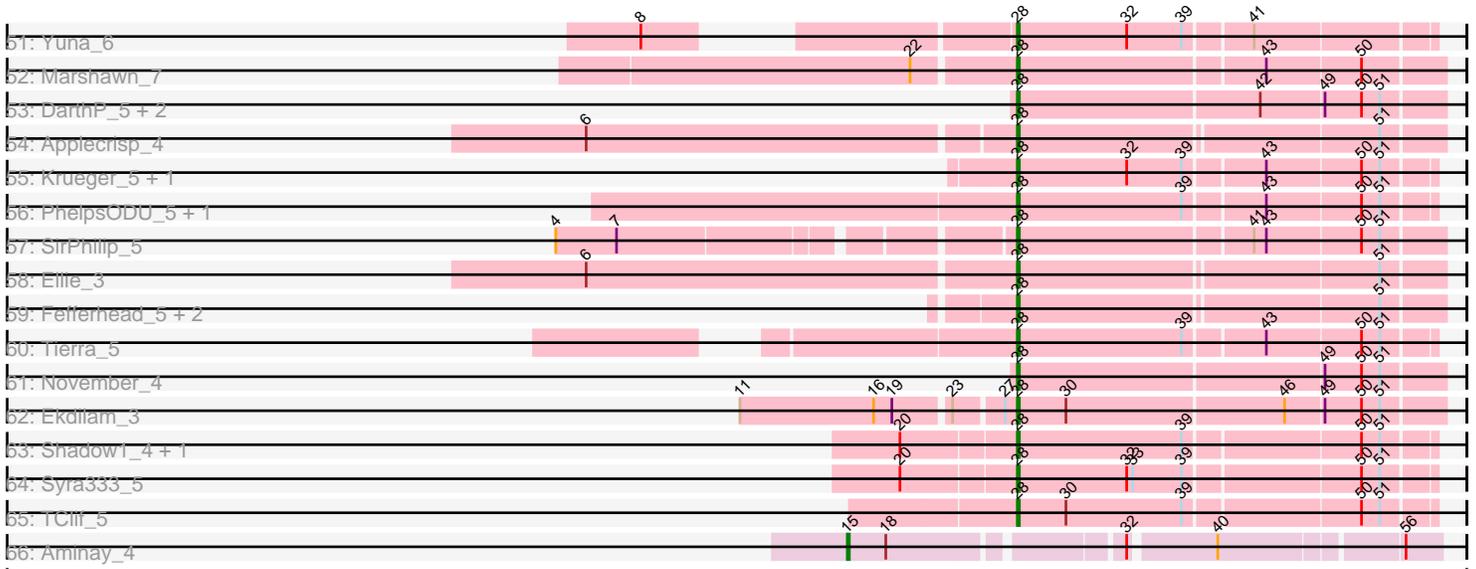# Pham 289110

Pham 289110

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 289110 Report

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

Pham number 289110 has 189 members, 16 are drafts.

Phages represented in each track:
• Track 1 : Atiba_6, Pokerus_5, Apocalypse_6, Tachez_6
• Track 2 : Megsy_6, CrimD_6
• Track 3 : Oscar_5, LeMond_5
• Track 4 : Curiosium_7
• Track 5 : Ganymede_6, Capricorn_6, Durfee_6, Blizzard_6, Homura_6, ShiaSurprise_6, Boiiii_6, Inky_6, Lunahalos_6, MacKat_6, Belladonna_6, CheetoDust_6, Topper_6, Piatt_6, Veliki_6, Dalmuri_6, BGlluviae_6, Jarvi_6, Llorens_6, QuincyRose_5, Clipper_6, Hyperbowlee_6, Jeckyll_6, Rosmarinus_6, Asayake_6, CREW_6, BEEST_6, Padfoot_6, Spock_6, CaseJules_6
• Track 6 : SgtBeansprout_2, Nutello_2, Trice_2, Enkosi_2, Torres_2, Teejan_2, Mdavu_2, Amelie_2, Nikao_2, LilPharaoh_2, Biglebops_2
• Track 7 : TruffulaTree_6, JAWS_6, BarrelRoll_6, Adephagia_6, Slimphazie_6, CallaLilly_6, Emerson_6, Padpat_6, Joy99_6, YoureAdopted_5, Zabiza_6, HedwigODU_6, AlishaPH_6, BaghaKamala_6, Jayhawk_6, MeaningOfLife_6, ActinUp_6, Zavala_6, Rapunzel97_6, Ramen_6
• Track 8 : Ageofdapage_6
• Track 9 : Pisa4_5, Pisa1_5
• Track 10 : Prithvi_6, LindNT_6, TreyKay_6
• Track 11 : Devera_6, Illumine_6, Dole_6
• Track 12 : Adonis_6, Tiri_6
• Track 13 : LastHope_6
• Track 14 : Deby_6, Angelica_6, Sulley_6
• Track 15 : Chavito_6
• Track 16 : Beezoo_6, Geraldini_6
• Track 17 : KiSi_5
• Track 18 : Scarlett_5
• Track 19 : Anaya_7
• Track 20 : Dartin_6, Niklas_6, McMater_6, Shaobing_6, Peanam_6, Richo_6
• Track 21 : Urkel_6, DrHayes_6, Anma_6, TiniBug_6, SamuelLPlaqson_6
• Track 22 : DartGoblin_6, Bella96_6
• Track 23 : Murucutumbu_6
• Track 24 : Chris_5
• Track 25 : Nibb_5
• Track 26 : Twitch_6, Mynx_6, Peel_6
• Track 27 : Validus_6
• Track 28 : MarkPhew_5
• Track 29 : LaterM_6, Stinson_6

• Track 30 : Bern_6
• Track 31 : Guanica15_6, Yunkel11_6
• Track 32 : TingHuaYa_6
• Track 33 : TaiwanKao_6
• Track 34 : Efra2_6
• Track 35 : Strobilo_2, Marcoliusprime_2, Doughnut_2, DismalFunk_2, Mufasa_2, BoostSeason_2, Milly_2, DismalStressor_2
• Track 36 : Findley_2
• Track 37 : ZoeJ_2
• Track 38 : TM4_2
• Track 39 : TribleTrouble_4
• Track 40 : Keshu_5, Hurricane_5, ShedlockHolmes_5, Lea83_5
• Track 41 : MacnCheese_6
• Track 42 : TBond007_5, Pixie_5
• Track 43 : Pharb_5
• Track 44 : Eponine_7, Juliette_7
• Track 45 : Malthus_7, DanSyl44_7, Y10_07, Kraw_7, Wintermute_7, Taquito_5, Lebo14_7, Y2_07, OmniCritical_7, Fionnbharth_7, Mitti_7, SamScheppers_5, JF1_7, YasnayaPolyana_7
• Track 46 : Chancellor_7, Cheetobro_7, Qhanda_7, Slarp_7
• Track 47 : MissDaisy_7
• Track 48 : Ruthiejr_6
• Track 49 : Bryler_5, Cain_5, Phrank_5
• Track 50 : Ximenita_6
• Track 51 : Yuna_6
• Track 52 : Marshawn_7
• Track 53 : DarthP_5, Amohnition_5, Hammy_5
• Track 54 : Applecrisp_4
• Track 55 : Krueger_5, Tigress9_5
• Track 56 : PhelpsODU_5, Unicorn_5
• Track 57 : SirPhilip_5
• Track 58 : Ellie_3
• Track 59 : Fefferhead_5, Lavahound_4, Amgine_4
• Track 60 : Tierra_5
• Track 61 : November_4
• Track 62 : Ekdilam_3
• Track 63 : Shadow1_4, Sunflower1121_4
• Track 64 : Syra333_5
• Track 65 : TClif_5
• Track 66 : Aminay_4

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 149 of the 173 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• ActinUp_6, Adephagia_6, Adonis_6, Ageofdapage_6, AlishaPH_6, Amelie_2, Amgine_4, Amohnition_5, Anaya_7, Angelica_6, Anma_6, Apocalypse_6, Applecrisp_4, Asayake_6, Atiba_6, BEEST_6, BGIluviae_6, BaghaKamala_6,

BarrelRoll_6, Beezoo_6, Bella96_6, Belladonna_6, Bern_6, Biglebops_2, Blizzard_6, Boiiii_6, BoostSeason_2, Bryler_5, CREW_6, Cain_5, CallaLilly_6, Capricorn_6, CaseJules_6, Chavito_6, CheetoDust_6, Chris_5, Clipper_6, CrimD_6, Curiosium_7, Dalmuri_6, DartGoblin_6, DarthP_5, Dartin_6, Deby_6, Devera_6, DismalFunk_2, DismalStressor_2, Dole_6, Doughnut_2, DrHayes_6, Durfee_6, Efra2_6, Ekdilam_3, Ellie_3, Emerson_6, Enkosi_2, Fefferhead_5, Findley_2, Ganymede_6, Geraldini_6, Guanica15_6, Hammy_5, HedwigODU_6, Homura_6, Hurricane_5, Hyperbowlee_6, Illumine_6, Inky_6, JAWS_6, Jarvi_6, Jayhawk_6, Jeckyll_6, Joy99_6, Keshu_5, KiSi_5, Krueger_5, LastHope_6, LaterM_6, Lavahound_4, LeMond_5, Lea83_5, LilPharaoh_2, LindNT_6, Llorens_6, Lunahalos_6, MacKat_6, MacnCheese_6, Marcoliusprime_2, MarkPhew_5, Marshawn_7, McMater_6, Mdavu_2, MeaningOfLife_6, Megsy_6, Milly_2, Mufasa_2, Murucutumbu_6, Nibb_5, Nikao_2, Niklas_6, November_4, Nutello_2, Oscar_5, Padfoot_6, Padpat_6, Peanam_6, Pharb_5, PhelpsODU_5, Phrank_5, Piatt_6, Pisa1_5, Pisa4_5, Pixie_5, Pokerus_5, Prithvi_6, QuincyRose_5, Ramen_6, Rapunzel97_6, Richo_6, Rosmarinus_6, SamuelLPlaqson_6, Scarlett_5, SgtBeansprout_2, Shadow1_4, Shaobing_6, ShedlockHolmes_5, ShiaSurprise_6, SirPhilip_5, Slimphazie_6, Spock_6, Stinson_6, Strobilo_2, Sulley_6, Sunflower1121_4, Syra333_5, TBond007_5, TClif_5, TM4_2, Tachez_6, Teejan_2, Tierra_5, Tigress9_5, TingHuaYa_6, TiniBug_6, Tiri_6, Topper_6, Torres_2, TreyKay_6, TribleTrouble_4, Trice_2, TruffulaTree_6, Unicorn_5, Urkel_6, Validus_6, Veliki_6, Ximenita_6, YoureAdopted_5, Yuna_6, Yunkel11_6, Zabiza_6, Zavala_6, ZoeJ_2,

Genes that have the "Most Annotated" start but do not call it:
• Mynx_6, Peel_6, TaiwanKao_6, Twitch_6,

Genes that do not have the "Most Annotated" start:
• Aminay_4, Chancellor_7, Cheetobro_7, DanSyl44_7, Eponine_7, Fionnbharth_7, JF1_7, Juliette_7, Kraw_7, Lebo14_7, Malthus_7, MissDaisy_7, Mitti_7, OmniCritical_7, Qhanda_7, Ruthiejr_6, SamScheppers_5, Slarp_7, Taquito_5, Wintermute_7, Y10_07, Y2_07, YasnayaPolyana_7,

Summary by start number:

Start 15:
• Found in 1 of 189 (0.5%) of genes in pham
• Manual Annotations of this start: 1 of 173
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aminay_4 (K7),

Start 21:
• Found in 22 of 189 (11.6%) of genes in pham
• Manual Annotations of this start: 20 of 173
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Chancellor_7 (K4), Cheetobro_7 (K4), DanSyl44_7 (K4), Eponine_7 (K4), Fionnbharth_7 (K4), JF1_7 (K4), Juliette_7 (K4), Kraw_7 (K4), Lebo14_7 (K4), Malthus_7 (K4), MissDaisy_7 (K4), Mitti_7 (K4), OmniCritical_7 (K4), Qhanda_7 (K4), Ruthiejr_6 (K4), SamScheppers_5 (K4), Slarp_7 (K4), Taquito_5 (K4), Wintermute_7 (K4), Y10_07 (K4), Y2_07 (K4), YasnayaPolyana_7 (K4),

Start 27:
• Found in 103 of 189 (54.5%) of genes in pham

• Manual Annotations of this start: 3 of 173
• Called 3.9% of time when present
• Phage (with cluster) where this start called: Mynx_6 (K1), Peel_6 (K1), TaiwanKao_6 (K1), Twitch_6 (K1),

Start 28:
• Found in 166 of 189 (87.8%) of genes in pham
• Manual Annotations of this start: 149 of 173
• Called 97.6% of time when present
• Phage (with cluster) where this start called: ActinUp_6 (K1), Adephagia_6 (K1), Adonis_6 (K1), Ageofdapage_6 (K1), AlishaPH_6 (K1), Amelie_2 (K1), Amgine_4 (K6), Amohnition_5 (K6), Anaya_7 (K1), Angelica_6 (K1), Anma_6 (K1), Apocalypse_6 (K1), Applecrisp_4 (K6), Asayake_6 (K1), Atiba_6 (K1), BEEST_6 (K1), BGlluviae_6 (K1), BaghaKamala_6 (K1), BarrelRoll_6 (K1), Beezoo_6 (K1), Bella96_6 (K1), Belladonna_6 (K1), Bern_6 (K1), Biglebops_2 (K1), Blizzard_6 (K1), Boiiii_6 (K1), BoostSeason_2 (K2), Bryler_5 (K6), CREW_6 (K1), Cain_5 (K6), CallaLilly_6 (K1), Capricorn_6 (K1), CaseJules_6 (K1), Chavito_6 (K1), CheetoDust_6 (K1), Chris_5 (K1), Clipper_6 (K1), CrimD_6 (K1), Curiosium_7 (K1), Dalmuri_6 (K1), DartGoblin_6 (K1), DarthP_5 (K6), Dartin_6 (K1), Deby_6 (K1), Devera_6 (K1), DismalFunk_2 (K2), DismalStressor_2 (K2), Dole_6 (K1), Doughnut_2 (K2), DrHayes_6 (K1), Durfee_6 (K1), Efra2_6 (K1), Ekdilam_3 (K6), Ellie_3 (K6), Emerson_6 (K1), Enkosi_2 (K1), Fefferhead_5 (K6), Findley_2 (K2), Ganymede_6 (K1), Geraldini_6 (K1), Guanica15_6 (K1), Hammy_5 (K6), HedwigODU_6 (K1), Homura_6 (K1), Hurricane_5 (K3), Hyperbowlee_6 (K1), Illumine_6 (K1), Inky_6 (K1), JAWS_6 (K1), Jarvi_6 (K1), Jayhawk_6 (K1), Jeckyll_6 (K1), Joy99_6 (K1), Keshu_5 (K3), KiSi_5 (K1), Krueger_5 (K6), LastHope_6 (K1), LaterM_6 (K1), Lavahound_4 (K6), LeMond_5 (K1), Lea83_5 (K3), LilPharaoh_2 (K1), LindNT_6 (K1), Llorens_6 (K1), Lunahalos_6 (K1), MacKat_6 (K1), MacnCheese_6 (K3), Marcoliusprime_2 (K2), MarkPhew_5 (K1), Marshawn_7 (K6), McMater_6 (K1), Mdavu_2 (K1), MeaningOfLife_6 (K1), Megsy_6 (K1), Milly_2 (K2), Mufasa_2 (K2), Murucutumbu_6 (K1), Nibb_5 (K1), Nikao_2 (K1), Niklas_6 (K1), November_4 (K6), Nutello_2 (K1), Oscar_5 (K1), Padfoot_6 (K1), Padpat_6 (K1), Peanam_6 (K1), Pharb_5 (K3), PhelpsODU_5 (K6), Phrank_5 (K6), Piatt_6 (K1), Pisa1_5 (K1), Pisa4_5 (K1), Pixie_5 (K3), Pokerus_5 (K1), Prithvi_6 (K1), QuincyRose_5 (K1), Ramen_6 (K1), Rapunzel97_6 (K1), Richo_6 (K1), Rosmarinus_6 (K1), SamuelLPlaqson_6 (K1), Scarlett_5 (K1), SgtBeansprout_2 (K1), Shadow1_4 (K6), Shaobing_6 (K1), ShedlockHolmes_5 (K3), ShiaSurprise_6 (K1), SirPhilip_5 (K6), Slimphazie_6 (K1), Spock_6 (K1), Stinson_6 (K1), Strobilo_2 (K2), Sulley_6 (K1), Sunflower1121_4 (K6), Syra333_5 (K6), TBond007_5 (K3), TClif_5 (K6), TM4_2 (K2), Tachez_6 (K1), Teejan_2 (K1), Tierra_5 (K6), Tigress9_5 (K6), TingHuaYa_6 (K1), TiniBug_6 (K1), Tiri_6 (K1), Topper_6 (K1), Torres_2 (K1), TreyKay_6 (K1), TribleTrouble_4 (K3), Trice_2 (K1), TruffulaTree_6 (K1), Unicorn_5 (K6), Urkel_6 (K1), Validus_6 (K1), Veliki_6 (K1), Ximenita_6 (K6), YoureAdopted_5 (K1), Yuna_6 (K6), Yunkel11_6 (K1), Zabiza_6 (K1), Zavala_6 (K1), ZoeJ_2 (K2),

Summary by clusters:

There are 6 clusters represented in this pham: K3, K2, K1, K7, K6, K4,

Info for manual annotations of cluster K1:
•Start number 27 was manually annotated 3 times for cluster K1.
•Start number 28 was manually annotated 105 times for cluster K1.

Info for manual annotations of cluster K2:
•Start number 28 was manually annotated 11 times for cluster K2.

Info for manual annotations of cluster K3:
•Start number 28 was manually annotated 9 times for cluster K3.

Info for manual annotations of cluster K4:
•Start number 21 was manually annotated 20 times for cluster K4.

Info for manual annotations of cluster K6:
•Start number 28 was manually annotated 24 times for cluster K6.

Info for manual annotations of cluster K7:
•Start number 15 was manually annotated 1 time for cluster K7.

Gene Information:

Gene: ActinUp_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for ActinUp_6:
(Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (47, 1312), (50, 1342), (51, 1351),

Gene: Adephagia_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for Adephagia_6:
(Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (47, 1312), (50, 1342), (51, 1351),

Gene: Adonis_6 Start: 1197, Stop: 1400, Start Num: 28
Candidate Starts for Adonis_6:
(3, 984), (Start: 27 @1191 has 3 MA's), (Start: 28 @1197 has 149 MA's), (37, 1272), (41, 1308), (43, 1314), (47, 1329), (50, 1359), (51, 1368),

Gene: Ageofdapage_6 Start: 1129, Stop: 1332, Start Num: 28
Candidate Starts for Ageofdapage_6:
(1, 679), (2, 808), (Start: 27 @1123 has 3 MA's), (Start: 28 @1129 has 149 MA's), (37, 1204), (41, 1240), (43, 1246), (47, 1261), (49, 1273), (50, 1291), (51, 1300),

Gene: AlishaPH_6 Start: 1185, Stop: 1388, Start Num: 28
Candidate Starts for AlishaPH_6:
(Start: 27 @1179 has 3 MA's), (Start: 28 @1185 has 149 MA's), (41, 1296), (43, 1302), (47, 1317), (50, 1347), (51, 1356),

Gene: Amelie_2 Start: 443, Stop: 643, Start Num: 28
Candidate Starts for Amelie_2:
(Start: 28 @443 has 149 MA's), (30, 467), (43, 560), (50, 605), (51, 614),

Gene: Amgine_4 Start: 777, Stop: 977, Start Num: 28
Candidate Starts for Amgine_4:
(Start: 28 @777 has 149 MA's), (51, 948),

Gene: Aminay_4 Start: 820, Stop: 1077, Start Num: 15

Candidate Starts for Aminay_4:
(Start: 15 @820 has 1 MA's), (18, 838), (32, 940), (40, 979), (56, 1060),

Gene: Amohnition_5 Start: 980, Stop: 1183, Start Num: 28
Candidate Starts for Amohnition_5:
(Start: 28 @980 has 149 MA's), (42, 1097), (49, 1127), (50, 1145), (51, 1154),

Gene: Anaya_7 Start: 1212, Stop: 1412, Start Num: 28
Candidate Starts for Anaya_7:
(9, 1050), (Start: 27 @1206 has 3 MA's), (Start: 28 @1212 has 149 MA's), (41, 1323), (43, 1329), (50, 1374), (51, 1383),

Gene: Angelica_6 Start: 1171, Stop: 1371, Start Num: 28
Candidate Starts for Angelica_6:
(9, 1009), (Start: 27 @1165 has 3 MA's), (Start: 28 @1171 has 149 MA's), (41, 1282), (43, 1288), (50, 1333),

Gene: Anma_6 Start: 1162, Stop: 1362, Start Num: 28
Candidate Starts for Anma_6:
(Start: 27 @1156 has 3 MA's), (Start: 28 @1162 has 149 MA's), (41, 1273), (43, 1279), (47, 1294), (49, 1306), (50, 1324),

Gene: Apocalypse_6 Start: 1164, Stop: 1367, Start Num: 28
Candidate Starts for Apocalypse_6:
(Start: 27 @1158 has 3 MA's), (Start: 28 @1164 has 149 MA's), (41, 1275), (43, 1281), (47, 1296), (50, 1326), (51, 1335),

Gene: Applecrisp_4 Start: 1136, Stop: 1336, Start Num: 28
Candidate Starts for Applecrisp_4:
(6, 932), (Start: 28 @1136 has 149 MA's), (51, 1307),

Gene: Asayake_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Asayake_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Atiba_6 Start: 1149, Stop: 1352, Start Num: 28
Candidate Starts for Atiba_6:
(Start: 27 @1143 has 3 MA's), (Start: 28 @1149 has 149 MA's), (41, 1260), (43, 1266), (47, 1281), (50, 1311), (51, 1320),

Gene: BEEST_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for BEEST_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: BGlluviae_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for BGlluviae_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: BaghaKamala_6 Start: 1156, Stop: 1359, Start Num: 28
Candidate Starts for BaghaKamala_6:

(Start: 27 @1150 has 3 MA's), (Start: 28 @1156 has 149 MA's), (41, 1267), (43, 1273), (47, 1288), (50, 1318), (51, 1327),

Gene: BarrelRoll_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for BarrelRoll_6:
(Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (47, 1312), (50, 1342), (51, 1351),

Gene: Beezoo_6 Start: 1209, Stop: 1412, Start Num: 28
Candidate Starts for Beezoo_6:
(9, 1047), (Start: 27 @1203 has 3 MA's), (Start: 28 @1209 has 149 MA's), (41, 1320), (43, 1326), (47, 1341), (50, 1371), (51, 1380),

Gene: Bella96_6 Start: 1141, Stop: 1341, Start Num: 28
Candidate Starts for Bella96_6:
(Start: 27 @1135 has 3 MA's), (Start: 28 @1141 has 149 MA's), (41, 1252), (43, 1258), (47, 1273), (49, 1285), (50, 1303),

Gene: Belladonna_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Belladonna_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Bern_6 Start: 1179, Stop: 1379, Start Num: 28
Candidate Starts for Bern_6:
(3, 966), (Start: 27 @1173 has 3 MA's), (Start: 28 @1179 has 149 MA's), (41, 1290), (43, 1296), (47, 1311), (49, 1323), (50, 1341),

Gene: Biglebops_2 Start: 443, Stop: 643, Start Num: 28
Candidate Starts for Biglebops_2:
(Start: 28 @443 has 149 MA's), (30, 467), (43, 560), (50, 605), (51, 614),

Gene: Blizzard_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Blizzard_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Boiiii_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Boiiii_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: BoostSeason_2 Start: 224, Stop: 436, Start Num: 28
Candidate Starts for BoostSeason_2:
(25, 200), (Start: 28 @224 has 149 MA's), (30, 248), (38, 302), (43, 341), (45, 347), (58, 419),

Gene: Bryler_5 Start: 1083, Stop: 1277, Start Num: 28
Candidate Starts for Bryler_5:
(8, 936), (14, 975), (Start: 28 @1083 has 149 MA's), (39, 1164), (43, 1200), (50, 1245), (51, 1254),

Gene: CREW_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for CREW_6:

(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Cain_5 Start: 1083, Stop: 1277, Start Num: 28
Candidate Starts for Cain_5:
(8, 936), (14, 975), (Start: 28 @1083 has 149 MA's), (39, 1164), (43, 1200), (50, 1245), (51, 1254),

Gene: CallaLilly_6 Start: 1156, Stop: 1359, Start Num: 28
Candidate Starts for CallaLilly_6:
(Start: 27 @1150 has 3 MA's), (Start: 28 @1156 has 149 MA's), (41, 1267), (43, 1273), (47, 1288), (50, 1318), (51, 1327),

Gene: Capricorn_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Capricorn_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: CaseJules_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for CaseJules_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Chancellor_7 Start: 1998, Stop: 2237, Start Num: 21
Candidate Starts for Chancellor_7:
(Start: 21 @1998 has 20 MA's), (32, 2094), (35, 2100), (36, 2106), (40, 2136), (44, 2160), (48, 2184), (52, 2214), (55, 2220),

Gene: Chavito_6 Start: 1257, Stop: 1457, Start Num: 28
Candidate Starts for Chavito_6:
(Start: 27 @1251 has 3 MA's), (Start: 28 @1257 has 149 MA's), (30, 1281), (43, 1374), (47, 1389), (50, 1419), (51, 1428),

Gene: CheetoDust_6 Start: 1206, Stop: 1409, Start Num: 28
Candidate Starts for CheetoDust_6:
(3, 993), (Start: 27 @1200 has 3 MA's), (Start: 28 @1206 has 149 MA's), (41, 1317), (43, 1323), (47, 1338), (50, 1368), (51, 1377),

Gene: Cheetobro_7 Start: 1998, Stop: 2237, Start Num: 21
Candidate Starts for Cheetobro_7:
(Start: 21 @1998 has 20 MA's), (32, 2094), (35, 2100), (36, 2106), (40, 2136), (44, 2160), (48, 2184), (52, 2214), (55, 2220),

Gene: Chris_5 Start: 1121, Stop: 1324, Start Num: 28
Candidate Starts for Chris_5:
(Start: 28 @1121 has 149 MA's), (37, 1196), (41, 1235), (43, 1241), (46, 1250), (51, 1295),

Gene: Clipper_6 Start: 1206, Stop: 1409, Start Num: 28
Candidate Starts for Clipper_6:
(3, 993), (Start: 27 @1200 has 3 MA's), (Start: 28 @1206 has 149 MA's), (41, 1317), (43, 1323), (47, 1338), (50, 1368), (51, 1377),

Gene: CrimD_6 Start: 1155, Stop: 1358, Start Num: 28
Candidate Starts for CrimD_6:

(Start: 27 @1149 has 3 MA's), (Start: 28 @1155 has 149 MA's), (41, 1266), (43, 1272), (47, 1287), (49, 1299), (50, 1317), (51, 1326),

Gene: Curiosium_7 Start: 1537, Stop: 1740, Start Num: 28
Candidate Starts for Curiosium_7:
(Start: 27 @1531 has 3 MA's), (Start: 28 @1537 has 149 MA's), (37, 1612), (47, 1669), (51, 1708),

Gene: Dalmuri_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Dalmuri_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: DanSyl44_7 Start: 1998, Stop: 2237, Start Num: 21
Candidate Starts for DanSyl44_7:
(Start: 21 @1998 has 20 MA's), (24, 2022), (32, 2094), (35, 2100), (36, 2106), (40, 2136), (44, 2160), (48, 2184), (52, 2214), (55, 2220),

Gene: DartGoblin_6 Start: 1141, Stop: 1341, Start Num: 28
Candidate Starts for DartGoblin_6:
(Start: 27 @1135 has 3 MA's), (Start: 28 @1141 has 149 MA's), (41, 1252), (43, 1258), (47, 1273), (49, 1285), (50, 1303),

Gene: DarthP_5 Start: 980, Stop: 1183, Start Num: 28
Candidate Starts for DarthP_5:
(Start: 28 @980 has 149 MA's), (42, 1097), (49, 1127), (50, 1145), (51, 1154),

Gene: Dartin_6 Start: 1256, Stop: 1456, Start Num: 28
Candidate Starts for Dartin_6:
(Start: 27 @1250 has 3 MA's), (Start: 28 @1256 has 149 MA's), (30, 1280), (43, 1373), (50, 1418), (51, 1427),

Gene: Deby_6 Start: 1171, Stop: 1371, Start Num: 28
Candidate Starts for Deby_6:
(9, 1009), (Start: 27 @1165 has 3 MA's), (Start: 28 @1171 has 149 MA's), (41, 1282), (43, 1288), (50, 1333),

Gene: Devera_6 Start: 1197, Stop: 1400, Start Num: 28
Candidate Starts for Devera_6:
(Start: 27 @1191 has 3 MA's), (Start: 28 @1197 has 149 MA's), (41, 1308), (43, 1314), (47, 1329), (49, 1341), (50, 1359), (51, 1368),

Gene: DismalFunk_2 Start: 224, Stop: 436, Start Num: 28
Candidate Starts for DismalFunk_2:
(25, 200), (Start: 28 @224 has 149 MA's), (30, 248), (38, 302), (43, 341), (45, 347), (58, 419),

Gene: DismalStressor_2 Start: 224, Stop: 436, Start Num: 28
Candidate Starts for DismalStressor_2:
(25, 200), (Start: 28 @224 has 149 MA's), (30, 248), (38, 302), (43, 341), (45, 347), (58, 419),

Gene: Dole_6 Start: 1197, Stop: 1400, Start Num: 28
Candidate Starts for Dole_6:
(Start: 27 @1191 has 3 MA's), (Start: 28 @1197 has 149 MA's), (41, 1308), (43, 1314), (47, 1329), (49, 1341), (50, 1359), (51, 1368),

Gene: Doughnut_2 Start: 224, Stop: 436, Start Num: 28
Candidate Starts for Doughnut_2:
(25, 200), (Start: 28 @224 has 149 MA's), (30, 248), (38, 302), (43, 341), (45, 347), (58, 419),

Gene: DrHayes_6 Start: 1162, Stop: 1362, Start Num: 28
Candidate Starts for DrHayes_6:
(Start: 27 @1156 has 3 MA's), (Start: 28 @1162 has 149 MA's), (41, 1273), (43, 1279), (47, 1294), (49, 1306), (50, 1324),

Gene: Durfee_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Durfee_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Efra2_6 Start: 1164, Stop: 1367, Start Num: 28
Candidate Starts for Efra2_6:
(Start: 27 @1158 has 3 MA's), (Start: 28 @1164 has 149 MA's), (41, 1275), (43, 1281), (50, 1326), (51, 1335),

Gene: Ekdilam_3 Start: 715, Stop: 918, Start Num: 28
Candidate Starts for Ekdilam_3:
(11, 589), (16, 655), (19, 664), (23, 688), (Start: 27 @709 has 3 MA's), (Start: 28 @715 has 149 MA's), (30, 739), (46, 844), (49, 862), (50, 880), (51, 889),

Gene: Ellie_3 Start: 809, Stop: 1009, Start Num: 28
Candidate Starts for Ellie_3:
(6, 602), (Start: 28 @809 has 149 MA's), (51, 980),

Gene: Emerson_6 Start: 1186, Stop: 1389, Start Num: 28
Candidate Starts for Emerson_6:
(Start: 27 @1180 has 3 MA's), (Start: 28 @1186 has 149 MA's), (41, 1297), (43, 1303), (47, 1318), (50, 1348), (51, 1357),

Gene: Enkosi_2 Start: 443, Stop: 643, Start Num: 28
Candidate Starts for Enkosi_2:
(Start: 28 @443 has 149 MA's), (30, 467), (43, 560), (50, 605), (51, 614),

Gene: Eponine_7 Start: 1991, Stop: 2236, Start Num: 21
Candidate Starts for Eponine_7:
(Start: 21 @1991 has 20 MA's), (24, 2015), (34, 2096), (40, 2135), (54, 2213), (56, 2219), (57, 2222),

Gene: Fefferhead_5 Start: 979, Stop: 1179, Start Num: 28
Candidate Starts for Fefferhead_5:
(Start: 28 @979 has 149 MA's), (51, 1150),

Gene: Findley_2 Start: 224, Stop: 436, Start Num: 28
Candidate Starts for Findley_2:
(25, 200), (Start: 28 @224 has 149 MA's), (30, 248), (38, 302), (43, 341), (57, 410), (58, 419),

Gene: Fionnbharth_7 Start: 1985, Stop: 2224, Start Num: 21
Candidate Starts for Fionnbharth_7:

(Start: 21 @1985 has 20 MA's), (24, 2009), (32, 2081), (35, 2087), (36, 2093), (40, 2123), (44, 2147), (48, 2171), (52, 2201), (55, 2207),

Gene: Ganymede_6 Start: 1206, Stop: 1409, Start Num: 28
Candidate Starts for Ganymede_6:
(3, 993), (Start: 27 @1200 has 3 MA's), (Start: 28 @1206 has 149 MA's), (41, 1317), (43, 1323), (47, 1338), (50, 1368), (51, 1377),

Gene: Geraldini_6 Start: 1209, Stop: 1412, Start Num: 28
Candidate Starts for Geraldini_6:
(9, 1047), (Start: 27 @1203 has 3 MA's), (Start: 28 @1209 has 149 MA's), (41, 1320), (43, 1326), (47, 1341), (50, 1371), (51, 1380),

Gene: Guanica15_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for Guanica15_6:
(10, 1051), (12, 1066), (Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (50, 1342), (51, 1351),

Gene: Hammy_5 Start: 977, Stop: 1180, Start Num: 28
Candidate Starts for Hammy_5:
(Start: 28 @977 has 149 MA's), (42, 1094), (49, 1124), (50, 1142), (51, 1151),

Gene: HedwigODU_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for HedwigODU_6:
(Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (47, 1312), (50, 1342), (51, 1351),

Gene: Homura_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Homura_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Hurricane_5 Start: 1086, Stop: 1280, Start Num: 28
Candidate Starts for Hurricane_5:
(Start: 28 @1086 has 149 MA's), (30, 1110), (32, 1140), (43, 1203), (45, 1209), (49, 1230), (50, 1248),

Gene: Hyperbowlee_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Hyperbowlee_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Illumine_6 Start: 1197, Stop: 1400, Start Num: 28
Candidate Starts for Illumine_6:
(Start: 27 @1191 has 3 MA's), (Start: 28 @1197 has 149 MA's), (41, 1308), (43, 1314), (47, 1329), (49, 1341), (50, 1359), (51, 1368),

Gene: Inky_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Inky_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: JAWS_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for JAWS_6:

(Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (47, 1312), (50, 1342), (51, 1351),

Gene: JF1_7 Start: 1985, Stop: 2224, Start Num: 21
Candidate Starts for JF1_7:
(Start: 21 @1985 has 20 MA's), (24, 2009), (32, 2081), (35, 2087), (36, 2093), (40, 2123), (44, 2147), (48, 2171), (52, 2201), (55, 2207),

Gene: Jarvi_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Jarvi_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Jayhawk_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for Jayhawk_6:
(Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (47, 1312), (50, 1342), (51, 1351),

Gene: Jeckyll_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Jeckyll_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Joy99_6 Start: 1156, Stop: 1359, Start Num: 28
Candidate Starts for Joy99_6:
(Start: 27 @1150 has 3 MA's), (Start: 28 @1156 has 149 MA's), (41, 1267), (43, 1273), (47, 1288), (50, 1318), (51, 1327),

Gene: Juliette_7 Start: 1991, Stop: 2236, Start Num: 21
Candidate Starts for Juliette_7:
(Start: 21 @1991 has 20 MA's), (24, 2015), (34, 2096), (40, 2135), (54, 2213), (56, 2219), (57, 2222),

Gene: Keshu_5 Start: 1065, Stop: 1259, Start Num: 28
Candidate Starts for Keshu_5:
(Start: 28 @1065 has 149 MA's), (30, 1089), (32, 1119), (43, 1182), (45, 1188), (49, 1209), (50, 1227),

Gene: KiSi_5 Start: 1077, Stop: 1277, Start Num: 28
Candidate Starts for KiSi_5:
(Start: 28 @1077 has 149 MA's), (43, 1194), (50, 1239), (51, 1248),

Gene: Kraw_7 Start: 1985, Stop: 2224, Start Num: 21
Candidate Starts for Kraw_7:
(Start: 21 @1985 has 20 MA's), (24, 2009), (32, 2081), (35, 2087), (36, 2093), (40, 2123), (44, 2147), (48, 2171), (52, 2201), (55, 2207),

Gene: Krueger_5 Start: 1093, Stop: 1287, Start Num: 28
Candidate Starts for Krueger_5:
(Start: 28 @1093 has 149 MA's), (32, 1147), (39, 1174), (43, 1210), (50, 1255), (51, 1264),

Gene: LastHope_6 Start: 1192, Stop: 1395, Start Num: 28
Candidate Starts for LastHope_6:
(17, 1138), (Start: 27 @1186 has 3 MA's), (Start: 28 @1192 has 149 MA's), (43, 1309), (50, 1354), (51, 1363),

Gene: LaterM_6 Start: 1161, Stop: 1364, Start Num: 28
Candidate Starts for LaterM_6:
(Start: 27 @1155 has 3 MA's), (Start: 28 @1161 has 149 MA's), (41, 1272), (43, 1278), (47, 1293), (49, 1305), (50, 1323), (51, 1332),

Gene: Lavahound_4 Start: 777, Stop: 977, Start Num: 28
Candidate Starts for Lavahound_4:
(Start: 28 @777 has 149 MA's), (51, 948),

Gene: LeMond_5 Start: 1077, Stop: 1277, Start Num: 28
Candidate Starts for LeMond_5:
(Start: 28 @1077 has 149 MA's), (41, 1188), (50, 1239), (51, 1248),

Gene: Lea83_5 Start: 1083, Stop: 1277, Start Num: 28
Candidate Starts for Lea83_5:
(Start: 28 @1083 has 149 MA's), (30, 1107), (32, 1137), (43, 1200), (45, 1206), (49, 1227), (50, 1245),

Gene: Lebo14_7 Start: 1998, Stop: 2237, Start Num: 21
Candidate Starts for Lebo14_7:
(Start: 21 @1998 has 20 MA's), (24, 2022), (32, 2094), (35, 2100), (36, 2106), (40, 2136), (44, 2160), (48, 2184), (52, 2214), (55, 2220),

Gene: LilPharaoh_2 Start: 443, Stop: 643, Start Num: 28
Candidate Starts for LilPharaoh_2:
(Start: 28 @443 has 149 MA's), (30, 467), (43, 560), (50, 605), (51, 614),

Gene: LindNT_6 Start: 1155, Stop: 1358, Start Num: 28
Candidate Starts for LindNT_6:
(Start: 27 @1149 has 3 MA's), (Start: 28 @1155 has 149 MA's), (41, 1266), (43, 1272), (47, 1287), (50, 1317), (51, 1326),

Gene: Llorens_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Llorens_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Lunahalos_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Lunahalos_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: MacKat_6 Start: 1206, Stop: 1409, Start Num: 28
Candidate Starts for MacKat_6:
(3, 993), (Start: 27 @1200 has 3 MA's), (Start: 28 @1206 has 149 MA's), (41, 1317), (43, 1323), (47, 1338), (50, 1368), (51, 1377),

Gene: MacnCheese_6 Start: 1298, Stop: 1483, Start Num: 28
Candidate Starts for MacnCheese_6:
(26, 1274), (Start: 28 @1298 has 149 MA's), (30, 1322), (32, 1352), (43, 1415), (49, 1439), (50, 1457),

Gene: Malthus_7 Start: 1985, Stop: 2224, Start Num: 21
Candidate Starts for Malthus_7:

(Start: 21 @1985 has 20 MA's), (24, 2009), (32, 2081), (35, 2087), (36, 2093), (40, 2123), (44, 2147), (48, 2171), (52, 2201), (55, 2207),

Gene: Marcoliusprime_2 Start: 224, Stop: 436, Start Num: 28
Candidate Starts for Marcoliusprime_2:
(25, 200), (Start: 28 @224 has 149 MA's), (30, 248), (38, 302), (43, 341), (45, 347), (58, 419),

Gene: MarkPhew_5 Start: 1025, Stop: 1228, Start Num: 28
Candidate Starts for MarkPhew_5:
(Start: 28 @1025 has 149 MA's), (37, 1100), (41, 1139), (42, 1142), (43, 1145), (46, 1154), (50, 1190), (51, 1199), (53, 1202),

Gene: Marshawn_7 Start: 1626, Stop: 1826, Start Num: 28
Candidate Starts for Marshawn_7:
(22, 1578), (Start: 28 @1626 has 149 MA's), (43, 1743), (50, 1788),

Gene: McMater_6 Start: 1256, Stop: 1456, Start Num: 28
Candidate Starts for McMater_6:
(Start: 27 @1250 has 3 MA's), (Start: 28 @1256 has 149 MA's), (30, 1280), (43, 1373), (50, 1418), (51, 1427),

Gene: Mdavu_2 Start: 443, Stop: 643, Start Num: 28
Candidate Starts for Mdavu_2:
(Start: 28 @443 has 149 MA's), (30, 467), (43, 560), (50, 605), (51, 614),

Gene: MeaningOfLife_6 Start: 1156, Stop: 1359, Start Num: 28
Candidate Starts for MeaningOfLife_6:
(Start: 27 @1150 has 3 MA's), (Start: 28 @1156 has 149 MA's), (41, 1267), (43, 1273), (47, 1288), (50, 1318), (51, 1327),

Gene: Megsy_6 Start: 1155, Stop: 1358, Start Num: 28
Candidate Starts for Megsy_6:
(Start: 27 @1149 has 3 MA's), (Start: 28 @1155 has 149 MA's), (41, 1266), (43, 1272), (47, 1287), (49, 1299), (50, 1317), (51, 1326),

Gene: Milly_2 Start: 224, Stop: 436, Start Num: 28
Candidate Starts for Milly_2:
(25, 200), (Start: 28 @224 has 149 MA's), (30, 248), (38, 302), (43, 341), (45, 347), (58, 419),

Gene: MissDaisy_7 Start: 1941, Stop: 2180, Start Num: 21
Candidate Starts for MissDaisy_7:
(Start: 21 @1941 has 20 MA's), (24, 1965), (31, 2016), (32, 2037), (35, 2043), (36, 2049), (40, 2079), (44, 2103), (48, 2127), (52, 2157), (55, 2163),

Gene: Mitti_7 Start: 1998, Stop: 2237, Start Num: 21
Candidate Starts for Mitti_7:
(Start: 21 @1998 has 20 MA's), (24, 2022), (32, 2094), (35, 2100), (36, 2106), (40, 2136), (44, 2160), (48, 2184), (52, 2214), (55, 2220),

Gene: Mufasa_2 Start: 224, Stop: 436, Start Num: 28
Candidate Starts for Mufasa_2:
(25, 200), (Start: 28 @224 has 149 MA's), (30, 248), (38, 302), (43, 341), (45, 347), (58, 419),

Gene: Murucutumbu_6 Start: 1155, Stop: 1358, Start Num: 28
Candidate Starts for Murucutumbu_6:
(5, 945), (Start: 27 @1149 has 3 MA's), (Start: 28 @1155 has 149 MA's), (41, 1266), (43, 1272), (47, 1287), (49, 1299), (50, 1317), (51, 1326),

Gene: Mynx_6 Start: 1200, Stop: 1409, Start Num: 27
Candidate Starts for Mynx_6:
(3, 993), (Start: 27 @1200 has 3 MA's), (Start: 28 @1206 has 149 MA's), (41, 1317), (43, 1323), (47, 1338), (50, 1368), (51, 1377),

Gene: Nibb_5 Start: 1168, Stop: 1371, Start Num: 28
Candidate Starts for Nibb_5:
(Start: 28 @1168 has 149 MA's), (37, 1243), (41, 1282), (43, 1288), (46, 1297), (50, 1333), (51, 1342),

Gene: Nikao_2 Start: 443, Stop: 643, Start Num: 28
Candidate Starts for Nikao_2:
(Start: 28 @443 has 149 MA's), (30, 467), (43, 560), (50, 605), (51, 614),

Gene: Niklas_6 Start: 1256, Stop: 1456, Start Num: 28
Candidate Starts for Niklas_6:
(Start: 27 @1250 has 3 MA's), (Start: 28 @1256 has 149 MA's), (30, 1280), (43, 1373), (50, 1418), (51, 1427),

Gene: November_4 Start: 843, Stop: 1046, Start Num: 28
Candidate Starts for November_4:
(Start: 28 @843 has 149 MA's), (49, 990), (50, 1008), (51, 1017),

Gene: Nutello_2 Start: 443, Stop: 643, Start Num: 28
Candidate Starts for Nutello_2:
(Start: 28 @443 has 149 MA's), (30, 467), (43, 560), (50, 605), (51, 614),

Gene: OmniCritical_7 Start: 1985, Stop: 2224, Start Num: 21
Candidate Starts for OmniCritical_7:
(Start: 21 @1985 has 20 MA's), (24, 2009), (32, 2081), (35, 2087), (36, 2093), (40, 2123), (44, 2147), (48, 2171), (52, 2201), (55, 2207),

Gene: Oscar_5 Start: 1078, Stop: 1278, Start Num: 28
Candidate Starts for Oscar_5:
(Start: 28 @1078 has 149 MA's), (41, 1189), (50, 1240), (51, 1249),

Gene: Padfoot_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Padfoot_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Padpat_6 Start: 1186, Stop: 1389, Start Num: 28
Candidate Starts for Padpat_6:
(Start: 27 @1180 has 3 MA's), (Start: 28 @1186 has 149 MA's), (41, 1297), (43, 1303), (47, 1318), (50, 1348), (51, 1357),

Gene: Peanam_6 Start: 1256, Stop: 1456, Start Num: 28
Candidate Starts for Peanam_6:

(Start: 27 @1250 has 3 MA's), (Start: 28 @1256 has 149 MA's), (30, 1280), (43, 1373), (50, 1418), (51, 1427),

Gene: Peel_6 Start: 1224, Stop: 1433, Start Num: 27
Candidate Starts for Peel_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Pharb_5 Start: 883, Stop: 1077, Start Num: 28
Candidate Starts for Pharb_5:
(Start: 28 @883 has 149 MA's), (30, 907), (32, 937), (33, 940), (43, 1000), (45, 1006), (46, 1009), (49, 1027), (50, 1045),

Gene: PhelpsODU_5 Start: 1123, Stop: 1317, Start Num: 28
Candidate Starts for PhelpsODU_5:
(Start: 28 @1123 has 149 MA's), (39, 1204), (43, 1240), (50, 1285), (51, 1294),

Gene: Phrank_5 Start: 1089, Stop: 1283, Start Num: 28
Candidate Starts for Phrank_5:
(8, 942), (14, 981), (Start: 28 @1089 has 149 MA's), (39, 1170), (43, 1206), (50, 1251), (51, 1260),

Gene: Piatt_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Piatt_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Pisa1_5 Start: 958, Stop: 1158, Start Num: 28
Candidate Starts for Pisa1_5:
(Start: 27 @952 has 3 MA's), (Start: 28 @958 has 149 MA's), (41, 1069), (43, 1075), (47, 1090), (49, 1102), (50, 1120),

Gene: Pisa4_5 Start: 958, Stop: 1158, Start Num: 28
Candidate Starts for Pisa4_5:
(Start: 27 @952 has 3 MA's), (Start: 28 @958 has 149 MA's), (41, 1069), (43, 1075), (47, 1090), (49, 1102), (50, 1120),

Gene: Pixie_5 Start: 834, Stop: 1028, Start Num: 28
Candidate Starts for Pixie_5:
(Start: 28 @834 has 149 MA's), (30, 858), (32, 888), (43, 951), (49, 978), (50, 996),

Gene: Pokerus_5 Start: 1140, Stop: 1343, Start Num: 28
Candidate Starts for Pokerus_5:
(Start: 27 @1134 has 3 MA's), (Start: 28 @1140 has 149 MA's), (41, 1251), (43, 1257), (47, 1272), (50, 1302), (51, 1311),

Gene: Prithvi_6 Start: 1155, Stop: 1358, Start Num: 28
Candidate Starts for Prithvi_6:
(Start: 27 @1149 has 3 MA's), (Start: 28 @1155 has 149 MA's), (41, 1266), (43, 1272), (47, 1287), (50, 1317), (51, 1326),

Gene: Qhanda_7 Start: 1998, Stop: 2237, Start Num: 21
Candidate Starts for Qhanda_7:

(Start: 21 @1998 has 20 MA's), (32, 2094), (35, 2100), (36, 2106), (40, 2136), (44, 2160), (48, 2184), (52, 2214), (55, 2220),

Gene: QuincyRose_5 Start: 1206, Stop: 1409, Start Num: 28
Candidate Starts for QuincyRose_5:
(3, 993), (Start: 27 @1200 has 3 MA's), (Start: 28 @1206 has 149 MA's), (41, 1317), (43, 1323), (47, 1338), (50, 1368), (51, 1377),

Gene: Ramen_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for Ramen_6:
(Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (47, 1312), (50, 1342), (51, 1351),

Gene: Rapunzel97_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for Rapunzel97_6:
(Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (47, 1312), (50, 1342), (51, 1351),

Gene: Richo_6 Start: 1256, Stop: 1456, Start Num: 28
Candidate Starts for Richo_6:
(Start: 27 @1250 has 3 MA's), (Start: 28 @1256 has 149 MA's), (30, 1280), (43, 1373), (50, 1418), (51, 1427),

Gene: Rosmarinus_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Rosmarinus_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Ruthiejr_6 Start: 1722, Stop: 1967, Start Num: 21
Candidate Starts for Ruthiejr_6:
(Start: 21 @1722 has 20 MA's), (24, 1746), (34, 1827), (54, 1944), (56, 1950), (57, 1953),

Gene: SamScheppers_5 Start: 1595, Stop: 1834, Start Num: 21
Candidate Starts for SamScheppers_5:
(Start: 21 @1595 has 20 MA's), (24, 1619), (32, 1691), (35, 1697), (36, 1703), (40, 1733), (44, 1757), (48, 1781), (52, 1811), (55, 1817),

Gene: SamuelLPlaqson_6 Start: 1162, Stop: 1362, Start Num: 28
Candidate Starts for SamuelLPlaqson_6:
(Start: 27 @1156 has 3 MA's), (Start: 28 @1162 has 149 MA's), (41, 1273), (43, 1279), (47, 1294), (49, 1306), (50, 1324),

Gene: Scarlett_5 Start: 1077, Stop: 1277, Start Num: 28
Candidate Starts for Scarlett_5:
(Start: 28 @1077 has 149 MA's), (37, 1152), (43, 1194), (50, 1239), (51, 1248),

Gene: SgtBeansprout_2 Start: 443, Stop: 643, Start Num: 28
Candidate Starts for SgtBeansprout_2:
(Start: 28 @443 has 149 MA's), (30, 467), (43, 560), (50, 605), (51, 614),

Gene: Shadow1_4 Start: 997, Stop: 1191, Start Num: 28
Candidate Starts for Shadow1_4:
(20, 946), (Start: 28 @997 has 149 MA's), (39, 1078), (50, 1159), (51, 1168),

Gene: Shaobing_6 Start: 1256, Stop: 1456, Start Num: 28
Candidate Starts for Shaobing_6:
(Start: 27 @1250 has 3 MA's), (Start: 28 @1256 has 149 MA's), (30, 1280), (43, 1373), (50, 1418), (51, 1427),

Gene: ShedlockHolmes_5 Start: 1083, Stop: 1277, Start Num: 28
Candidate Starts for ShedlockHolmes_5:
(Start: 28 @1083 has 149 MA's), (30, 1107), (32, 1137), (43, 1200), (45, 1206), (49, 1227), (50, 1245),

Gene: ShiaSurprise_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for ShiaSurprise_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: SirPhilip_5 Start: 960, Stop: 1160, Start Num: 28
Candidate Starts for SirPhilip_5:
(4, 756), (7, 786), (Start: 28 @960 has 149 MA's), (41, 1071), (43, 1077), (50, 1122), (51, 1131),

Gene: Slarp_7 Start: 1998, Stop: 2237, Start Num: 21
Candidate Starts for Slarp_7:
(Start: 21 @1998 has 20 MA's), (32, 2094), (35, 2100), (36, 2106), (40, 2136), (44, 2160), (48, 2184), (52, 2214), (55, 2220),

Gene: Slimphazie_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for Slimphazie_6:
(Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (47, 1312), (50, 1342), (51, 1351),

Gene: Spock_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Spock_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Stinson_6 Start: 1161, Stop: 1364, Start Num: 28
Candidate Starts for Stinson_6:
(Start: 27 @1155 has 3 MA's), (Start: 28 @1161 has 149 MA's), (41, 1272), (43, 1278), (47, 1293), (49, 1305), (50, 1323), (51, 1332),

Gene: Strobilo_2 Start: 224, Stop: 436, Start Num: 28
Candidate Starts for Strobilo_2:
(25, 200), (Start: 28 @224 has 149 MA's), (30, 248), (38, 302), (43, 341), (45, 347), (58, 419),

Gene: Sulley_6 Start: 1171, Stop: 1371, Start Num: 28
Candidate Starts for Sulley_6:
(9, 1009), (Start: 27 @1165 has 3 MA's), (Start: 28 @1171 has 149 MA's), (41, 1282), (43, 1288), (50, 1333),

Gene: Sunflower1121_4 Start: 996, Stop: 1190, Start Num: 28
Candidate Starts for Sunflower1121_4:
(20, 945), (Start: 28 @996 has 149 MA's), (39, 1077), (50, 1158), (51, 1167),

Gene: Syra333_5 Start: 1101, Stop: 1295, Start Num: 28

Candidate Starts for Syra333_5:
(20, 1050), (Start: 28 @1101 has 149 MA's), (32, 1155), (33, 1158), (39, 1182), (50, 1263), (51, 1272),

Gene: TBond007_5 Start: 833, Stop: 1027, Start Num: 28
Candidate Starts for TBond007_5:
(Start: 28 @833 has 149 MA's), (30, 857), (32, 887), (43, 950), (49, 977), (50, 995),

Gene: TClif_5 Start: 1057, Stop: 1251, Start Num: 28
Candidate Starts for TClif_5:
(Start: 28 @1057 has 149 MA's), (30, 1081), (39, 1138), (50, 1219), (51, 1228),

Gene: TM4_2 Start: 236, Stop: 448, Start Num: 28
Candidate Starts for TM4_2:
(13, 131), (25, 212), (Start: 28 @236 has 149 MA's), (29, 251), (30, 260), (38, 314), (43, 353), (57, 422), (58, 431),

Gene: Tachez_6 Start: 1149, Stop: 1352, Start Num: 28
Candidate Starts for Tachez_6:
(Start: 27 @1143 has 3 MA's), (Start: 28 @1149 has 149 MA's), (41, 1260), (43, 1266), (47, 1281), (50, 1311), (51, 1320),

Gene: TaiwanKao_6 Start: 1149, Stop: 1358, Start Num: 27
Candidate Starts for TaiwanKao_6:
(Start: 27 @1149 has 3 MA's), (Start: 28 @1155 has 149 MA's), (41, 1266), (43, 1272), (47, 1287), (49, 1299), (50, 1317), (51, 1326),

Gene: Taquito_5 Start: 1596, Stop: 1835, Start Num: 21
Candidate Starts for Taquito_5:
(Start: 21 @1596 has 20 MA's), (24, 1620), (32, 1692), (35, 1698), (36, 1704), (40, 1734), (44, 1758), (48, 1782), (52, 1812), (55, 1818),

Gene: Teejan_2 Start: 443, Stop: 643, Start Num: 28
Candidate Starts for Teejan_2:
(Start: 28 @443 has 149 MA's), (30, 467), (43, 560), (50, 605), (51, 614),

Gene: Tierra_5 Start: 1091, Stop: 1285, Start Num: 28
Candidate Starts for Tierra_5:
(Start: 28 @1091 has 149 MA's), (39, 1172), (43, 1208), (50, 1253), (51, 1262),

Gene: Tigress9_5 Start: 1093, Stop: 1287, Start Num: 28
Candidate Starts for Tigress9_5:
(Start: 28 @1093 has 149 MA's), (32, 1147), (39, 1174), (43, 1210), (50, 1255), (51, 1264),

Gene: TingHuaYa_6 Start: 1193, Stop: 1396, Start Num: 28
Candidate Starts for TingHuaYa_6:
(Start: 27 @1187 has 3 MA's), (Start: 28 @1193 has 149 MA's), (43, 1310), (47, 1325), (50, 1355), (51, 1364),

Gene: TiniBug_6 Start: 1162, Stop: 1362, Start Num: 28
Candidate Starts for TiniBug_6:
(Start: 27 @1156 has 3 MA's), (Start: 28 @1162 has 149 MA's), (41, 1273), (43, 1279), (47, 1294), (49, 1306), (50, 1324),

Gene: Tiri_6 Start: 1197, Stop: 1400, Start Num: 28
Candidate Starts for Tiri_6:
(3, 984), (Start: 27 @1191 has 3 MA's), (Start: 28 @1197 has 149 MA's), (37, 1272), (41, 1308), (43, 1314), (47, 1329), (50, 1359), (51, 1368),

Gene: Topper_6 Start: 1230, Stop: 1433, Start Num: 28
Candidate Starts for Topper_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Torres_2 Start: 443, Stop: 643, Start Num: 28
Candidate Starts for Torres_2:
(Start: 28 @443 has 149 MA's), (30, 467), (43, 560), (50, 605), (51, 614),

Gene: TreyKay_6 Start: 1155, Stop: 1358, Start Num: 28
Candidate Starts for TreyKay_6:
(Start: 27 @1149 has 3 MA's), (Start: 28 @1155 has 149 MA's), (41, 1266), (43, 1272), (47, 1287), (50, 1317), (51, 1326),

Gene: TribleTrouble_4 Start: 901, Stop: 1095, Start Num: 28
Candidate Starts for TribleTrouble_4:
(Start: 28 @901 has 149 MA's), (30, 925), (32, 955), (35, 964), (43, 1018), (45, 1024), (49, 1045), (50, 1063),

Gene: Trice_2 Start: 443, Stop: 643, Start Num: 28
Candidate Starts for Trice_2:
(Start: 28 @443 has 149 MA's), (30, 467), (43, 560), (50, 605), (51, 614),

Gene: TruffulaTree_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for TruffulaTree_6:
(Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (47, 1312), (50, 1342), (51, 1351),

Gene: Twitch_6 Start: 1224, Stop: 1433, Start Num: 27
Candidate Starts for Twitch_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Unicorn_5 Start: 1123, Stop: 1317, Start Num: 28
Candidate Starts for Unicorn_5:
(Start: 28 @1123 has 149 MA's), (39, 1204), (43, 1240), (50, 1285), (51, 1294),

Gene: Urkel_6 Start: 1162, Stop: 1362, Start Num: 28
Candidate Starts for Urkel_6:
(Start: 27 @1156 has 3 MA's), (Start: 28 @1162 has 149 MA's), (41, 1273), (43, 1279), (47, 1294), (49, 1306), (50, 1324),

Gene: Validus_6 Start: 1172, Stop: 1372, Start Num: 28
Candidate Starts for Validus_6:
(Start: 27 @1166 has 3 MA's), (Start: 28 @1172 has 149 MA's), (30, 1196), (41, 1283), (43, 1289), (50, 1334), (51, 1343),

Gene: Veliki_6 Start: 1230, Stop: 1433, Start Num: 28

Candidate Starts for Veliki_6:
(3, 1017), (Start: 27 @1224 has 3 MA's), (Start: 28 @1230 has 149 MA's), (41, 1341), (43, 1347), (47, 1362), (50, 1392), (51, 1401),

Gene: Wintermute_7 Start: 1984, Stop: 2223, Start Num: 21
Candidate Starts for Wintermute_7:
(Start: 21 @1984 has 20 MA's), (24, 2008), (32, 2080), (35, 2086), (36, 2092), (40, 2122), (44, 2146), (48, 2170), (52, 2200), (55, 2206),

Gene: Ximenita_6 Start: 1265, Stop: 1459, Start Num: 28
Candidate Starts for Ximenita_6:
(Start: 28 @1265 has 149 MA's), (32, 1319), (39, 1346), (50, 1427), (51, 1436),

Gene: Y10_07 Start: 1985, Stop: 2224, Start Num: 21
Candidate Starts for Y10_07:
(Start: 21 @1985 has 20 MA's), (24, 2009), (32, 2081), (35, 2087), (36, 2093), (40, 2123), (44, 2147), (48, 2171), (52, 2201), (55, 2207),

Gene: Y2_07 Start: 1985, Stop: 2224, Start Num: 21
Candidate Starts for Y2_07:
(Start: 21 @1985 has 20 MA's), (24, 2009), (32, 2081), (35, 2087), (36, 2093), (40, 2123), (44, 2147), (48, 2171), (52, 2201), (55, 2207),

Gene: YasnayaPolyana_7 Start: 1985, Stop: 2224, Start Num: 21
Candidate Starts for YasnayaPolyana_7:
(Start: 21 @1985 has 20 MA's), (24, 2009), (32, 2081), (35, 2087), (36, 2093), (40, 2123), (44, 2147), (48, 2171), (52, 2201), (55, 2207),

Gene: YoureAdopted_5 Start: 1156, Stop: 1359, Start Num: 28
Candidate Starts for YoureAdopted_5:
(Start: 27 @1150 has 3 MA's), (Start: 28 @1156 has 149 MA's), (41, 1267), (43, 1273), (47, 1288), (50, 1318), (51, 1327),

Gene: Yuna_6 Start: 1258, Stop: 1452, Start Num: 28
Candidate Starts for Yuna_6:
(8, 1129), (Start: 28 @1258 has 149 MA's), (32, 1312), (39, 1339), (41, 1369),

Gene: Yunkel11_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for Yunkel11_6:
(10, 1051), (12, 1066), (Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (50, 1342), (51, 1351),

Gene: Zabiza_6 Start: 1180, Stop: 1383, Start Num: 28
Candidate Starts for Zabiza_6:
(Start: 27 @1174 has 3 MA's), (Start: 28 @1180 has 149 MA's), (41, 1291), (43, 1297), (47, 1312), (50, 1342), (51, 1351),

Gene: Zavala_6 Start: 1165, Stop: 1368, Start Num: 28
Candidate Starts for Zavala_6:
(Start: 27 @1159 has 3 MA's), (Start: 28 @1165 has 149 MA's), (41, 1276), (43, 1282), (47, 1297), (50, 1327), (51, 1336),

Gene: ZoeJ_2 Start: 224, Stop: 436, Start Num: 28

Candidate Starts for ZoeJ_2:
(25, 200), (Start: 28 @224 has 149 MA's), (30, 248), (43, 341), (57, 410), (58, 419),