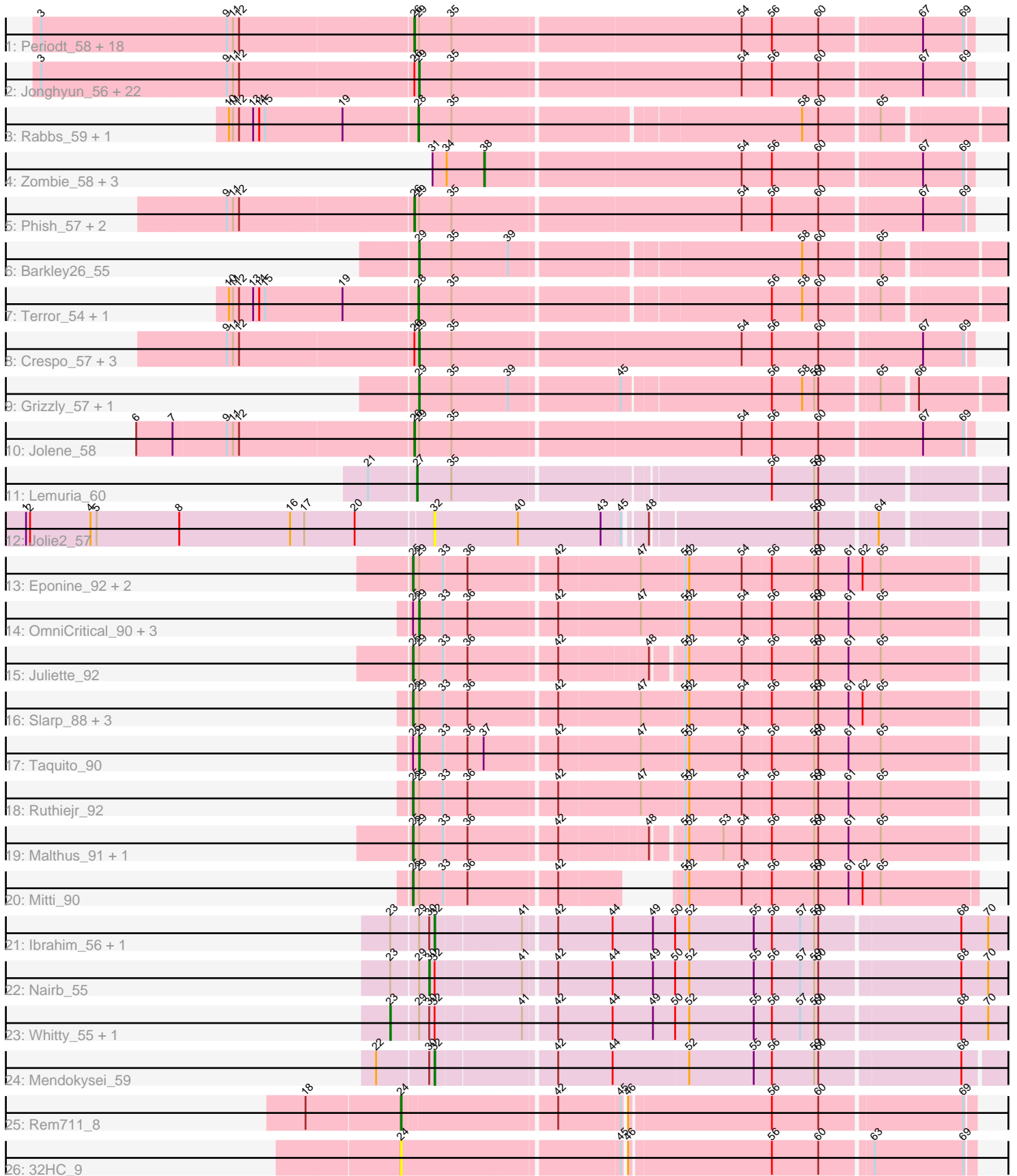


Pham 197997



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 197997 Report

This analysis was run 01/18/25 on database version 583.

Pham number 197997 has 88 members, 6 are drafts.

Phages represented in each track:

- Track 1 : Periodt_58, Kareem_57, Aroostook_58, Marmie_58, Plagueis_58, Gideon_58, Renaissance_57, Cherrybomb426_57, Annihilator_56, Phreak_58, Mowgli_58, CLED96_57, GoldenAsh_56, ZoMa_55, BQuat_57, LouisV14_59, Coleslaw_57, ECartman_56, Halo_59
- Track 2 : Jonghyun_56, Sizemore_57, Olga_57, Hotshotbaby7_58, BPs_56, BruceB_56, TinaBug_56, Chance64_58, Liefie_55, Avrafan_56, Darionha_58, Frosty24_56, Gomashi_56, PinkYoshi_57, Jane_57, Camri_57, Wendigo_55, Sweets_56, Angel_56, OctaviousRex_56, Kasen3_57, DMoney_56, Schiebel_56
- Track 3 : Rabbs_59, Sneeze_58
- Track 4 : Zombie_58, Hope_58, JorRay_59, AzulaCat_56
- Track 5 : Phish_57, Cedasite_58, Remy19_58
- Track 6 : Barkley26_55
- Track 7 : Terror_54, Taheera_54
- Track 8 : Crespo_57, ShaboiShabazz_57, CassieYates_58, TomBrady_58
- Track 9 : Grizzly_57, Peeb_57
- Track 10 : Jolene_58
- Track 11 : Lemuria_60
- Track 12 : Jolie2_57
- Track 13 : Eponine_92, Fionnbharth_90, Wintermute_90
- Track 14 : OmniCritical_90, Y10_86, JF1_90, Y2_86
- Track 15 : Juliette_92
- Track 16 : Slarp_88, Chancellor_90, SamScheppers_89, Cheetobro_88
- Track 17 : Taquito_90
- Track 18 : Ruthiejr_92
- Track 19 : Malthus_91, Kraw_91
- Track 20 : Mitti_90
- Track 21 : Ibrahim_56, Bernal13_56
- Track 22 : Nairb_55
- Track 23 : Whitty_55, RonRayGun_56
- Track 24 : Mendokysei_59
- Track 25 : Rem711_8
- Track 26 : 32HC_9

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

The start number called the most often in the published annotations is 29, it was called in 33 of the 82 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Angel_56, Avrafan_56, BPs_56, Barkley26_55, BruceB_56, Camri_57, CassieYates_58, Chance64_58, Crespo_57, DMoney_56, Darionha_58, Frosty24_56, Gomashi_56, Grizzly_57, Hotshotbaby7_58, JF1_90, Jane_57, Jonghyun_56, Kasen3_57, Liefie_55, OctaviousRex_56, Olga_57, OmniCritical_90, Peeb_57, PinkYoshi_57, Schiebel_56, ShaboiShabazz_57, Sizemore_57, Sweets_56, Taquito_90, TinaBug_56, TomBrady_58, Wendigo_55, Y10_86, Y2_86,

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

- Annihilator_56, Aroostook_58, BQuat_57, Bernal13_56, CLED96_57, Cedasite_58, Chancellor_90, Cheetobro_88, Cherrybomb426_57, Coleslaw_57, ECartman_56, Eponine_92, Fionnbharth_90, Gideon_58, GoldenAsh_56, Halo_59, Ibrahim_56, Jolene_58, Juliette_92, Kareem_57, Kraw_91, LouisV14_59, Malthus_91, Marmie_58, Mitti_90, Mowgli_58, Nairb_55, Periodt_58, Phish_57, Phreak_58, Plagueis_58, Remy19_58, Renaissance_57, RonRayGun_56, Ruthiejr_92, SamScheppers_89, Slarp_88, Whitty_55, Wintermute_90, ZoMa_55,

Genes that do not have the "Most Annotated" start:

- 32HC_9, AzulaCat_56, Hope_58, Jolie2_57, JorRay_59, Lemuria_60, Mendokysei_59, Rabbs_59, Rem711_8, Sneeze_58, Taheera_54, Terror_54, Zombie_58,

Summary by start number:

Start 23:

- Found in 5 of 88 (5.7%) of genes in pham
- Manual Annotations of this start: 2 of 82
- Called 40.0% of time when present
- Phage (with cluster) where this start called: RonRayGun_56 (T), Whitty_55 (T),

Start 24:

- Found in 2 of 88 (2.3%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 32HC_9 (Z), Rem711_8 (Z),

Start 25:

- Found in 17 of 88 (19.3%) of genes in pham
- Manual Annotations of this start: 11 of 82
- Called 70.6% of time when present
- Phage (with cluster) where this start called: Chancellor_90 (K4), Cheetobro_88 (K4), Eponine_92 (K4), Fionnbharth_90 (K4), Juliette_92 (K4), Kraw_91 (K4), Malthus_91 (K4), Mitti_90 (K4), Ruthiejr_92 (K4), SamScheppers_89 (K4), Slarp_88 (K4), Wintermute_90 (K4),

Start 26:

- Found in 50 of 88 (56.8%) of genes in pham
- Manual Annotations of this start: 23 of 82
- Called 46.0% of time when present

- Phage (with cluster) where this start called: Annihilator_56 (G1), Aroostook_58 (G1), BQuat_57 (G1), CLED96_57 (G1), Cedasite_58 (G1), Cherrybomb426_57 (G1), Coleslaw_57 (G1), ECartman_56 (G1), Gideon_58 (G1), GoldenAsh_56 (G1), Halo_59 (G1), Jolene_58 (G1), Kareem_57 (G1), LouisV14_59 (G1), Marmie_58 (G1), Mowgli_58 (G1), Periodt_58 (G1), Phish_57 (G1), Phreak_58 (G1), Plagueis_58 (G1), Remy19_58 (G1), Renaissance_57 (G1), ZoMa_55 (G1),

Start 27:

- Found in 1 of 88 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lemuria_60 (G4),

Start 28:

- Found in 4 of 88 (4.5%) of genes in pham
- Manual Annotations of this start: 4 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rabbs_59 (G1), Sneeze_58 (G1), Taheera_54 (G1), Terror_54 (G1),

Start 29:

- Found in 75 of 88 (85.2%) of genes in pham
- Manual Annotations of this start: 33 of 82
- Called 46.7% of time when present
- Phage (with cluster) where this start called: Angel_56 (G1), Avrafan_56 (G1), BPs_56 (G1), Barkley26_55 (G1), BruceB_56 (G1), Camri_57 (G1), CassieYates_58 (G1), Chance64_58 (G1), Crespo_57 (G1), DMoney_56 (G1), Darionha_58 (G1), Frosty24_56 (G1), Gomashi_56 (G1), Grizzly_57 (G1), Hotshotbaby7_58 (G1), JF1_90 (K4), Jane_57 (G1), Jonghyun_56 (G1), Kasen3_57 (G1), Liefie_55 (G1), OctaviousRex_56 (G1), Olga_57 (G1), OmniCritical_90 (K4), Peeb_57 (G1), PinkYoshi_57 (G1), Schiebel_56 (G1), ShaboiShabazz_57 (G1), Sizemore_57 (G1), Sweets_56 (G1), Taquito_90 (K4), TinaBug_56 (G1), TomBrady_58 (G1), Wendigo_55 (G1), Y10_86 (K4), Y2_86 (K4),

Start 30:

- Found in 6 of 88 (6.8%) of genes in pham
- Manual Annotations of this start: 1 of 82
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Nairb_55 (T),

Start 32:

- Found in 7 of 88 (8.0%) of genes in pham
- Manual Annotations of this start: 3 of 82
- Called 57.1% of time when present
- Phage (with cluster) where this start called: Bernal13_56 (T), Ibrahim_56 (T), Jolie2_57 (G4), Mendokysei_59 (T),

Start 38:

- Found in 4 of 88 (4.5%) of genes in pham
- Manual Annotations of this start: 3 of 82
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AzulaCat_56 (G1), Hope_58 (G1), JorRay_59 (G1), Zombie_58 (G1),

Summary by clusters:

There are 5 clusters represented in this pham: Z, G4, T, G1, K4,

Info for manual annotations of cluster G1:

- Start number 26 was manually annotated 23 times for cluster G1.
- Start number 28 was manually annotated 4 times for cluster G1.
- Start number 29 was manually annotated 28 times for cluster G1.
- Start number 38 was manually annotated 3 times for cluster G1.

Info for manual annotations of cluster G4:

- Start number 27 was manually annotated 1 time for cluster G4.

Info for manual annotations of cluster K4:

- Start number 25 was manually annotated 11 times for cluster K4.
- Start number 29 was manually annotated 5 times for cluster K4.

Info for manual annotations of cluster T:

- Start number 23 was manually annotated 2 times for cluster T.
- Start number 30 was manually annotated 1 time for cluster T.
- Start number 32 was manually annotated 3 times for cluster T.

Info for manual annotations of cluster Z:

- Start number 24 was manually annotated 1 time for cluster Z.

Gene Information:

Gene: 32HC_9 Start: 4702, Stop: 3899, Start Num: 24

Candidate Starts for 32HC_9:

(Start: 24 @4702 has 1 MA's), (45, 4393), (46, 4390), (56, 4186), (60, 4117), (63, 4045), (69, 3913),

Gene: Angel_56 Start: 38960, Stop: 39751, Start Num: 29

Candidate Starts for Angel_56:

(3, 38411), (9, 38684), (11, 38693), (12, 38702), (Start: 26 @38954 has 23 MA's), (Start: 29 @38960 has 33 MA's), (35, 39008), (54, 39422), (56, 39467), (60, 39536), (67, 39680), (69, 39740),

Gene: Annihilator_56 Start: 38960, Stop: 39757, Start Num: 26

Candidate Starts for Annihilator_56:

(3, 38417), (9, 38690), (11, 38699), (12, 38708), (Start: 26 @38960 has 23 MA's), (Start: 29 @38966 has 33 MA's), (35, 39014), (54, 39428), (56, 39473), (60, 39542), (67, 39686), (69, 39746),

Gene: Aroostook_58 Start: 39416, Stop: 40213, Start Num: 26

Candidate Starts for Aroostook_58:

(3, 38873), (9, 39146), (11, 39155), (12, 39164), (Start: 26 @39416 has 23 MA's), (Start: 29 @39422 has 33 MA's), (35, 39470), (54, 39884), (56, 39929), (60, 39998), (67, 40142), (69, 40202),

Gene: Avrafan_56 Start: 38975, Stop: 39766, Start Num: 29

Candidate Starts for Avrafan_56:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: AzulaCat_56 Start: 39516, Stop: 40211, Start Num: 38

Candidate Starts for AzulaCat_56:

(31, 39441), (34, 39462), (Start: 38 @39516 has 3 MA's), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),

Gene: BPs_56 Start: 38975, Stop: 39766, Start Num: 29

Candidate Starts for BPs_56:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: BQuat_57 Start: 39406, Stop: 40203, Start Num: 26

Candidate Starts for BQuat_57:

(3, 38863), (9, 39136), (11, 39145), (12, 39154), (Start: 26 @39406 has 23 MA's), (Start: 29 @39412 has 33 MA's), (35, 39460), (54, 39874), (56, 39919), (60, 39988), (67, 40132), (69, 40192),

Gene: Barkley26_55 Start: 38713, Stop: 39525, Start Num: 29

Candidate Starts for Barkley26_55:

(Start: 29 @38713 has 33 MA's), (35, 38761), (39, 38842), (58, 39244), (60, 39268), (65, 39349),

Gene: Bernal13_56 Start: 40310, Stop: 39471, Start Num: 32

Candidate Starts for Bernal13_56:

(Start: 23 @40367 has 2 MA's), (Start: 29 @40331 has 33 MA's), (Start: 30 @40316 has 1 MA's), (Start: 32 @40310 has 3 MA's), (41, 40190), (42, 40148), (44, 40067), (49, 40007), (50, 39974), (52, 39953), (55, 39857), (56, 39830), (57, 39788), (59, 39767), (60, 39761), (68, 39560), (70, 39521),

Gene: BruceB_56 Start: 38975, Stop: 39766, Start Num: 29

Candidate Starts for BruceB_56:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: CLED96_57 Start: 38969, Stop: 39766, Start Num: 26

Candidate Starts for CLED96_57:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: Camri_57 Start: 38975, Stop: 39766, Start Num: 29

Candidate Starts for Camri_57:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: CassieYates_58 Start: 39420, Stop: 40211, Start Num: 29

Candidate Starts for CassieYates_58:

(9, 39144), (11, 39153), (12, 39162), (Start: 26 @39414 has 23 MA's), (Start: 29 @39420 has 33 MA's), (35, 39468), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),

Gene: Cedasite_58 Start: 39414, Stop: 40211, Start Num: 26

Candidate Starts for Cedasite_58:

(9, 39144), (11, 39153), (12, 39162), (Start: 26 @39414 has 23 MA's), (Start: 29 @39420 has 33 MA's), (35, 39468), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),

Gene: Chance64_58 Start: 39422, Stop: 40213, Start Num: 29

Candidate Starts for Chance64_58:

(3, 38873), (9, 39146), (11, 39155), (12, 39164), (Start: 26 @39416 has 23 MA's), (Start: 29 @39422 has 33 MA's), (35, 39470), (54, 39884), (56, 39929), (60, 39998), (67, 40142), (69, 40202),

Gene: Chancellor_90 Start: 54032, Stop: 54832, Start Num: 25

Candidate Starts for Chancellor_90:

(Start: 25 @54032 has 11 MA's), (Start: 29 @54041 has 33 MA's), (33, 54074), (36, 54107), (42, 54230), (47, 54344), (51, 54404), (52, 54410), (54, 54488), (56, 54530), (59, 54593), (60, 54599), (61, 54644), (62, 54665), (65, 54692),

Gene: Cheetobro_88 Start: 53586, Stop: 54386, Start Num: 25

Candidate Starts for Cheetobro_88:

(Start: 25 @53586 has 11 MA's), (Start: 29 @53595 has 33 MA's), (33, 53628), (36, 53661), (42, 53784), (47, 53898), (51, 53958), (52, 53964), (54, 54042), (56, 54084), (59, 54147), (60, 54153), (61, 54198), (62, 54219), (65, 54246),

Gene: Cherrybomb426_57 Start: 38969, Stop: 39766, Start Num: 26

Candidate Starts for Cherrybomb426_57:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: Coleslaw_57 Start: 39406, Stop: 40203, Start Num: 26

Candidate Starts for Coleslaw_57:

(3, 38863), (9, 39136), (11, 39145), (12, 39154), (Start: 26 @39406 has 23 MA's), (Start: 29 @39412 has 33 MA's), (35, 39460), (54, 39874), (56, 39919), (60, 39988), (67, 40132), (69, 40192),

Gene: Crespo_57 Start: 39421, Stop: 40212, Start Num: 29

Candidate Starts for Crespo_57:

(9, 39145), (11, 39154), (12, 39163), (Start: 26 @39415 has 23 MA's), (Start: 29 @39421 has 33 MA's), (35, 39469), (54, 39883), (56, 39928), (60, 39997), (67, 40141), (69, 40201),

Gene: DMoney_56 Start: 38975, Stop: 39766, Start Num: 29

Candidate Starts for DMoney_56:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: Darionha_58 Start: 39420, Stop: 40211, Start Num: 29

Candidate Starts for Darionha_58:

(3, 38871), (9, 39144), (11, 39153), (12, 39162), (Start: 26 @39414 has 23 MA's), (Start: 29 @39420 has 33 MA's), (35, 39468), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),

Gene: ECartman_56 Start: 39414, Stop: 40211, Start Num: 26

Candidate Starts for ECartman_56:

(3, 38871), (9, 39144), (11, 39153), (12, 39162), (Start: 26 @39414 has 23 MA's), (Start: 29 @39420 has 33 MA's), (35, 39468), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),

Gene: Eponine_92 Start: 55012, Stop: 55812, Start Num: 25

Candidate Starts for Eponine_92:

(Start: 25 @55012 has 11 MA's), (Start: 29 @55021 has 33 MA's), (33, 55054), (36, 55087), (42, 55210), (47, 55324), (51, 55384), (52, 55390), (54, 55468), (56, 55510), (59, 55573), (60, 55579), (61, 55624), (62, 55645), (65, 55672),

Gene: Fionnbharth_90 Start: 54410, Stop: 55210, Start Num: 25

Candidate Starts for Fionnbharth_90:

(Start: 25 @54410 has 11 MA's), (Start: 29 @54419 has 33 MA's), (33, 54452), (36, 54485), (42, 54608), (47, 54722), (51, 54782), (52, 54788), (54, 54866), (56, 54908), (59, 54971), (60, 54977), (61, 55022), (62, 55043), (65, 55070),

Gene: Frosty24_56 Start: 38975, Stop: 39766, Start Num: 29

Candidate Starts for Frosty24_56:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: Gideon_58 Start: 39416, Stop: 40213, Start Num: 26

Candidate Starts for Gideon_58:

(3, 38873), (9, 39146), (11, 39155), (12, 39164), (Start: 26 @39416 has 23 MA's), (Start: 29 @39422 has 33 MA's), (35, 39470), (54, 39884), (56, 39929), (60, 39998), (67, 40142), (69, 40202),

Gene: GoldenAsh_56 Start: 38954, Stop: 39751, Start Num: 26

Candidate Starts for GoldenAsh_56:

(3, 38411), (9, 38684), (11, 38693), (12, 38702), (Start: 26 @38954 has 23 MA's), (Start: 29 @38960 has 33 MA's), (35, 39008), (54, 39422), (56, 39467), (60, 39536), (67, 39680), (69, 39740),

Gene: Gomashi_56 Start: 38976, Stop: 39767, Start Num: 29

Candidate Starts for Gomashi_56:

(3, 38427), (9, 38700), (11, 38709), (12, 38718), (Start: 26 @38970 has 23 MA's), (Start: 29 @38976 has 33 MA's), (35, 39024), (54, 39438), (56, 39483), (60, 39552), (67, 39696), (69, 39756),

Gene: Grizzly_57 Start: 39236, Stop: 40054, Start Num: 29

Candidate Starts for Grizzly_57:

(Start: 29 @39236 has 33 MA's), (35, 39284), (39, 39365), (45, 39518), (56, 39728), (58, 39773), (59, 39791), (60, 39797), (65, 39878), (66, 39923),

Gene: Halo_59 Start: 39962, Stop: 40759, Start Num: 26

Candidate Starts for Halo_59:

(3, 39419), (9, 39692), (11, 39701), (12, 39710), (Start: 26 @39962 has 23 MA's), (Start: 29 @39968 has 33 MA's), (35, 40016), (54, 40430), (56, 40475), (60, 40544), (67, 40688), (69, 40748),

Gene: Hope_58 Start: 39516, Stop: 40211, Start Num: 38

Candidate Starts for Hope_58:

(31, 39441), (34, 39462), (Start: 38 @39516 has 3 MA's), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),

Gene: Hotshotbaby7_58 Start: 39422, Stop: 40213, Start Num: 29

Candidate Starts for Hotshotbaby7_58:

(3, 38873), (9, 39146), (11, 39155), (12, 39164), (Start: 26 @39416 has 23 MA's), (Start: 29 @39422 has 33 MA's), (35, 39470), (54, 39884), (56, 39929), (60, 39998), (67, 40142), (69, 40202),

Gene: Ibrahim_56 Start: 40514, Stop: 39675, Start Num: 32

Candidate Starts for Ibrahim_56:

(Start: 23 @40571 has 2 MA's), (Start: 29 @40535 has 33 MA's), (Start: 30 @40520 has 1 MA's), (Start: 32 @40514 has 3 MA's), (41, 40394), (42, 40352), (44, 40271), (49, 40211), (50, 40178), (52, 40157), (55, 40061), (56, 40034), (57, 39992), (59, 39971), (60, 39965), (68, 39764), (70, 39725),

Gene: JF1_90 Start: 54343, Stop: 55134, Start Num: 29

Candidate Starts for JF1_90:

(Start: 25 @54334 has 11 MA's), (Start: 29 @54343 has 33 MA's), (33, 54376), (36, 54409), (42, 54532), (47, 54646), (51, 54706), (52, 54712), (54, 54790), (56, 54832), (59, 54895), (60, 54901), (61, 54946), (65, 54994),

Gene: Jane_57 Start: 38975, Stop: 39766, Start Num: 29

Candidate Starts for Jane_57:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: Jolene_58 Start: 39818, Stop: 40615, Start Num: 26

Candidate Starts for Jolene_58:

(6, 39416), (7, 39470), (9, 39548), (11, 39557), (12, 39566), (Start: 26 @39818 has 23 MA's), (Start: 29 @39824 has 33 MA's), (35, 39872), (54, 40286), (56, 40331), (60, 40400), (67, 40544), (69, 40604),

Gene: Jolie2_57 Start: 40488, Stop: 41270, Start Num: 32

Candidate Starts for Jolie2_57:

(1, 39891), (2, 39897), (4, 39987), (5, 39996), (8, 40119), (16, 40284), (17, 40305), (20, 40380), (Start: 32 @40488 has 3 MA's), (40, 40605), (43, 40728), (45, 40755), (48, 40779), (59, 41007), (60, 41013), (64, 41091),

Gene: Jonghyun_56 Start: 39423, Stop: 40214, Start Num: 29

Candidate Starts for Jonghyun_56:

(3, 38874), (9, 39147), (11, 39156), (12, 39165), (Start: 26 @39417 has 23 MA's), (Start: 29 @39423 has 33 MA's), (35, 39471), (54, 39885), (56, 39930), (60, 39999), (67, 40143), (69, 40203),

Gene: JorRay_59 Start: 39516, Stop: 40211, Start Num: 38

Candidate Starts for JorRay_59:

(31, 39441), (34, 39462), (Start: 38 @39516 has 3 MA's), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),

Gene: Juliette_92 Start: 54447, Stop: 55226, Start Num: 25

Candidate Starts for Juliette_92:

(Start: 25 @54447 has 11 MA's), (Start: 29 @54456 has 33 MA's), (33, 54489), (36, 54522), (42, 54645), (48, 54765), (51, 54798), (52, 54804), (54, 54882), (56, 54924), (59, 54987), (60, 54993), (61, 55038), (65, 55086),

Gene: Kareem_57 Start: 38969, Stop: 39766, Start Num: 26

Candidate Starts for Kareem_57:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: Kasen3_57 Start: 38961, Stop: 39755, Start Num: 29

Candidate Starts for Kasen3_57:

(3, 38412), (9, 38685), (11, 38694), (12, 38703), (Start: 26 @38955 has 23 MA's), (Start: 29 @38961 has 33 MA's), (35, 39009), (54, 39423), (56, 39468), (60, 39537), (67, 39684), (69, 39744),

Gene: Kraw_91 Start: 54162, Stop: 54941, Start Num: 25

Candidate Starts for Kraw_91:

(Start: 25 @54162 has 11 MA's), (Start: 29 @54171 has 33 MA's), (33, 54204), (36, 54237), (42, 54360), (48, 54480), (51, 54513), (52, 54519), (53, 54570), (54, 54597), (56, 54639), (59, 54702), (60, 54708), (61, 54753), (65, 54801),

Gene: Lemuria_60 Start: 42095, Stop: 42910, Start Num: 27

Candidate Starts for Lemuria_60:

(21, 42029), (Start: 27 @42095 has 1 MA's), (35, 42146), (56, 42584), (59, 42647), (60, 42653),

Gene: Liefie_55 Start: 39086, Stop: 39850, Start Num: 29

Candidate Starts for Liefie_55:

(3, 38537), (9, 38810), (11, 38819), (12, 38828), (Start: 26 @39080 has 23 MA's), (Start: 29 @39086 has 33 MA's), (35, 39134), (54, 39521), (56, 39566), (60, 39635), (67, 39779), (69, 39839),

Gene: LouisV14_59 Start: 41234, Stop: 42031, Start Num: 26

Candidate Starts for LouisV14_59:

(3, 40691), (9, 40964), (11, 40973), (12, 40982), (Start: 26 @41234 has 23 MA's), (Start: 29 @41240 has 33 MA's), (35, 41288), (54, 41702), (56, 41747), (60, 41816), (67, 41960), (69, 42020),

Gene: Malthus_91 Start: 54156, Stop: 54935, Start Num: 25

Candidate Starts for Malthus_91:

(Start: 25 @54156 has 11 MA's), (Start: 29 @54165 has 33 MA's), (33, 54198), (36, 54231), (42, 54354), (48, 54474), (51, 54507), (52, 54513), (53, 54564), (54, 54591), (56, 54633), (59, 54696), (60, 54702), (61, 54747), (65, 54795),

Gene: Marmie_58 Start: 39415, Stop: 40212, Start Num: 26

Candidate Starts for Marmie_58:

(3, 38872), (9, 39145), (11, 39154), (12, 39163), (Start: 26 @39415 has 23 MA's), (Start: 29 @39421 has 33 MA's), (35, 39469), (54, 39883), (56, 39928), (60, 39997), (67, 40141), (69, 40201),

Gene: Mendokysei_59 Start: 41092, Stop: 40265, Start Num: 32

Candidate Starts for Mendokysei_59:

(22, 41170), (Start: 30 @41098 has 1 MA's), (Start: 32 @41092 has 3 MA's), (42, 40930), (44, 40849), (52, 40738), (55, 40642), (56, 40615), (59, 40552), (60, 40546), (68, 40345),

Gene: Mitti_90 Start: 54306, Stop: 55028, Start Num: 25

Candidate Starts for Mitti_90:

(Start: 25 @54306 has 11 MA's), (Start: 29 @54315 has 33 MA's), (33, 54348), (36, 54381), (42, 54504), (51, 54600), (52, 54606), (54, 54684), (56, 54726), (59, 54789), (60, 54795), (61, 54840), (62, 54861), (65, 54888),

Gene: Mowgli_58 Start: 39415, Stop: 40212, Start Num: 26

Candidate Starts for Mowgli_58:

(3, 38872), (9, 39145), (11, 39154), (12, 39163), (Start: 26 @39415 has 23 MA's), (Start: 29 @39421 has 33 MA's), (35, 39469), (54, 39883), (56, 39928), (60, 39997), (67, 40141), (69, 40201),

Gene: Nairb_55 Start: 40316, Stop: 39471, Start Num: 30

Candidate Starts for Nairb_55:

(Start: 23 @40367 has 2 MA's), (Start: 29 @40331 has 33 MA's), (Start: 30 @40316 has 1 MA's), (Start: 32 @40310 has 3 MA's), (41, 40190), (42, 40148), (44, 40067), (49, 40007), (50, 39974), (52, 39953), (55, 39857), (56, 39830), (57, 39788), (59, 39767), (60, 39761), (68, 39560), (70, 39521),

Gene: OctaviousRex_56 Start: 38975, Stop: 39766, Start Num: 29

Candidate Starts for OctaviousRex_56:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: Olga_57 Start: 38975, Stop: 39766, Start Num: 29

Candidate Starts for Olga_57:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: OmniCritical_90 Start: 54317, Stop: 55108, Start Num: 29
Candidate Starts for OmniCritical_90:

(Start: 25 @54308 has 11 MA's), (Start: 29 @54317 has 33 MA's), (33, 54350), (36, 54383), (42, 54506), (47, 54620), (51, 54680), (52, 54686), (54, 54764), (56, 54806), (59, 54869), (60, 54875), (61, 54920), (65, 54968),

Gene: Peeb_57 Start: 39360, Stop: 40178, Start Num: 29
Candidate Starts for Peeb_57:

(Start: 29 @39360 has 33 MA's), (35, 39408), (39, 39489), (45, 39642), (56, 39852), (58, 39897), (59, 39915), (60, 39921), (65, 40002), (66, 40047),

Gene: Periodt_58 Start: 39807, Stop: 40604, Start Num: 26
Candidate Starts for Periodt_58:

(3, 39264), (9, 39537), (11, 39546), (12, 39555), (Start: 26 @39807 has 23 MA's), (Start: 29 @39813 has 33 MA's), (35, 39861), (54, 40275), (56, 40320), (60, 40389), (67, 40533), (69, 40593),

Gene: Phish_57 Start: 39414, Stop: 40211, Start Num: 26
Candidate Starts for Phish_57:

(9, 39144), (11, 39153), (12, 39162), (Start: 26 @39414 has 23 MA's), (Start: 29 @39420 has 33 MA's), (35, 39468), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),

Gene: Phreak_58 Start: 39414, Stop: 40211, Start Num: 26
Candidate Starts for Phreak_58:

(3, 38871), (9, 39144), (11, 39153), (12, 39162), (Start: 26 @39414 has 23 MA's), (Start: 29 @39420 has 33 MA's), (35, 39468), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),

Gene: PinkYoshi_57 Start: 38966, Stop: 39757, Start Num: 29
Candidate Starts for PinkYoshi_57:

(3, 38417), (9, 38690), (11, 38699), (12, 38708), (Start: 26 @38960 has 23 MA's), (Start: 29 @38966 has 33 MA's), (35, 39014), (54, 39428), (56, 39473), (60, 39542), (67, 39686), (69, 39746),

Gene: Plagueis_58 Start: 39235, Stop: 40032, Start Num: 26
Candidate Starts for Plagueis_58:

(3, 38692), (9, 38965), (11, 38974), (12, 38983), (Start: 26 @39235 has 23 MA's), (Start: 29 @39241 has 33 MA's), (35, 39289), (54, 39703), (56, 39748), (60, 39817), (67, 39961), (69, 40021),

Gene: Rabbs_59 Start: 39343, Stop: 40155, Start Num: 28
Candidate Starts for Rabbs_59:

(10, 39073), (11, 39079), (12, 39088), (13, 39109), (14, 39118), (15, 39127), (19, 39241), (Start: 28 @39343 has 4 MA's), (35, 39391), (58, 39874), (60, 39898), (65, 39979),

Gene: Rem711_8 Start: 4757, Stop: 3960, Start Num: 24
Candidate Starts for Rem711_8:

(18, 4892), (Start: 24 @4757 has 1 MA's), (42, 4544), (45, 4454), (46, 4451), (56, 4247), (60, 4178), (69, 3974),

Gene: Remy19_58 Start: 39414, Stop: 40211, Start Num: 26
Candidate Starts for Remy19_58:

(9, 39144), (11, 39153), (12, 39162), (Start: 26 @39414 has 23 MA's), (Start: 29 @39420 has 33 MA's), (35, 39468), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),

Gene: Renaissance_57 Start: 38969, Stop: 39766, Start Num: 26

Candidate Starts for Renaissance_57:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: RonRayGun_56 Start: 40571, Stop: 39675, Start Num: 23

Candidate Starts for RonRayGun_56:

(Start: 23 @40571 has 2 MA's), (Start: 29 @40535 has 33 MA's), (Start: 30 @40520 has 1 MA's), (Start: 32 @40514 has 3 MA's), (41, 40394), (42, 40352), (44, 40271), (49, 40211), (50, 40178), (52, 40157), (55, 40061), (56, 40034), (57, 39992), (59, 39971), (60, 39965), (68, 39764), (70, 39725),

Gene: Ruthiejr_92 Start: 54201, Stop: 55001, Start Num: 25

Candidate Starts for Ruthiejr_92:

(Start: 25 @54201 has 11 MA's), (Start: 29 @54210 has 33 MA's), (33, 54243), (36, 54276), (42, 54399), (47, 54513), (51, 54573), (52, 54579), (54, 54657), (56, 54699), (59, 54762), (60, 54768), (61, 54813), (65, 54861),

Gene: SamScheppers_89 Start: 54686, Stop: 55486, Start Num: 25

Candidate Starts for SamScheppers_89:

(Start: 25 @54686 has 11 MA's), (Start: 29 @54695 has 33 MA's), (33, 54728), (36, 54761), (42, 54884), (47, 54998), (51, 55058), (52, 55064), (54, 55142), (56, 55184), (59, 55247), (60, 55253), (61, 55298), (62, 55319), (65, 55346),

Gene: Schiebel_56 Start: 38960, Stop: 39751, Start Num: 29

Candidate Starts for Schiebel_56:

(3, 38411), (9, 38684), (11, 38693), (12, 38702), (Start: 26 @38954 has 23 MA's), (Start: 29 @38960 has 33 MA's), (35, 39008), (54, 39422), (56, 39467), (60, 39536), (67, 39680), (69, 39740),

Gene: ShaboiShabazz_57 Start: 39420, Stop: 40211, Start Num: 29

Candidate Starts for ShaboiShabazz_57:

(9, 39144), (11, 39153), (12, 39162), (Start: 26 @39414 has 23 MA's), (Start: 29 @39420 has 33 MA's), (35, 39468), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),

Gene: Sizemore_57 Start: 38961, Stop: 39755, Start Num: 29

Candidate Starts for Sizemore_57:

(3, 38412), (9, 38685), (11, 38694), (12, 38703), (Start: 26 @38955 has 23 MA's), (Start: 29 @38961 has 33 MA's), (35, 39009), (54, 39423), (56, 39468), (60, 39537), (67, 39684), (69, 39744),

Gene: Slarp_88 Start: 53589, Stop: 54389, Start Num: 25

Candidate Starts for Slarp_88:

(Start: 25 @53589 has 11 MA's), (Start: 29 @53598 has 33 MA's), (33, 53631), (36, 53664), (42, 53787), (47, 53901), (51, 53961), (52, 53967), (54, 54045), (56, 54087), (59, 54150), (60, 54156), (61, 54201), (62, 54222), (65, 54249),

Gene: Sneeze_58 Start: 39342, Stop: 40154, Start Num: 28

Candidate Starts for Sneeze_58:

(10, 39072), (11, 39078), (12, 39087), (13, 39108), (14, 39117), (15, 39126), (19, 39240), (Start: 28 @39342 has 4 MA's), (35, 39390), (58, 39873), (60, 39897), (65, 39978),

Gene: Sweets_56 Start: 38970, Stop: 39761, Start Num: 29

Candidate Starts for Sweets_56:

(3, 38421), (9, 38694), (11, 38703), (12, 38712), (Start: 26 @38964 has 23 MA's), (Start: 29 @38970 has 33 MA's), (35, 39018), (54, 39432), (56, 39477), (60, 39546), (67, 39690), (69, 39750),

Gene: Taheera_54 Start: 38240, Stop: 39052, Start Num: 28

Candidate Starts for Taheera_54:

(10, 37970), (11, 37976), (12, 37985), (13, 38006), (14, 38015), (15, 38024), (19, 38138), (Start: 28 @38240 has 4 MA's), (35, 38288), (56, 38726), (58, 38771), (60, 38795), (65, 38876),

Gene: Taquito_90 Start: 54661, Stop: 55455, Start Num: 29

Candidate Starts for Taquito_90:

(Start: 25 @54652 has 11 MA's), (Start: 29 @54661 has 33 MA's), (33, 54694), (36, 54727), (37, 54751), (42, 54850), (47, 54967), (51, 55027), (52, 55033), (54, 55111), (56, 55153), (59, 55216), (60, 55222), (61, 55267), (65, 55315),

Gene: Terror_54 Start: 38240, Stop: 39052, Start Num: 28

Candidate Starts for Terror_54:

(10, 37970), (11, 37976), (12, 37985), (13, 38006), (14, 38015), (15, 38024), (19, 38138), (Start: 28 @38240 has 4 MA's), (35, 38288), (56, 38726), (58, 38771), (60, 38795), (65, 38876),

Gene: TinaBug_56 Start: 39968, Stop: 40759, Start Num: 29

Candidate Starts for TinaBug_56:

(3, 39419), (9, 39692), (11, 39701), (12, 39710), (Start: 26 @39962 has 23 MA's), (Start: 29 @39968 has 33 MA's), (35, 40016), (54, 40430), (56, 40475), (60, 40544), (67, 40688), (69, 40748),

Gene: TomBrady_58 Start: 39421, Stop: 40212, Start Num: 29

Candidate Starts for TomBrady_58:

(9, 39145), (11, 39154), (12, 39163), (Start: 26 @39415 has 23 MA's), (Start: 29 @39421 has 33 MA's), (35, 39469), (54, 39883), (56, 39928), (60, 39997), (67, 40141), (69, 40201),

Gene: Wendigo_55 Start: 38975, Stop: 39766, Start Num: 29

Candidate Starts for Wendigo_55:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: Whitty_55 Start: 40368, Stop: 39472, Start Num: 23

Candidate Starts for Whitty_55:

(Start: 23 @40368 has 2 MA's), (Start: 29 @40332 has 33 MA's), (Start: 30 @40317 has 1 MA's), (Start: 32 @40311 has 3 MA's), (41, 40191), (42, 40149), (44, 40068), (49, 40008), (50, 39975), (52, 39954), (55, 39858), (56, 39831), (57, 39789), (59, 39768), (60, 39762), (68, 39561), (70, 39522),

Gene: Wintermute_90 Start: 54390, Stop: 55190, Start Num: 25

Candidate Starts for Wintermute_90:

(Start: 25 @54390 has 11 MA's), (Start: 29 @54399 has 33 MA's), (33, 54432), (36, 54465), (42, 54588), (47, 54702), (51, 54762), (52, 54768), (54, 54846), (56, 54888), (59, 54951), (60, 54957), (61, 55002), (62, 55023), (65, 55050),

Gene: Y10_86 Start: 54343, Stop: 55134, Start Num: 29

Candidate Starts for Y10_86:

(Start: 25 @54334 has 11 MA's), (Start: 29 @54343 has 33 MA's), (33, 54376), (36, 54409), (42, 54532), (47, 54646), (51, 54706), (52, 54712), (54, 54790), (56, 54832), (59, 54895), (60, 54901), (61, 54946), (65, 54994),

Gene: Y2_86 Start: 54343, Stop: 55134, Start Num: 29

Candidate Starts for Y2_86:

(Start: 25 @54334 has 11 MA's), (Start: 29 @54343 has 33 MA's), (33, 54376), (36, 54409), (42, 54532), (47, 54646), (51, 54706), (52, 54712), (54, 54790), (56, 54832), (59, 54895), (60, 54901), (61, 54946), (65, 54994),

Gene: ZoMa_55 Start: 38969, Stop: 39766, Start Num: 26

Candidate Starts for ZoMa_55:

(3, 38426), (9, 38699), (11, 38708), (12, 38717), (Start: 26 @38969 has 23 MA's), (Start: 29 @38975 has 33 MA's), (35, 39023), (54, 39437), (56, 39482), (60, 39551), (67, 39695), (69, 39755),

Gene: Zombie_58 Start: 39516, Stop: 40211, Start Num: 38

Candidate Starts for Zombie_58:

(31, 39441), (34, 39462), (Start: 38 @39516 has 3 MA's), (54, 39882), (56, 39927), (60, 39996), (67, 40140), (69, 40200),