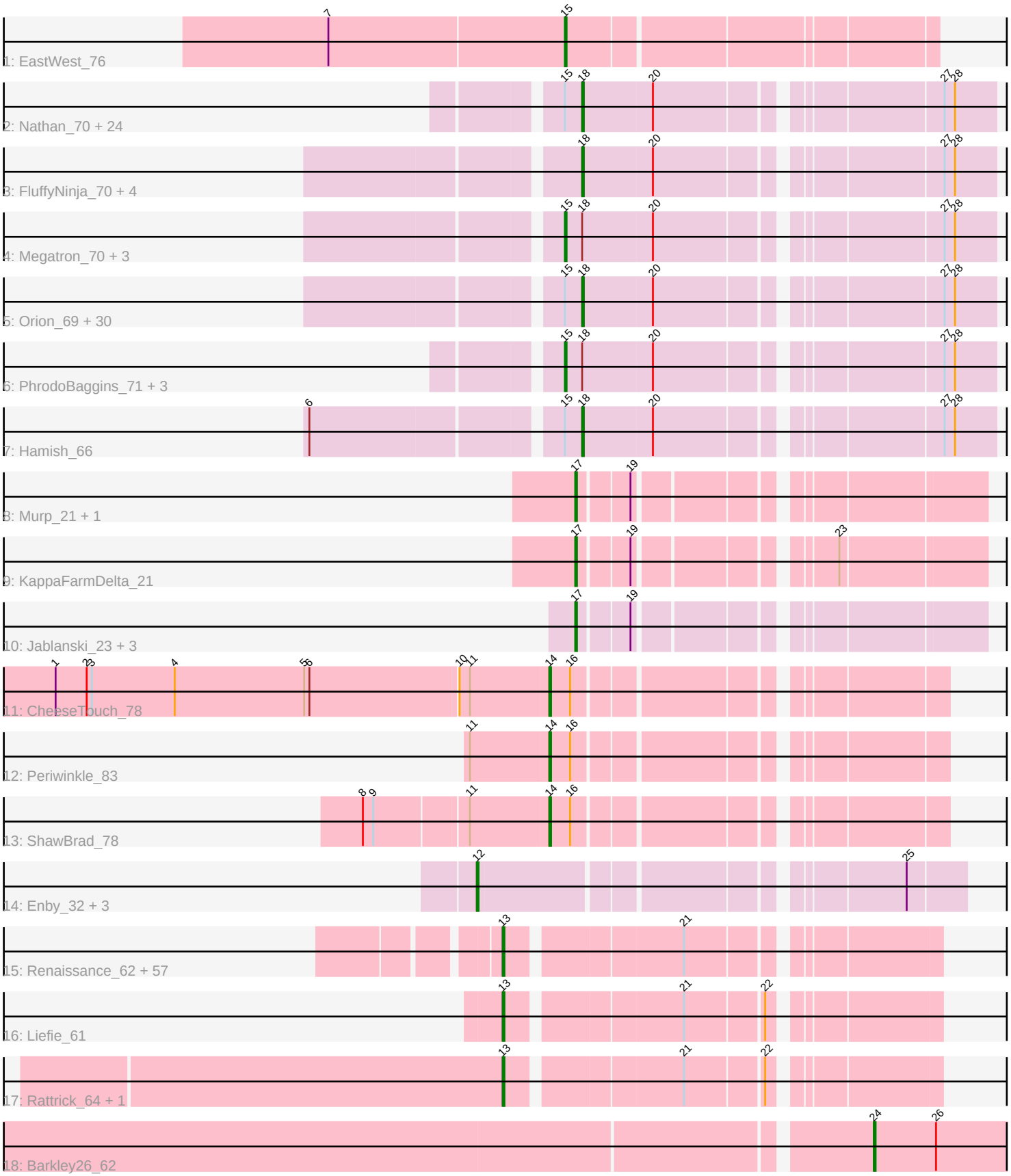
Pham 347352


1: EastWest_76
2: Nathan_70 + 24
3: FluffyNinja_70 + 4
4: Megatron_70 + 3
5: Orion_69 + 30
6: PhrodoBaggins_71 + 3
7: Hamish_66
8: Murp_21 + 1
9: KappaFarmDelta_21
10: Jablanski_23 + 3
11: CheeseTouch_78
12: Periwinkle_83
13: ShawBrad_78
14: Enby_32 + 3
15: Renaissance_62 + 57
16: Liefie_61
17: Rattrick_64 + 1
18: Barkley26_62

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 347352 Report

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

Pham number 347352 has 147 members, 1 are drafts.

Phages represented in each track:
• Track 1 : EastWest_76
• Track 2 : Nathan_70, HenryJackson_70, Iridessa_71, Kahve_70, DaddyDaniels_72, Ashraf_70, Cornbread_68, Vista_68, Zonia_70, Thora_68, ElvisPhasley_70, Keitherie_72, Mosaic_67, Mana_68, Cosmolli16_71, TallGrassMM_68, ImtiyazSitla_70, Childish_69, MRabcd_69, Chorkpop_70, Daffy_68, Maskar_70, MitKao_69, Wallhey_70, Lego3393_67
• Track 3 : FluffyNinja_70, Yoshand_70, Swish_70, BlackStallion_70, Pherdinand_70
• Track 4 : Megatron_70, PhatCats2014_70, Piglet_0070, Matalotodo_68
• Track 5 : Orion_69, IsaacEli_71, Mutante_70, Altwerkus_68, Xavier_69, Katniss_71, Jillium_70, Serendipity_69, PG1_69, Serpentine_0070, Anderson_71, Badfish_70, Skippy_71, Chah_71, Waterdiva_70, Hertubise_69, Mesh1_70, SilverBell_70, Hetaeria_69, Cannibal_70, ThreeOh3D2_71, Oosterbaan_69, Frankicide_68, UAch1_70, Maru_69, Phipps_69, Kikipoo_71, Eugenia_70, OliverWalter_69, Olak_69, Scoot17C_70
• Track 6 : PhrodoBaggins_71, GeneCoco_70, Kwksand96_70, Pinkman_69
• Track 7 : Hamish_66
• Track 8 : Murp_21, CheeseSpider_23
• Track 9 : KappaFarmDelta_21
• Track 10 : Jablanski_23, Posh_23, Pytheas_23, Wrigley_23
• Track 11 : CheeseTouch_78
• Track 12 : Periwinkle_83
• Track 13 : ShawBrad_78
• Track 14 : Enby_32, EleanorGeorge_31, Lorde_32, SG4_31
• Track 15 : Renaissance_62, Camri_63, LouisV14_65, Gideon_63, Marmie_63, Aroostook_63, AzulaCat_64, Hope_63, ZoMa_62, Jonghyun_61, Maliketh_63, DNAIII_0060, Sizemore_64, PinkYoshi_63, Gomashi_62, ECartman_61, Grizzly_62, Ruriko_64, Kasen3_64, JorRay_64, Phish_62, Phreak_63, Hotshotbaby7_63, Mowgli_63, CassieYates_63, Remy19_63, CLED96_62, Coleslaw_62, Avrafan_62, Wendigo_64, Richarlison_64, Schiebel_61, Plagueis_63, DingDing_65, Cedasite_63, Jolene_63, Kareem_64, Crespo_62, Darionha_63, Jeilious_63, BruceB_63, Neoh_64, Angel_61, Sweets_63, Olga_64, GoldenAsh_61, ShaboiShabazz_62, OctaviousRex_62, Cherrybomb426_62, Zombie_63, Peeb_62, Annihilator_62, MZKinsey_65, BPs_63, Frosty24_63, Phloodle_64, TomBrady_63, Chance64_63
• Track 16 : Liefie_61
• Track 17 : Rattrick_64, Periodt_64
• Track 18 : Barkley26_62

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

The start number called the most often in the published annotations is 18, it was called in 61 of the 146 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Altwerkus_68, Anderson_71, Ashraf_70, Badfish_70, BlackStallion_70, Cannibal_70, Chah_71, Childish_69, Chorkpop_70, Cornbread_68, Cosmolli16_71, DaddyDaniels_72, Daffy_68, ElvisPhasley_70, Eugenia_70, FluffyNinja_70, Frankicide_68, Hamish_66, HenryJackson_70, Hertubise_69, Hetaeria_69, ImtiyazSitla_70, Iridessa_71, IsaacEli_71, Jillium_70, Kahve_70, Katniss_71, Keitherie_72, Kikipoo_71, Lego3393_67, MRabcd_69, Mana_68, Maru_69, Maskar_70, Mesh1_70, MitKao_69, Mosaic_67, Mutante_70, Nathan_70, Olak_69, OliverWalter_69, Oosterbaan_69, Orion_69, PG1_69, Pherdinand_70, Phipps_69, Scoot17C_70, Serendipity_69, Serpentine_0070, SilverBell_70, Skippy_71, Swish_70, TallGrassMM_68, Thora_68, ThreeOh3D2_71, UAch1_70, Vista_68, Wallhey_70, Waterdiva_70, Xavier_69, Yoshand_70, Zonia_70,

Genes that have the "Most Annotated" start but do not call it:
• GeneCoco_70, Kwksand96_70, Matalotodo_68, Megatron_70, PhatCats2014_70, PhrodoBaggins_71, Piglet_0070, Pinkman_69,

Genes that do not have the "Most Annotated" start:
• Angel_61, Annihilator_62, Aroostook_63, Avrafan_62, AzulaCat_64, BPs_63, Barkley26_62, BruceB_63, CLED96_62, Camri_63, CassieYates_63, Cedasite_63, Chance64_63, CheeseSpider_23, CheeseTouch_78, Cherrybomb426_62, Coleslaw_62, Crespo_62, DNAIII_0060, Darionha_63, DingDing_65, ECartman_61, EastWest_76, EleanorGeorge_31, Enby_32, Frosty24_63, Gideon_63, GoldenAsh_61, Gomashi_62, Grizzly_62, Hope_63, Hotshotbaby7_63, Jablanski_23, Jeilious_63, Jolene_63, Jonghyun_61, JorRay_64, KappaFarmDelta_21, Kareem_64, Kasen3_64, Liefie_61, Lorde_32, LouisV14_65, MZKinsey_65, Maliketh_63, Marmie_63, Mowgli_63, Murp_21, Neoh_64, OctaviousRex_62, Olga_64, Peeb_62, Periodt_64, Periwinkle_83, Phish_62, Phloodle_64, Phreak_63, PinkYoshi_63, Plagueis_63, Posh_23, Pytheas_23, Rattrick_64, Remy19_63, Renaissance_62, Richarlison_64, Ruriko_64, SG4_31, Schiebel_61, ShaboiShabazz_62, ShawBrad_78, Sizemore_64, Sweets_63, TomBrady_63, Wendigo_64, Wrigley_23, ZoMa_62, Zombie_63,

Summary by start number:

Start 12:
• Found in 4 of 147 (2.7%) of genes in pham
• Manual Annotations of this start: 4 of 146
• Called 100.0% of time when present
• Phage (with cluster) where this start called: EleanorGeorge_31 (F1), Enby_32 (F1), Lorde_32 (F1), SG4_31 (F1),

Start 13:
• Found in 61 of 147 (41.5%) of genes in pham
• Manual Annotations of this start: 61 of 146

• Called 100.0% of time when present
• Phage (with cluster) where this start called: Angel_61 (G1), Annihilator_62 (G1), Aroostook_63 (G1), Avrafan_62 (G1), AzulaCat_64 (G1), BPs_63 (G1), BruceB_63 (G1), CLED96_62 (G1), Camri_63 (G1), CassieYates_63 (G1), Cedasite_63 (G1), Chance64_63 (G1), Cherrybomb426_62 (G1), Coleslaw_62 (G1), Crespo_62 (G1), DNAIII_0060 (G1), Darionha_63 (G1), DingDing_65 (G1), ECartman_61 (G1), Frosty24_63 (G1), Gideon_63 (G1), GoldenAsh_61 (G1), Gomashi_62 (G1), Grizzly_62 (G1), Hope_63 (G1), Hotshotbaby7_63 (G1), Jeilious_63 (G), Jolene_63 (G1), Jonghyun_61 (G1), JorRay_64 (G1), Kareem_64 (G1), Kasen3_64 (G1), Liefie_61 (G1), LouisV14_65 (G1), MZKinsey_65 (G1), Maliketh_63 (G1), Marmie_63 (G1), Mowgli_63 (G1), Neoh_64 (G), OctaviousRex_62 (G1), Olga_64 (G1), Peeb_62 (G1), Periodt_64 (G1), Phish_62 (G1), Phloodle_64 (G1), Phreak_63 (G1), PinkYoshi_63 (G1), Plagueis_63 (G1), Rattrick_64 (G1), Remy19_63 (G1), Renaissance_62 (G1), Richarlison_64 (G1), Ruriko_64 (G1), Schiebel_61 (G1), ShaboiShabazz_62 (G1), Sizemore_64 (G1), Sweets_63 (G1), TomBrady_63 (G1), Wendigo_64 (G1), ZoMa_62 (G1), Zombie_63 (G1),

Start 14:
• Found in 3 of 147 (2.0%) of genes in pham
• Manual Annotations of this start: 3 of 146
• Called 100.0% of time when present
• Phage (with cluster) where this start called: CheeseTouch_78 (DN1), Periwinkle_83 (DN1), ShawBrad_78 (DN1),

Start 15:
• Found in 66 of 147 (44.9%) of genes in pham
• Manual Annotations of this start: 9 of 146
• Called 13.6% of time when present
• Phage (with cluster) where this start called: EastWest_76 (AO), GeneCoco_70 (B1), Kwksand96_70 (B1), Matalotodo_68 (B1), Megatron_70 (B1), PhatCats2014_70 (B1), PhrodoBaggins_71 (B1), Piglet_0070 (B1), Pinkman_69 (B1),

Start 17:
• Found in 7 of 147 (4.8%) of genes in pham
• Manual Annotations of this start: 7 of 146
• Called 100.0% of time when present
• Phage (with cluster) where this start called: CheeseSpider_23 (CV), Jablanski_23 (CY3), KappaFarmDelta_21 (CV), Murp_21 (CV), Posh_23 (CY4), Pytheas_23 (CY3), Wrigley_23 (CY4),

Start 18:
• Found in 70 of 147 (47.6%) of genes in pham
• Manual Annotations of this start: 61 of 146
• Called 88.6% of time when present
• Phage (with cluster) where this start called: Altwerkus_68 (B1), Anderson_71 (B1), Ashraf_70 (B1), Badfish_70 (B1), BlackStallion_70 (B1), Cannibal_70 (B1), Chah_71 (B1), Childish_69 (B1), Chorkpop_70 (B1), Cornbread_68 (B1), Cosmolli16_71 (B1), DaddyDaniels_72 (B1), Daffy_68 (B1), ElvisPhasley_70 (B1), Eugenia_70 (B1), FluffyNinja_70 (B1), Frankicide_68 (B1), Hamish_66 (B1), HenryJackson_70 (B1), Hertubise_69 (B1), Hetaeria_69 (B1), ImtiyazSitla_70 (B1), Iridessa_71 (B1), IsaacEli_71 (B1), Jillium_70 (B1), Kahve_70 (B1), Katniss_71 (B1), Keitherie_72 (B1), Kikipoo_71 (B1), Lego3393_67 (B1), MRabcd_69 (B1), Mana_68 (B1), Maru_69 (B1), Maskar_70 (B1), Mesh1_70 (B1), MitKao_69 (B1), Mosaic_67 (B1), Mutante_70 (B1),

Nathan_70 (B1), Olak_69 (B1), OliverWalter_69 (B1), Oosterbaan_69 (B1), Orion_69 (B1), PG1_69 (B1), Pherdinand_70 (B1), Phipps_69 (B1), Scoot17C_70 (B1), Serendipity_69 (B1), Serpentine_0070 (B1), SilverBell_70 (B1), Skippy_71 (B1), Swish_70 (B1), TallGrassMM_68 (B1), Thora_68 (B1), ThreeOh3D2_71 (B1), UAch1_70 (B1), Vista_68 (B1), Wallhey_70 (B1), Waterdiva_70 (B1), Xavier_69 (B1), Yoshand_70 (B1), Zonia_70 (B1),

Start 24:
• Found in 1 of 147 (0.7%) of genes in pham
• Manual Annotations of this start: 1 of 146
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Barkley26_62 (G1),

Summary by clusters:

There are 9 clusters represented in this pham: CY3, F1, G, G1, CY4, AO, DN1, B1, CV,

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

Info for manual annotations of cluster B1:
•Start number 15 was manually annotated 8 times for cluster B1.
•Start number 18 was manually annotated 61 times for cluster B1.

Info for manual annotations of cluster CV:
•Start number 17 was manually annotated 3 times for cluster CV.

Info for manual annotations of cluster CY3:
•Start number 17 was manually annotated 2 times for cluster CY3.

Info for manual annotations of cluster CY4:
•Start number 17 was manually annotated 2 times for cluster CY4.

Info for manual annotations of cluster DN1:
•Start number 14 was manually annotated 3 times for cluster DN1.

Info for manual annotations of cluster F1:
•Start number 12 was manually annotated 4 times for cluster F1.

Info for manual annotations of cluster G:
•Start number 13 was manually annotated 2 times for cluster G.

Info for manual annotations of cluster G1:
•Start number 13 was manually annotated 59 times for cluster G1.
•Start number 24 was manually annotated 1 time for cluster G1.

Gene Information:

Gene: Altwerkus_68 Start: 56943, Stop: 57158, Start Num: 18
Candidate Starts for Altwerkus_68:

(Start: 15 @56934 has 9 MA's), (Start: 18 @56943 has 61 MA's), (20, 56982), (27, 57129), (28, 57135),

Gene: Anderson_71 Start: 57515, Stop: 57730, Start Num: 18
Candidate Starts for Anderson_71:
(Start: 15 @57506 has 9 MA's), (Start: 18 @57515 has 61 MA's), (20, 57554), (27, 57701), (28, 57707),

Gene: Angel_61 Start: 41085, Stop: 41306, Start Num: 13
Candidate Starts for Angel_61:
(Start: 13 @41085 has 61 MA's), (21, 41178),

Gene: Annihilator_62 Start: 41537, Stop: 41758, Start Num: 13
Candidate Starts for Annihilator_62:
(Start: 13 @41537 has 61 MA's), (21, 41630),

Gene: Aroostook_63 Start: 41547, Stop: 41768, Start Num: 13
Candidate Starts for Aroostook_63:
(Start: 13 @41547 has 61 MA's), (21, 41640),

Gene: Ashraf_70 Start: 57497, Stop: 57712, Start Num: 18
Candidate Starts for Ashraf_70:
(Start: 15 @57488 has 9 MA's), (Start: 18 @57497 has 61 MA's), (20, 57536), (27, 57683), (28, 57689),

Gene: Avrafan_62 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Avrafan_62:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: AzulaCat_64 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for AzulaCat_64:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: BPs_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for BPs_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Badfish_70 Start: 57801, Stop: 58016, Start Num: 18
Candidate Starts for Badfish_70:
(Start: 15 @57792 has 9 MA's), (Start: 18 @57801 has 61 MA's), (20, 57840), (27, 57987), (28, 57993),

Gene: Barkley26_62 Start: 41400, Stop: 41621, Start Num: 24
Candidate Starts for Barkley26_62:
(Start: 24 @41400 has 1 MA's), (26, 41436),

Gene: BlackStallion_70 Start: 57544, Stop: 57759, Start Num: 18
Candidate Starts for BlackStallion_70:
(Start: 18 @57544 has 61 MA's), (20, 57583), (27, 57730), (28, 57736),

Gene: BruceB_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for BruceB_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: CLED96_62 Start: 41100, Stop: 41321, Start Num: 13
Candidate Starts for CLED96_62:
(Start: 13 @41100 has 61 MA's), (21, 41193),

Gene: Camri_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Camri_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Cannibal_70 Start: 57539, Stop: 57754, Start Num: 18
Candidate Starts for Cannibal_70:
(Start: 15 @57530 has 9 MA's), (Start: 18 @57539 has 61 MA's), (20, 57578), (27, 57725), (28, 57731),

Gene: CassieYates_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for CassieYates_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Cedasite_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Cedasite_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Chah_71 Start: 57242, Stop: 57457, Start Num: 18
Candidate Starts for Chah_71:
(Start: 15 @57233 has 9 MA's), (Start: 18 @57242 has 61 MA's), (20, 57281), (27, 57428), (28, 57434),

Gene: Chance64_63 Start: 41547, Stop: 41768, Start Num: 13
Candidate Starts for Chance64_63:
(Start: 13 @41547 has 61 MA's), (21, 41640),

Gene: CheeseSpider_23 Start: 19383, Stop: 19586, Start Num: 17
Candidate Starts for CheeseSpider_23:
(Start: 17 @19383 has 7 MA's), (19, 19410),

Gene: CheeseTouch_78 Start: 40545, Stop: 40745, Start Num: 14
Candidate Starts for CheeseTouch_78:
(1, 40263), (2, 40281), (3, 40284), (4, 40332), (5, 40407), (6, 40410), (10, 40494), (11, 40500), (Start: 14 @40545 has 3 MA's), (16, 40557),

Gene: Cherrybomb426_62 Start: 41100, Stop: 41321, Start Num: 13
Candidate Starts for Cherrybomb426_62:
(Start: 13 @41100 has 61 MA's), (21, 41193),

Gene: Childish_69 Start: 57818, Stop: 58033, Start Num: 18
Candidate Starts for Childish_69:
(Start: 15 @57809 has 9 MA's), (Start: 18 @57818 has 61 MA's), (20, 57857), (27, 58004), (28, 58010),

Gene: Chorkpop_70 Start: 57281, Stop: 57496, Start Num: 18
Candidate Starts for Chorkpop_70:
(Start: 15 @57272 has 9 MA's), (Start: 18 @57281 has 61 MA's), (20, 57320), (27, 57467), (28, 57473),

Gene: Coleslaw_62 Start: 41537, Stop: 41758, Start Num: 13
Candidate Starts for Coleslaw_62:
(Start: 13 @41537 has 61 MA's), (21, 41630),

Gene: Cornbread_68 Start: 57320, Stop: 57535, Start Num: 18
Candidate Starts for Cornbread_68:
(Start: 15 @57311 has 9 MA's), (Start: 18 @57320 has 61 MA's), (20, 57359), (27, 57506), (28, 57512),

Gene: Cosmolli16_71 Start: 57999, Stop: 58214, Start Num: 18
Candidate Starts for Cosmolli16_71:
(Start: 15 @57990 has 9 MA's), (Start: 18 @57999 has 61 MA's), (20, 58038), (27, 58185), (28, 58191),

Gene: Crespo_62 Start: 41546, Stop: 41767, Start Num: 13
Candidate Starts for Crespo_62:
(Start: 13 @41546 has 61 MA's), (21, 41639),

Gene: DNAIII_0060 Start: 39174, Stop: 39395, Start Num: 13
Candidate Starts for DNAIII_0060:
(Start: 13 @39174 has 61 MA's), (21, 39267),

Gene: DaddyDaniels_72 Start: 57775, Stop: 57990, Start Num: 18
Candidate Starts for DaddyDaniels_72:
(Start: 15 @57766 has 9 MA's), (Start: 18 @57775 has 61 MA's), (20, 57814), (27, 57961), (28, 57967),

Gene: Daffy_68 Start: 57266, Stop: 57481, Start Num: 18
Candidate Starts for Daffy_68:
(Start: 15 @57257 has 9 MA's), (Start: 18 @57266 has 61 MA's), (20, 57305), (27, 57452), (28, 57458),

Gene: Darionha_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Darionha_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: DingDing_65 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for DingDing_65:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: ECartman_61 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for ECartman_61:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: EastWest_76 Start: 45392, Stop: 45592, Start Num: 15
Candidate Starts for EastWest_76:
(7, 45257), (Start: 15 @45392 has 9 MA's),

Gene: EleanorGeorge_31 Start: 27905, Stop: 28153, Start Num: 12
Candidate Starts for EleanorGeorge_31:
(Start: 12 @27905 has 4 MA's), (25, 28121),

Gene: ElvisPhasley_70 Start: 58297, Stop: 58512, Start Num: 18
Candidate Starts for ElvisPhasley_70:
(Start: 15 @58288 has 9 MA's), (Start: 18 @58297 has 61 MA's), (20, 58336), (27, 58483), (28, 58489),

Gene: Enby_32 Start: 27434, Stop: 27682, Start Num: 12
Candidate Starts for Enby_32:
(Start: 12 @27434 has 4 MA's), (25, 27650),

Gene: Eugenia_70 Start: 57936, Stop: 58151, Start Num: 18
Candidate Starts for Eugenia_70:
(Start: 15 @57927 has 9 MA's), (Start: 18 @57936 has 61 MA's), (20, 57975), (27, 58122), (28, 58128),

Gene: FluffyNinja_70 Start: 57545, Stop: 57760, Start Num: 18
Candidate Starts for FluffyNinja_70:
(Start: 18 @57545 has 61 MA's), (20, 57584), (27, 57731), (28, 57737),

Gene: Frankicide_68 Start: 57327, Stop: 57542, Start Num: 18
Candidate Starts for Frankicide_68:
(Start: 15 @57318 has 9 MA's), (Start: 18 @57327 has 61 MA's), (20, 57366), (27, 57513), (28, 57519),

Gene: Frosty24_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Frosty24_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: GeneCoco_70 Start: 57804, Stop: 58028, Start Num: 15
Candidate Starts for GeneCoco_70:
(Start: 15 @57804 has 9 MA's), (Start: 18 @57813 has 61 MA's), (20, 57852), (27, 57999), (28, 58005),

Gene: Gideon_63 Start: 41547, Stop: 41768, Start Num: 13
Candidate Starts for Gideon_63:
(Start: 13 @41547 has 61 MA's), (21, 41640),

Gene: GoldenAsh_61 Start: 41085, Stop: 41306, Start Num: 13
Candidate Starts for GoldenAsh_61:
(Start: 13 @41085 has 61 MA's), (21, 41178),

Gene: Gomashi_62 Start: 41547, Stop: 41768, Start Num: 13
Candidate Starts for Gomashi_62:
(Start: 13 @41547 has 61 MA's), (21, 41640),

Gene: Grizzly_62 Start: 41396, Stop: 41617, Start Num: 13
Candidate Starts for Grizzly_62:
(Start: 13 @41396 has 61 MA's), (21, 41489),

Gene: Hamish_66 Start: 57196, Stop: 57411, Start Num: 18
Candidate Starts for Hamish_66:
(6, 57052), (Start: 15 @57187 has 9 MA's), (Start: 18 @57196 has 61 MA's), (20, 57235), (27, 57382), (28, 57388),

Gene: HenryJackson_70 Start: 57807, Stop: 58022, Start Num: 18
Candidate Starts for HenryJackson_70:
(Start: 15 @57798 has 9 MA's), (Start: 18 @57807 has 61 MA's), (20, 57846), (27, 57993), (28, 57999),

Gene: Hertubise_69 Start: 57573, Stop: 57788, Start Num: 18
Candidate Starts for Hertubise_69:
(Start: 15 @57564 has 9 MA's), (Start: 18 @57573 has 61 MA's), (20, 57612), (27, 57759), (28, 57765),

Gene: Hetaeria_69 Start: 57513, Stop: 57728, Start Num: 18
Candidate Starts for Hetaeria_69:
(Start: 15 @57504 has 9 MA's), (Start: 18 @57513 has 61 MA's), (20, 57552), (27, 57699), (28, 57705),

Gene: Hope_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Hope_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Hotshotbaby7_63 Start: 41547, Stop: 41768, Start Num: 13
Candidate Starts for Hotshotbaby7_63:
(Start: 13 @41547 has 61 MA's), (21, 41640),

Gene: ImtiyazSitla_70 Start: 57497, Stop: 57712, Start Num: 18
Candidate Starts for ImtiyazSitla_70:
(Start: 15 @57488 has 9 MA's), (Start: 18 @57497 has 61 MA's), (20, 57536), (27, 57683), (28, 57689),

Gene: Iridessa_71 Start: 57232, Stop: 57447, Start Num: 18
Candidate Starts for Iridessa_71:
(Start: 15 @57223 has 9 MA's), (Start: 18 @57232 has 61 MA's), (20, 57271), (27, 57418), (28, 57424),

Gene: IsaacEli_71 Start: 57796, Stop: 58011, Start Num: 18
Candidate Starts for IsaacEli_71:
(Start: 15 @57787 has 9 MA's), (Start: 18 @57796 has 61 MA's), (20, 57835), (27, 57982), (28, 57988),

Gene: Jablanski_23 Start: 20497, Stop: 20700, Start Num: 17
Candidate Starts for Jablanski_23:
(Start: 17 @20497 has 7 MA's), (19, 20524),

Gene: Jeilious_63 Start: 41544, Stop: 41765, Start Num: 13
Candidate Starts for Jeilious_63:
(Start: 13 @41544 has 61 MA's), (21, 41637),

Gene: Jillium_70 Start: 57802, Stop: 58017, Start Num: 18
Candidate Starts for Jillium_70:
(Start: 15 @57793 has 9 MA's), (Start: 18 @57802 has 61 MA's), (20, 57841), (27, 57988), (28, 57994),

Gene: Jolene_63 Start: 41949, Stop: 42170, Start Num: 13
Candidate Starts for Jolene_63:
(Start: 13 @41949 has 61 MA's), (21, 42042),

Gene: Jonghyun_61 Start: 41548, Stop: 41769, Start Num: 13
Candidate Starts for Jonghyun_61:
(Start: 13 @41548 has 61 MA's), (21, 41641),

Gene: JorRay_64 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for JorRay_64:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Kahve_70 Start: 57804, Stop: 58019, Start Num: 18
Candidate Starts for Kahve_70:
(Start: 15 @57795 has 9 MA's), (Start: 18 @57804 has 61 MA's), (20, 57843), (27, 57990), (28, 57996),

Gene: KappaFarmDelta_21 Start: 19185, Stop: 19388, Start Num: 17
Candidate Starts for KappaFarmDelta_21:
(Start: 17 @19185 has 7 MA's), (19, 19212), (23, 19308),

Gene: Kareem_64 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Kareem_64:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Kasen3_64 Start: 41534, Stop: 41755, Start Num: 13

Candidate Starts for Kasen3_64:
(Start: 13 @41534 has 61 MA's), (21, 41627),

Gene: Katniss_71 Start: 57244, Stop: 57459, Start Num: 18
Candidate Starts for Katniss_71:
(Start: 15 @57235 has 9 MA's), (Start: 18 @57244 has 61 MA's), (20, 57283), (27, 57430), (28, 57436),

Gene: Keitherie_72 Start: 57866, Stop: 58081, Start Num: 18
Candidate Starts for Keitherie_72:
(Start: 15 @57857 has 9 MA's), (Start: 18 @57866 has 61 MA's), (20, 57905), (27, 58052), (28, 58058),

Gene: Kikipoo_71 Start: 57796, Stop: 58011, Start Num: 18
Candidate Starts for Kikipoo_71:
(Start: 15 @57787 has 9 MA's), (Start: 18 @57796 has 61 MA's), (20, 57835), (27, 57982), (28, 57988),

Gene: Kwksand96_70 Start: 57369, Stop: 57593, Start Num: 15
Candidate Starts for Kwksand96_70:
(Start: 15 @57369 has 9 MA's), (Start: 18 @57378 has 61 MA's), (20, 57417), (27, 57564), (28, 57570),

Gene: Lego3393_67 Start: 57823, Stop: 58038, Start Num: 18
Candidate Starts for Lego3393_67:
(Start: 15 @57814 has 9 MA's), (Start: 18 @57823 has 61 MA's), (20, 57862), (27, 58009), (28, 58015),

Gene: Liefie_61 Start: 41294, Stop: 41515, Start Num: 13
Candidate Starts for Liefie_61:
(Start: 13 @41294 has 61 MA's), (21, 41387), (22, 41429),

Gene: Lorde_32 Start: 27409, Stop: 27657, Start Num: 12
Candidate Starts for Lorde_32:
(Start: 12 @27409 has 4 MA's), (25, 27625),

Gene: LouisV14_65 Start: 43789, Stop: 44010, Start Num: 13
Candidate Starts for LouisV14_65:
(Start: 13 @43789 has 61 MA's), (21, 43882),

Gene: MRabcd_69 Start: 57584, Stop: 57799, Start Num: 18
Candidate Starts for MRabcd_69:
(Start: 15 @57575 has 9 MA's), (Start: 18 @57584 has 61 MA's), (20, 57623), (27, 57770), (28, 57776),

Gene: MZKinsey_65 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for MZKinsey_65:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Maliketh_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Maliketh_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Mana_68 Start: 57257, Stop: 57472, Start Num: 18
Candidate Starts for Mana_68:
(Start: 15 @57248 has 9 MA's), (Start: 18 @57257 has 61 MA's), (20, 57296), (27, 57443), (28, 57449),

Gene: Marmie_63 Start: 41546, Stop: 41767, Start Num: 13
Candidate Starts for Marmie_63:

(Start: 13 @41546 has 61 MA's), (21, 41639),

Gene: Maru_69 Start: 57696, Stop: 57911, Start Num: 18
Candidate Starts for Maru_69:
(Start: 15 @57687 has 9 MA's), (Start: 18 @57696 has 61 MA's), (20, 57735), (27, 57882), (28, 57888),

Gene: Maskar_70 Start: 57497, Stop: 57712, Start Num: 18
Candidate Starts for Maskar_70:
(Start: 15 @57488 has 9 MA's), (Start: 18 @57497 has 61 MA's), (20, 57536), (27, 57683), (28, 57689),

Gene: Matalotodo_68 Start: 58087, Stop: 58311, Start Num: 15
Candidate Starts for Matalotodo_68:
(Start: 15 @58087 has 9 MA's), (Start: 18 @58096 has 61 MA's), (20, 58135), (27, 58282), (28, 58288),

Gene: Megatron_70 Start: 57774, Stop: 57998, Start Num: 15
Candidate Starts for Megatron_70:
(Start: 15 @57774 has 9 MA's), (Start: 18 @57783 has 61 MA's), (20, 57822), (27, 57969), (28, 57975),

Gene: Mesh1_70 Start: 57832, Stop: 58047, Start Num: 18
Candidate Starts for Mesh1_70:
(Start: 15 @57823 has 9 MA's), (Start: 18 @57832 has 61 MA's), (20, 57871), (27, 58018), (28, 58024),

Gene: MitKao_69 Start: 57266, Stop: 57481, Start Num: 18
Candidate Starts for MitKao_69:
(Start: 15 @57257 has 9 MA's), (Start: 18 @57266 has 61 MA's), (20, 57305), (27, 57452), (28, 57458),

Gene: Mosaic_67 Start: 57261, Stop: 57476, Start Num: 18
Candidate Starts for Mosaic_67:
(Start: 15 @57252 has 9 MA's), (Start: 18 @57261 has 61 MA's), (20, 57300), (27, 57447), (28, 57453),

Gene: Mowgli_63 Start: 41546, Stop: 41767, Start Num: 13
Candidate Starts for Mowgli_63:
(Start: 13 @41546 has 61 MA's), (21, 41639),

Gene: Murp_21 Start: 19085, Stop: 19288, Start Num: 17
Candidate Starts for Murp_21:
(Start: 17 @19085 has 7 MA's), (19, 19112),

Gene: Mutante_70 Start: 57280, Stop: 57495, Start Num: 18
Candidate Starts for Mutante_70:
(Start: 15 @57271 has 9 MA's), (Start: 18 @57280 has 61 MA's), (20, 57319), (27, 57466), (28, 57472),

Gene: Nathan_70 Start: 57632, Stop: 57847, Start Num: 18
Candidate Starts for Nathan_70:
(Start: 15 @57623 has 9 MA's), (Start: 18 @57632 has 61 MA's), (20, 57671), (27, 57818), (28, 57824),

Gene: Neoh_64 Start: 41538, Stop: 41759, Start Num: 13
Candidate Starts for Neoh_64:
(Start: 13 @41538 has 61 MA's), (21, 41631),

Gene: OctaviousRex_62 Start: 41524, Stop: 41745, Start Num: 13
Candidate Starts for OctaviousRex_62:
(Start: 13 @41524 has 61 MA's), (21, 41617),

Gene: Olak_69 Start: 57284, Stop: 57499, Start Num: 18
Candidate Starts for Olak_69:
(Start: 15 @57275 has 9 MA's), (Start: 18 @57284 has 61 MA's), (20, 57323), (27, 57470), (28, 57476),

Gene: Olga_64 Start: 41546, Stop: 41767, Start Num: 13
Candidate Starts for Olga_64:
(Start: 13 @41546 has 61 MA's), (21, 41639),

Gene: OliverWalter_69 Start: 57603, Stop: 57818, Start Num: 18
Candidate Starts for OliverWalter_69:
(Start: 15 @57594 has 9 MA's), (Start: 18 @57603 has 61 MA's), (20, 57642), (27, 57789), (28, 57795),

Gene: Oosterbaan_69 Start: 57560, Stop: 57775, Start Num: 18
Candidate Starts for Oosterbaan_69:
(Start: 15 @57551 has 9 MA's), (Start: 18 @57560 has 61 MA's), (20, 57599), (27, 57746), (28, 57752),

Gene: Orion_69 Start: 57222, Stop: 57437, Start Num: 18
Candidate Starts for Orion_69:
(Start: 15 @57213 has 9 MA's), (Start: 18 @57222 has 61 MA's), (20, 57261), (27, 57408), (28, 57414),

Gene: PG1_69 Start: 57793, Stop: 58008, Start Num: 18
Candidate Starts for PG1_69:
(Start: 15 @57784 has 9 MA's), (Start: 18 @57793 has 61 MA's), (20, 57832), (27, 57979), (28, 57985),

Gene: Peeb_62 Start: 41520, Stop: 41741, Start Num: 13
Candidate Starts for Peeb_62:
(Start: 13 @41520 has 61 MA's), (21, 41613),

Gene: Periodt_64 Start: 42142, Stop: 42363, Start Num: 13
Candidate Starts for Periodt_64:
(Start: 13 @42142 has 61 MA's), (21, 42235), (22, 42277),

Gene: Periwinkle_83 Start: 46446, Stop: 46646, Start Num: 14
Candidate Starts for Periwinkle_83:
(11, 46401), (Start: 14 @46446 has 3 MA's), (16, 46458),

Gene: PhatCats2014_70 Start: 57789, Stop: 58013, Start Num: 15
Candidate Starts for PhatCats2014_70:
(Start: 15 @57789 has 9 MA's), (Start: 18 @57798 has 61 MA's), (20, 57837), (27, 57984), (28, 57990),

Gene: Pherdinand_70 Start: 57547, Stop: 57762, Start Num: 18
Candidate Starts for Pherdinand_70:
(Start: 18 @57547 has 61 MA's), (20, 57586), (27, 57733), (28, 57739),

Gene: Phipps_69 Start: 57345, Stop: 57560, Start Num: 18
Candidate Starts for Phipps_69:
(Start: 15 @57336 has 9 MA's), (Start: 18 @57345 has 61 MA's), (20, 57384), (27, 57531), (28, 57537),

Gene: Phish_62 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Phish_62:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Phloodle_64 Start: 41561, Stop: 41782, Start Num: 13
Candidate Starts for Phloodle_64:
(Start: 13 @41561 has 61 MA's), (21, 41654),

Gene: Phreak_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Phreak_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: PhrodoBaggins_71 Start: 57642, Stop: 57866, Start Num: 15
Candidate Starts for PhrodoBaggins_71:
(Start: 15 @57642 has 9 MA's), (Start: 18 @57651 has 61 MA's), (20, 57690), (27, 57837), (28, 57843),

Gene: Piglet_0070 Start: 57761, Stop: 57985, Start Num: 15
Candidate Starts for Piglet_0070:
(Start: 15 @57761 has 9 MA's), (Start: 18 @57770 has 61 MA's), (20, 57809), (27, 57956), (28, 57962),

Gene: PinkYoshi_63 Start: 41537, Stop: 41758, Start Num: 13
Candidate Starts for PinkYoshi_63:
(Start: 13 @41537 has 61 MA's), (21, 41630),

Gene: Pinkman_69 Start: 57360, Stop: 57584, Start Num: 15
Candidate Starts for Pinkman_69:
(Start: 15 @57360 has 9 MA's), (Start: 18 @57369 has 61 MA's), (20, 57408), (27, 57555), (28, 57561),

Gene: Plagueis_63 Start: 41366, Stop: 41587, Start Num: 13
Candidate Starts for Plagueis_63:
(Start: 13 @41366 has 61 MA's), (21, 41459),

Gene: Posh_23 Start: 20350, Stop: 20553, Start Num: 17
Candidate Starts for Posh_23:
(Start: 17 @20350 has 7 MA's), (19, 20377),

Gene: Pytheas_23 Start: 20496, Stop: 20699, Start Num: 17
Candidate Starts for Pytheas_23:
(Start: 17 @20496 has 7 MA's), (19, 20523),

Gene: Rattrick_64 Start: 42142, Stop: 42363, Start Num: 13
Candidate Starts for Rattrick_64:
(Start: 13 @42142 has 61 MA's), (21, 42235), (22, 42277),

Gene: Remy19_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Remy19_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Renaissance_62 Start: 41523, Stop: 41744, Start Num: 13
Candidate Starts for Renaissance_62:
(Start: 13 @41523 has 61 MA's), (21, 41616),

Gene: Richarlison_64 Start: 41530, Stop: 41751, Start Num: 13
Candidate Starts for Richarlison_64:
(Start: 13 @41530 has 61 MA's), (21, 41623),

Gene: Ruriko_64 Start: 41547, Stop: 41768, Start Num: 13

Candidate Starts for Ruriko_64:
(Start: 13 @41547 has 61 MA's), (21, 41640),

Gene: SG4_31 Start: 27919, Stop: 28167, Start Num: 12
Candidate Starts for SG4_31:
(Start: 12 @27919 has 4 MA's), (25, 28135),

Gene: Schiebel_61 Start: 41085, Stop: 41306, Start Num: 13
Candidate Starts for Schiebel_61:
(Start: 13 @41085 has 61 MA's), (21, 41178),

Gene: Scoot17C_70 Start: 57224, Stop: 57439, Start Num: 18
Candidate Starts for Scoot17C_70:
(Start: 15 @57215 has 9 MA's), (Start: 18 @57224 has 61 MA's), (20, 57263), (27, 57410), (28, 57416),

Gene: Serendipity_69 Start: 57579, Stop: 57794, Start Num: 18
Candidate Starts for Serendipity_69:
(Start: 15 @57570 has 9 MA's), (Start: 18 @57579 has 61 MA's), (20, 57618), (27, 57765), (28, 57771),

Gene: Serpentine_0070 Start: 57662, Stop: 57877, Start Num: 18
Candidate Starts for Serpentine_0070:
(Start: 15 @57653 has 9 MA's), (Start: 18 @57662 has 61 MA's), (20, 57701), (27, 57848), (28, 57854),

Gene: ShaboiShabazz_62 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for ShaboiShabazz_62:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: ShawBrad_78 Start: 43937, Stop: 44137, Start Num: 14
Candidate Starts for ShawBrad_78:
(8, 43835), (9, 43841), (11, 43892), (Start: 14 @43937 has 3 MA's), (16, 43949),

Gene: SilverBell_70 Start: 57542, Stop: 57757, Start Num: 18
Candidate Starts for SilverBell_70:
(Start: 15 @57533 has 9 MA's), (Start: 18 @57542 has 61 MA's), (20, 57581), (27, 57728), (28, 57734),

Gene: Sizemore_64 Start: 41534, Stop: 41755, Start Num: 13
Candidate Starts for Sizemore_64:
(Start: 13 @41534 has 61 MA's), (21, 41627),

Gene: Skippy_71 Start: 57515, Stop: 57730, Start Num: 18
Candidate Starts for Skippy_71:
(Start: 15 @57506 has 9 MA's), (Start: 18 @57515 has 61 MA's), (20, 57554), (27, 57701), (28, 57707),

Gene: Sweets_63 Start: 41540, Stop: 41761, Start Num: 13
Candidate Starts for Sweets_63:
(Start: 13 @41540 has 61 MA's), (21, 41633),

Gene: Swish_70 Start: 57532, Stop: 57747, Start Num: 18
Candidate Starts for Swish_70:
(Start: 18 @57532 has 61 MA's), (20, 57571), (27, 57718), (28, 57724),

Gene: TallGrassMM_68 Start: 57172, Stop: 57387, Start Num: 18
Candidate Starts for TallGrassMM_68:

(Start: 15 @57163 has 9 MA's), (Start: 18 @57172 has 61 MA's), (20, 57211), (27, 57358), (28, 57364),

Gene: Thora_68 Start: 57612, Stop: 57827, Start Num: 18
Candidate Starts for Thora_68:
(Start: 15 @57603 has 9 MA's), (Start: 18 @57612 has 61 MA's), (20, 57651), (27, 57798), (28, 57804),

Gene: ThreeOh3D2_71 Start: 57789, Stop: 58004, Start Num: 18
Candidate Starts for ThreeOh3D2_71:
(Start: 15 @57780 has 9 MA's), (Start: 18 @57789 has 61 MA's), (20, 57828), (27, 57975), (28, 57981),

Gene: TomBrady_63 Start: 41546, Stop: 41767, Start Num: 13
Candidate Starts for TomBrady_63:
(Start: 13 @41546 has 61 MA's), (21, 41639),

Gene: UAch1_70 Start: 57513, Stop: 57728, Start Num: 18
Candidate Starts for UAch1_70:
(Start: 15 @57504 has 9 MA's), (Start: 18 @57513 has 61 MA's), (20, 57552), (27, 57699), (28, 57705),

Gene: Vista_68 Start: 57268, Stop: 57483, Start Num: 18
Candidate Starts for Vista_68:
(Start: 15 @57259 has 9 MA's), (Start: 18 @57268 has 61 MA's), (20, 57307), (27, 57454), (28, 57460),

Gene: Wallhey_70 Start: 57375, Stop: 57590, Start Num: 18
Candidate Starts for Wallhey_70:
(Start: 15 @57366 has 9 MA's), (Start: 18 @57375 has 61 MA's), (20, 57414), (27, 57561), (28, 57567),

Gene: Waterdiva_70 Start: 57645, Stop: 57860, Start Num: 18
Candidate Starts for Waterdiva_70:
(Start: 15 @57636 has 9 MA's), (Start: 18 @57645 has 61 MA's), (20, 57684), (27, 57831), (28, 57837),

Gene: Wendigo_64 Start: 41524, Stop: 41745, Start Num: 13
Candidate Starts for Wendigo_64:
(Start: 13 @41524 has 61 MA's), (21, 41617),

Gene: Wrigley_23 Start: 20247, Stop: 20450, Start Num: 17
Candidate Starts for Wrigley_23:
(Start: 17 @20247 has 7 MA's), (19, 20274),

Gene: Xavier_69 Start: 57273, Stop: 57488, Start Num: 18
Candidate Starts for Xavier_69:
(Start: 15 @57264 has 9 MA's), (Start: 18 @57273 has 61 MA's), (20, 57312), (27, 57459), (28, 57465),

Gene: Yoshand_70 Start: 57545, Stop: 57760, Start Num: 18
Candidate Starts for Yoshand_70:
(Start: 18 @57545 has 61 MA's), (20, 57584), (27, 57731), (28, 57737),

Gene: ZoMa_62 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for ZoMa_62:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Zombie_63 Start: 41545, Stop: 41766, Start Num: 13
Candidate Starts for Zombie_63:
(Start: 13 @41545 has 61 MA's), (21, 41638),

Gene: Zonia_70 Start: 57826, Stop: 58041, Start Num: 18
Candidate Starts for Zonia_70:
(Start: 15 @57817 has 9 MA's), (Start: 18 @57826 has 61 MA's), (20, 57865), (27, 58012), (28, 58018),