapage_61:
(11, 41486), (Start: 21 @41528 has 99 MA's), (25, 41573), (36, 41669), (51, 41741), (53, 41759), (58, 41783),

Gene: AlishaPH_58 Start: 40801, Stop: 41067, Start Num: 21
Candidate Starts for AlishaPH_58:
(11, 40759), (Start: 21 @40801 has 99 MA's), (25, 40846), (36, 40942), (39, 40960), (51, 41014), (53, 41032), (54, 41044), (58, 41056),

Gene: Anaya_60 Start: 41056, Stop: 41322, Start Num: 21
Candidate Starts for Anaya_60:
(2, 40858), (11, 41014), (Start: 21 @41056 has 99 MA's), (25, 41101), (36, 41197), (54, 41299), (58, 41311),

Gene: Angelica_58 Start: 40695, Stop: 40961, Start Num: 21
Candidate Starts for Angelica_58:
(Start: 21 @40695 has 99 MA's), (25, 40740), (36, 40836), (39, 40854), (51, 40908), (53, 40926), (54, 40938), (58, 40950),

Gene: Anma_60 Start: 41439, Stop: 41705, Start Num: 21
Candidate Starts for Anma_60:
(11, 41397), (Start: 21 @41439 has 99 MA's), (25, 41484), (36, 41580), (51, 41652), (53, 41670), (54, 41682), (58, 41694),

Gene: Apocalypse_61 Start: 41464, Stop: 41730, Start Num: 21
Candidate Starts for Apocalypse_61:
(11, 41422), (Start: 21 @41464 has 99 MA's), (25, 41509), (36, 41605), (51, 41677), (53, 41695), (58, 41719),

Gene: Asayake_58 Start: 40855, Stop: 41121, Start Num: 21
Candidate Starts for Asayake_58:
(11, 40813), (Start: 21 @40855 has 99 MA's), (25, 40900), (36, 40996), (39, 41014), (51, 41068), (53, 41086), (54, 41098), (58, 41110),

Gene: Atiba_59 Start: 40503, Stop: 40769, Start Num: 21

Candidate Starts for Atiba_59:
(11, 40461), (Start: 21 @40503 has 99 MA's), (25, 40548), (36, 40644), (39, 40662), (51, 40716), (53, 40734), (54, 40746), (58, 40758),

Gene: BEEST_58 Start: 40855, Stop: 41121, Start Num: 21
Candidate Starts for BEEST_58:
(11, 40813), (Start: 21 @40855 has 99 MA's), (25, 40900), (36, 40996), (39, 41014), (51, 41068), (53, 41086), (54, 41098), (58, 41110),

Gene: BGlluviae_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for BGlluviae_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: BaghaKamala_57 Start: 39896, Stop: 40162, Start Num: 21
Candidate Starts for BaghaKamala_57:
(11, 39854), (Start: 21 @39896 has 99 MA's), (25, 39941), (36, 40037), (39, 40055), (51, 40109), (53, 40127), (54, 40139), (58, 40151),

Gene: BarrelRoll_58 Start: 40519, Stop: 40785, Start Num: 21
Candidate Starts for BarrelRoll_58:
(11, 40477), (Start: 21 @40519 has 99 MA's), (25, 40564), (36, 40660), (39, 40678), (51, 40732), (53, 40750), (54, 40762), (58, 40774),

Gene: Beezoo_60 Start: 41503, Stop: 41769, Start Num: 21
Candidate Starts for Beezoo_60:
(11, 41461), (Start: 21 @41503 has 99 MA's), (25, 41548), (36, 41644), (39, 41662), (51, 41716), (53, 41734), (54, 41746), (58, 41758),

Gene: Bella96_59 Start: 41284, Stop: 41550, Start Num: 21
Candidate Starts for Bella96_59:
(2, 41086), (11, 41242), (Start: 21 @41284 has 99 MA's), (25, 41329), (36, 41425), (51, 41497), (53, 41515), (54, 41527), (58, 41539),

Gene: Belladonna_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for Belladonna_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: Bern_59 Start: 39486, Stop: 39752, Start Num: 21
Candidate Starts for Bern_59:
(11, 39444), (Start: 21 @39486 has 99 MA's), (25, 39531), (36, 39627), (39, 39645), (51, 39699), (53, 39717), (54, 39729), (58, 39741),

Gene: Blizzard_58 Start: 40855, Stop: 41121, Start Num: 21
Candidate Starts for Blizzard_58:
(11, 40813), (Start: 21 @40855 has 99 MA's), (25, 40900), (36, 40996), (39, 41014), (51, 41068), (53, 41086), (54, 41098), (58, 41110),

Gene: Boiiii_58 Start: 40857, Stop: 41123, Start Num: 21
Candidate Starts for Boiiii_58:
(11, 40815), (Start: 21 @40857 has 99 MA's), (25, 40902), (36, 40998), (39, 41016), (51, 41070), (53, 41088), (54, 41100), (58, 41112),

Gene: CREW_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for CREW_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: CallaLilly_58 Start: 40581, Stop: 40847, Start Num: 21
Candidate Starts for CallaLilly_58:
(11, 40539), (Start: 21 @40581 has 99 MA's), (36, 40722), (39, 40740), (51, 40794), (53, 40812), (54, 40824), (58, 40836),

Gene: Capricorn_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for Capricorn_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: CaseJules_60 Start: 40855, Stop: 41121, Start Num: 21
Candidate Starts for CaseJules_60:
(11, 40813), (Start: 21 @40855 has 99 MA's), (25, 40900), (36, 40996), (39, 41014), (51, 41068), (53, 41086), (54, 41098), (58, 41110),

Gene: CheetoDust_57 Start: 39940, Stop: 40206, Start Num: 21
Candidate Starts for CheetoDust_57:
(11, 39898), (Start: 21 @39940 has 99 MA's), (25, 39985), (36, 40081), (39, 40099), (51, 40153), (53, 40171), (54, 40183), (58, 40195),

Gene: Clipper_61 Start: 41118, Stop: 41384, Start Num: 21
Candidate Starts for Clipper_61:
(11, 41076), (Start: 21 @41118 has 99 MA's), (25, 41163), (36, 41259), (51, 41331), (53, 41349), (54, 41361), (58, 41373),

Gene: CrimD_59 Start: 41076, Stop: 41342, Start Num: 21
Candidate Starts for CrimD_59:
(3, 40881), (Start: 21 @41076 has 99 MA's), (25, 41121), (36, 41217), (51, 41289), (53, 41307), (54, 41319), (58, 41331),

Gene: Curiosium_61 Start: 39723, Stop: 40043, Start Num: 21
Candidate Starts for Curiosium_61:
(Start: 21 @39723 has 99 MA's), (25, 39768), (34, 39855), (41, 39921), (42, 39924), (58, 40032),

Gene: Dalmuri_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for Dalmuri_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: DartGoblin_61 Start: 41256, Stop: 41522, Start Num: 21
Candidate Starts for DartGoblin_61:
(2, 41058), (11, 41214), (Start: 21 @41256 has 99 MA's), (25, 41301), (36, 41397), (51, 41469), (53, 41487), (54, 41499), (58, 41511),

Gene: Deby_58 Start: 40717, Stop: 40983, Start Num: 21
Candidate Starts for Deby_58:

(11, 40675), (Start: 21 @40717 has 99 MA's), (25, 40762), (36, 40858), (39, 40876), (51, 40930), (53, 40948), (54, 40960), (58, 40972),

Gene: Devera_64 Start: 41616, Stop: 41936, Start Num: 21
Candidate Starts for Devera_64:
(Start: 21 @41616 has 99 MA's), (25, 41661), (34, 41748), (41, 41814), (42, 41817), (57, 41922), (58, 41925),

Gene: Dole_62 Start: 41619, Stop: 41939, Start Num: 21
Candidate Starts for Dole_62:
(Start: 21 @41619 has 99 MA's), (25, 41664), (34, 41751), (41, 41817), (42, 41820), (57, 41925), (58, 41928),

Gene: DrHayes_59 Start: 41439, Stop: 41705, Start Num: 21
Candidate Starts for DrHayes_59:
(11, 41397), (Start: 21 @41439 has 99 MA's), (25, 41484), (36, 41580), (51, 41652), (53, 41670), (54, 41682), (58, 41694),

Gene: Durfee_58 Start: 40855, Stop: 41121, Start Num: 21
Candidate Starts for Durfee_58:
(11, 40813), (Start: 21 @40855 has 99 MA's), (25, 40900), (36, 40996), (39, 41014), (51, 41068), (53, 41086), (54, 41098), (58, 41110),

Gene: Efra2_62 Start: 40615, Stop: 40881, Start Num: 21
Candidate Starts for Efra2_62:
(3, 40420), (Start: 21 @40615 has 99 MA's), (25, 40660), (36, 40756), (53, 40846), (54, 40858), (58, 40870),

Gene: Emerson_59 Start: 40536, Stop: 40802, Start Num: 21
Candidate Starts for Emerson_59:
(11, 40494), (Start: 21 @40536 has 99 MA's), (25, 40581), (36, 40677), (39, 40695), (51, 40749), (53, 40767), (54, 40779), (58, 40791),

Gene: Ganymede_59 Start: 40919, Stop: 41185, Start Num: 21
Candidate Starts for Ganymede_59:
(11, 40877), (Start: 21 @40919 has 99 MA's), (25, 40964), (36, 41060), (39, 41078), (51, 41132), (53, 41150), (54, 41162), (58, 41174),

Gene: Geraldini_61 Start: 41585, Stop: 41851, Start Num: 21
Candidate Starts for Geraldini_61:
(11, 41543), (Start: 21 @41585 has 99 MA's), (25, 41630), (36, 41726), (39, 41744), (51, 41798), (53, 41816), (54, 41828), (58, 41840),

Gene: Grayson_132 Start: 78512, Stop: 78844, Start Num: 15
Candidate Starts for Grayson_132:
(Start: 15 @78512 has 2 MA's), (24, 78566), (31, 78644), (38, 78716), (49, 78791),

Gene: Guanica15_61 Start: 40356, Stop: 40622, Start Num: 21
Candidate Starts for Guanica15_61:
(3, 40161), (Start: 21 @40356 has 99 MA's), (25, 40401), (36, 40497), (53, 40587), (54, 40599), (58, 40611),

Gene: HedwigODU_58 Start: 40539, Stop: 40805, Start Num: 21

Candidate Starts for HedwigODU_58:
(11, 40497), (Start: 21 @40539 has 99 MA's), (25, 40584), (36, 40680), (51, 40752), (53, 40770), (54, 40782), (58, 40794),

Gene: Homura_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for Homura_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (25, 40703), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: Hurricane_58 Start: 40805, Stop: 41074, Start Num: 21
Candidate Starts for Hurricane_58:
(11, 40766), (Start: 21 @40805 has 99 MA's), (25, 40850), (32, 40916), (34, 40937), (58, 41063),

Gene: Hyperbowlee_58 Start: 40855, Stop: 41121, Start Num: 21
Candidate Starts for Hyperbowlee_58:
(11, 40813), (Start: 21 @40855 has 99 MA's), (25, 40900), (36, 40996), (39, 41014), (51, 41068), (53, 41086), (54, 41098), (58, 41110),

Gene: Illumine_62 Start: 41618, Stop: 41938, Start Num: 21
Candidate Starts for Illumine_62:
(Start: 21 @41618 has 99 MA's), (25, 41663), (34, 41750), (41, 41816), (42, 41819), (57, 41924), (58, 41927),

Gene: Inky_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for Inky_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: JAWS_58 Start: 40525, Stop: 40791, Start Num: 21
Candidate Starts for JAWS_58:
(11, 40483), (Start: 21 @40525 has 99 MA's), (25, 40570), (36, 40666), (51, 40738), (53, 40756), (54, 40768), (58, 40780),

Gene: Jarvi_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for Jarvi_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: Jayhawk_59 Start: 40534, Stop: 40800, Start Num: 21
Candidate Starts for Jayhawk_59:
(11, 40492), (Start: 21 @40534 has 99 MA's), (25, 40579), (36, 40675), (39, 40693), (51, 40747), (53, 40765), (54, 40777), (58, 40789),

Gene: Jeckyll_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for Jeckyll_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: Joy99_58 Start: 40587, Stop: 40853, Start Num: 21
Candidate Starts for Joy99_58:
(11, 40545), (Start: 21 @40587 has 99 MA's), (36, 40728), (39, 40746), (51, 40800), (53, 40818), (54, 40830), (58, 40842),

Gene: Keshu_60 Start: 40903, Stop: 41172, Start Num: 21
Candidate Starts for Keshu_60:
(11, 40864), (Start: 21 @40903 has 99 MA's), (25, 40948), (32, 41014), (34, 41035), (58, 41161),

Gene: Kudefre_112 Start: 61740, Stop: 62057, Start Num: 18
Candidate Starts for Kudefre_112:
(Start: 18 @61740 has 3 MA's), (23, 61761), (28, 61839), (29, 61842), (33, 61866), (35, 61881), (43, 61938), (45, 61962),

Gene: Kumao_82 Start: 53900, Stop: 54196, Start Num: 20
Candidate Starts for Kumao_82:
(13, 53870), (Start: 20 @53900 has 2 MA's), (37, 54062), (41, 54089), (46, 54113), (48, 54125), (50, 54131), (57, 54173), (58, 54176),

Gene: LastHope_61 Start: 39701, Stop: 39967, Start Num: 21
Candidate Starts for LastHope_61:
(11, 39659), (Start: 21 @39701 has 99 MA's), (25, 39746), (36, 39842), (51, 39914), (53, 39932), (54, 39944), (58, 39956),

Gene: LaterM_59 Start: 41420, Stop: 41719, Start Num: 21
Candidate Starts for LaterM_59:
(Start: 21 @41420 has 99 MA's), (25, 41465), (36, 41561), (40, 41585), (51, 41633), (53, 41651), (54, 41663), (58, 41675), (59, 41684),

Gene: Lea83_58 Start: 40858, Stop: 41127, Start Num: 21
Candidate Starts for Lea83_58:
(2, 40663), (11, 40819), (Start: 21 @40858 has 99 MA's), (25, 40903), (32, 40969), (34, 40990), (58, 41116),

Gene: LilJank_106 Start: 63800, Stop: 64132, Start Num: 14
Candidate Starts for LilJank_106:
(9, 63770), (Start: 14 @63800 has 2 MA's), (Start: 16 @63818 has 1 MA's), (29, 63929), (30, 63932), (34, 63965), (45, 64043), (52, 64088), (56, 64115),

Gene: LindNT_57 Start: 40742, Stop: 41008, Start Num: 21
Candidate Starts for LindNT_57:
(11, 40700), (Start: 21 @40742 has 99 MA's), (25, 40787), (36, 40883), (51, 40955), (53, 40973), (54, 40985), (58, 40997),

Gene: Llorens_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for Llorens_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: Lunahalos_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for Lunahalos_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: MacKat_53 Start: 36002, Stop: 36268, Start Num: 21
Candidate Starts for MacKat_53:
(11, 35960), (Start: 21 @36002 has 99 MA's), (25, 36047), (36, 36143), (51, 36215), (53, 36233), (54, 36245), (58, 36257),

Gene: MacnCheese_60 Start: 41385, Stop: 41663, Start Num: 21
Candidate Starts for MacnCheese_60:
(1, 41154), (2, 41190), (Start: 21 @41385 has 99 MA's), (25, 41430), (31, 41490), (32, 41496), (34, 41517), (61, 41655),

Gene: MeaningOfLife_59 Start: 41413, Stop: 41679, Start Num: 21
Candidate Starts for MeaningOfLife_59:
(11, 41371), (Start: 21 @41413 has 99 MA's), (25, 41458), (36, 41554), (39, 41572), (51, 41626), (53, 41644), (54, 41656), (58, 41668),

Gene: Megsy_60 Start: 40807, Stop: 41073, Start Num: 21
Candidate Starts for Megsy_60:
(11, 40765), (Start: 21 @40807 has 99 MA's), (25, 40852), (36, 40948), (51, 41020), (53, 41038), (54, 41050), (58, 41062),

Gene: Murucutumbu_59 Start: 41513, Stop: 41779, Start Num: 21
Candidate Starts for Murucutumbu_59:
(2, 41315), (11, 41471), (Start: 21 @41513 has 99 MA's), (25, 41558), (36, 41654), (51, 41726), (53, 41744), (54, 41756), (58, 41768),

Gene: Mynx_59 Start: 40855, Stop: 41121, Start Num: 21
Candidate Starts for Mynx_59:
(11, 40813), (Start: 21 @40855 has 99 MA's), (25, 40900), (36, 40996), (51, 41068), (53, 41086), (54, 41098), (58, 41110),

Gene: Neville_108 Start: 62420, Stop: 62755, Start Num: 14
Candidate Starts for Neville_108:
(9, 62390), (Start: 14 @62420 has 2 MA's), (Start: 16 @62438 has 1 MA's), (29, 62549), (34, 62585), (45, 62666), (50, 62699), (52, 62711), (56, 62738),

Gene: Octobien14_108 Start: 60532, Stop: 60849, Start Num: 19
Candidate Starts for Octobien14_108:
(5, 60397), (10, 60481), (Start: 19 @60532 has 1 MA's), (28, 60631), (29, 60634), (33, 60658), (35, 60673), (43, 60730), (45, 60754),

Gene: Padfoot_58 Start: 40855, Stop: 41121, Start Num: 21
Candidate Starts for Padfoot_58:
(11, 40813), (Start: 21 @40855 has 99 MA's), (25, 40900), (36, 40996), (39, 41014), (51, 41068), (53, 41086), (54, 41098), (58, 41110),

Gene: Padpat_60 Start: 40536, Stop: 40802, Start Num: 21
Candidate Starts for Padpat_60:
(11, 40494), (Start: 21 @40536 has 99 MA's), (25, 40581), (36, 40677), (39, 40695), (51, 40749), (53, 40767), (54, 40779), (58, 40791),

Gene: Peel_58 Start: 40660, Stop: 40926, Start Num: 21
Candidate Starts for Peel_58:
(11, 40618), (Start: 21 @40660 has 99 MA's), (25, 40705), (36, 40801), (39, 40819), (51, 40873), (53, 40891), (54, 40903), (58, 40915),

Gene: Peregrin_132 Start: 78720, Stop: 79052, Start Num: 15
Candidate Starts for Peregrin_132:

(Start: 15 @78720 has 2 MA's), (Start: 16 @78735 has 1 MA's), (24, 78774), (31, 78852), (38, 78924), (42, 78948), (49, 78999),

Gene: Pharb_57 Start: 40007, Stop: 40276, Start Num: 21
Candidate Starts for Pharb_57:
(Start: 21 @40007 has 99 MA's), (32, 40118), (34, 40139), (58, 40265),

Gene: Piatt_58 Start: 40855, Stop: 41121, Start Num: 21
Candidate Starts for Piatt_58:
(11, 40813), (Start: 21 @40855 has 99 MA's), (25, 40900), (36, 40996), (39, 41014), (51, 41068), (53, 41086), (54, 41098), (58, 41110),

Gene: Pisa1_58 Start: 41518, Stop: 41784, Start Num: 21
Candidate Starts for Pisa1_58:
(2, 41320), (11, 41476), (Start: 21 @41518 has 99 MA's), (25, 41563), (36, 41659), (51, 41731), (53, 41749), (54, 41761), (58, 41773),

Gene: Pisa4_52 Start: 36887, Stop: 37153, Start Num: 21
Candidate Starts for Pisa4_52:
(2, 36689), (11, 36845), (Start: 21 @36887 has 99 MA's), (25, 36932), (36, 37028), (51, 37100), (53, 37118), (54, 37130), (58, 37142),

Gene: Pixie_57 Start: 40343, Stop: 40612, Start Num: 21
Candidate Starts for Pixie_57:
(11, 40304), (Start: 21 @40343 has 99 MA's), (25, 40388), (32, 40454), (34, 40475), (51, 40559), (58, 40601),

Gene: Pokerus_57 Start: 40585, Stop: 40851, Start Num: 21
Candidate Starts for Pokerus_57:
(11, 40543), (Start: 21 @40585 has 99 MA's), (25, 40630), (36, 40726), (39, 40744), (51, 40798), (53, 40816), (54, 40828), (58, 40840),

Gene: Prithvi_59 Start: 40742, Stop: 41008, Start Num: 21
Candidate Starts for Prithvi_59:
(11, 40700), (Start: 21 @40742 has 99 MA's), (25, 40787), (36, 40883), (51, 40955), (53, 40973), (54, 40985), (58, 40997),

Gene: QuincyRose_57 Start: 40919, Stop: 41185, Start Num: 21
Candidate Starts for QuincyRose_57:
(11, 40877), (Start: 21 @40919 has 99 MA's), (25, 40964), (36, 41060), (39, 41078), (51, 41132), (53, 41150), (54, 41162), (58, 41174),

Gene: Rabbitrun_110 Start: 63382, Stop: 63696, Start Num: 16
Candidate Starts for Rabbitrun_110:
(6, 63274), (12, 63358), (Start: 14 @63364 has 2 MA's), (Start: 16 @63382 has 1 MA's), (34, 63529), (45, 63607), (52, 63652), (55, 63673), (56, 63679),

Gene: Ramen_59 Start: 40541, Stop: 40807, Start Num: 21
Candidate Starts for Ramen_59:
(11, 40499), (Start: 21 @40541 has 99 MA's), (25, 40586), (36, 40682), (51, 40754), (53, 40772), (54, 40784), (58, 40796),

Gene: Rapunzel97_59 Start: 40534, Stop: 40800, Start Num: 21

Candidate Starts for Rapunzel97_59:
(11, 40492), (Start: 21 @40534 has 99 MA's), (25, 40579), (36, 40675), (39, 40693), (51, 40747), (53, 40765), (54, 40777), (58, 40789),

Gene: Rosmarinus_58 Start: 40646, Stop: 40912, Start Num: 21
Candidate Starts for Rosmarinus_58:
(11, 40604), (Start: 21 @40646 has 99 MA's), (36, 40787), (39, 40805), (51, 40859), (53, 40877), (54, 40889), (58, 40901),

Gene: SamuelLPlaqson_59 Start: 41439, Stop: 41705, Start Num: 21
Candidate Starts for SamuelLPlaqson_59:
(11, 41397), (Start: 21 @41439 has 99 MA's), (25, 41484), (36, 41580), (51, 41652), (53, 41670), (54, 41682), (58, 41694),

Gene: Sephiroth_108 Start: 61495, Stop: 61812, Start Num: 18
Candidate Starts for Sephiroth_108:
(Start: 18 @61495 has 3 MA's), (28, 61594), (29, 61597), (33, 61621), (35, 61636), (43, 61693), (45, 61717),

Gene: ShedlockHolmes_59 Start: 40862, Stop: 41131, Start Num: 21
Candidate Starts for ShedlockHolmes_59:
(2, 40667), (11, 40823), (Start: 21 @40862 has 99 MA's), (25, 40907), (32, 40973), (34, 40994), (58, 41120),

Gene: ShiaSurprise_59 Start: 40855, Stop: 41121, Start Num: 21
Candidate Starts for ShiaSurprise_59:
(11, 40813), (Start: 21 @40855 has 99 MA's), (25, 40900), (36, 40996), (39, 41014), (51, 41068), (53, 41086), (54, 41098), (58, 41110),

Gene: SirPhilip_59 Start: 41271, Stop: 41540, Start Num: 21
Candidate Starts for SirPhilip_59:
(2, 41073), (4, 41124), (Start: 21 @41271 has 99 MA's), (25, 41316), (27, 41343), (34, 41403), (58, 41529),

Gene: Sixama_38 Start: 12651, Stop: 12286, Start Num: 21
Candidate Starts for Sixama_38:
(8, 12729), (Start: 14 @12684 has 2 MA's), (Start: 21 @12651 has 99 MA's), (25, 12606), (26, 12585), (45, 12429), (60, 12339), (62, 12312),

Gene: Slimphazie_58 Start: 40534, Stop: 40800, Start Num: 21
Candidate Starts for Slimphazie_58:
(11, 40492), (Start: 21 @40534 has 99 MA's), (25, 40579), (36, 40675), (39, 40693), (51, 40747), (53, 40765), (54, 40777), (58, 40789),

Gene: Spock_58 Start: 40659, Stop: 40925, Start Num: 21
Candidate Starts for Spock_58:
(11, 40617), (Start: 21 @40659 has 99 MA's), (36, 40800), (39, 40818), (51, 40872), (53, 40890), (54, 40902), (58, 40914),

Gene: Stinson_59 Start: 41036, Stop: 41302, Start Num: 21
Candidate Starts for Stinson_59:
(Start: 21 @41036 has 99 MA's), (25, 41081), (36, 41177), (40, 41201), (51, 41249), (53, 41267), (54, 41279), (58, 41291),

Gene: Sulley_58 Start: 40710, Stop: 40976, Start Num: 21
Candidate Starts for Sulley_58:
(11, 40668), (Start: 21 @40710 has 99 MA's), (25, 40755), (36, 40851), (51, 40923), (53, 40941), (54, 40953), (58, 40965),

Gene: Syleon_113 Start: 62277, Stop: 62594, Start Num: 18
Candidate Starts for Syleon_113:
(Start: 18 @62277 has 3 MA's), (23, 62298), (45, 62499),

Gene: TBond007_56 Start: 40342, Stop: 40611, Start Num: 21
Candidate Starts for TBond007_56:
(11, 40303), (Start: 21 @40342 has 99 MA's), (25, 40387), (32, 40453), (34, 40474), (58, 40600),

Gene: Tachez_58 Start: 40503, Stop: 40769, Start Num: 21
Candidate Starts for Tachez_58:
(11, 40461), (Start: 21 @40503 has 99 MA's), (25, 40548), (36, 40644), (39, 40662), (51, 40716), (53, 40734), (54, 40746), (58, 40758),

Gene: TaiwanKao_60 Start: 40804, Stop: 41070, Start Num: 21
Candidate Starts for TaiwanKao_60:
(11, 40762), (Start: 21 @40804 has 99 MA's), (25, 40849), (36, 40945), (51, 41017), (53, 41035), (54, 41047), (58, 41059),

Gene: TingHuaYa_60 Start: 39863, Stop: 40129, Start Num: 21
Candidate Starts for TingHuaYa_60:
(Start: 21 @39863 has 99 MA's), (25, 39908), (36, 40004), (51, 40076), (53, 40094), (54, 40106), (58, 40118),

Gene: TiniBug_59 Start: 41435, Stop: 41701, Start Num: 21
Candidate Starts for TiniBug_59:
(11, 41393), (Start: 21 @41435 has 99 MA's), (25, 41480), (36, 41576), (51, 41648), (53, 41666), (54, 41678), (58, 41690),

Gene: Tiri_59 Start: 40824, Stop: 41090, Start Num: 21
Candidate Starts for Tiri_59:
(11, 40782), (Start: 21 @40824 has 99 MA's), (25, 40869), (36, 40965), (39, 40983), (47, 41022), (51, 41037), (53, 41055), (54, 41067), (58, 41079),

Gene: Topper_58 Start: 40658, Stop: 40924, Start Num: 21
Candidate Starts for Topper_58:
(11, 40616), (Start: 21 @40658 has 99 MA's), (36, 40799), (39, 40817), (51, 40871), (53, 40889), (54, 40901), (58, 40913),

Gene: Trax_110 Start: 63415, Stop: 63750, Start Num: 14
Candidate Starts for Trax_110:
(9, 63385), (Start: 14 @63415 has 2 MA's), (Start: 16 @63433 has 1 MA's), (29, 63544), (34, 63580), (45, 63661), (50, 63694), (52, 63706), (56, 63733),

Gene: TreyKay_59 Start: 40742, Stop: 41008, Start Num: 21
Candidate Starts for TreyKay_59:
(11, 40700), (Start: 21 @40742 has 99 MA's), (25, 40787), (36, 40883), (51, 40955), (53, 40973), (54, 40985), (58, 40997),

Gene: TribleTrouble_57 Start: 40818, Stop: 41087, Start Num: 21
Candidate Starts for TribleTrouble_57:
(Start: 21 @40818 has 99 MA's), (25, 40863), (32, 40929), (34, 40950), (58, 41076),

Gene: TruffulaTree_58 Start: 40530, Stop: 40796, Start Num: 21
Candidate Starts for TruffulaTree_58:
(11, 40488), (Start: 21 @40530 has 99 MA's), (25, 40575), (36, 40671), (39, 40689), (51, 40743), (53, 40761), (54, 40773), (58, 40785),

Gene: Twitch_58 Start: 40660, Stop: 40926, Start Num: 21
Candidate Starts for Twitch_58:
(11, 40618), (Start: 21 @40660 has 99 MA's), (25, 40705), (36, 40801), (39, 40819), (51, 40873), (53, 40891), (54, 40903), (58, 40915),

Gene: Urkel_59 Start: 41439, Stop: 41705, Start Num: 21
Candidate Starts for Urkel_59:
(11, 41397), (Start: 21 @41439 has 99 MA's), (25, 41484), (36, 41580), (51, 41652), (53, 41670), (54, 41682), (58, 41694),

Gene: Veliki_59 Start: 40516, Stop: 40782, Start Num: 21
Candidate Starts for Veliki_59:
(11, 40474), (Start: 21 @40516 has 99 MA's), (25, 40561), (36, 40657), (51, 40729), (53, 40747), (54, 40759), (58, 40771),

Gene: Weasels2_136 Start: 80031, Stop: 80330, Start Num: 22
Candidate Starts for Weasels2_136:
(17, 80022), (Start: 22 @80031 has 1 MA's), (44, 80229),

Gene: YoureAdopted_57 Start: 40659, Stop: 40925, Start Num: 21
Candidate Starts for YoureAdopted_57:
(11, 40617), (Start: 21 @40659 has 99 MA's), (36, 40800), (39, 40818), (51, 40872), (53, 40890), (54, 40902), (58, 40914),

Gene: Yuna_63 Start: 41860, Stop: 42126, Start Num: 20
Candidate Starts for Yuna_63:
(7, 41767), (Start: 20 @41860 has 2 MA's), (Start: 21 @41863 has 99 MA's), (25, 41908), (29, 41959), (34, 41989), (58, 42115),

Gene: Yunkel11_61 Start: 40355, Stop: 40621, Start Num: 21
Candidate Starts for Yunkel11_61:
(3, 40160), (Start: 21 @40355 has 99 MA's), (25, 40400), (36, 40496), (53, 40586), (54, 40598), (58, 40610),

Gene: Zabiza_53 Start: 36844, Stop: 37110, Start Num: 21
Candidate Starts for Zabiza_53:
(11, 36802), (Start: 21 @36844 has 99 MA's), (25, 36889), (36, 36985), (51, 37057), (53, 37075), (54, 37087), (58, 37099),

Gene: Zavala_60 Start: 40815, Stop: 41081, Start Num: 21
Candidate Starts for Zavala_60:
(11, 40773), (Start: 21 @40815 has 99 MA's), (25, 40860), (36, 40956), (51, 41028), (53, 41046), (54, 41058), (58, 41070),