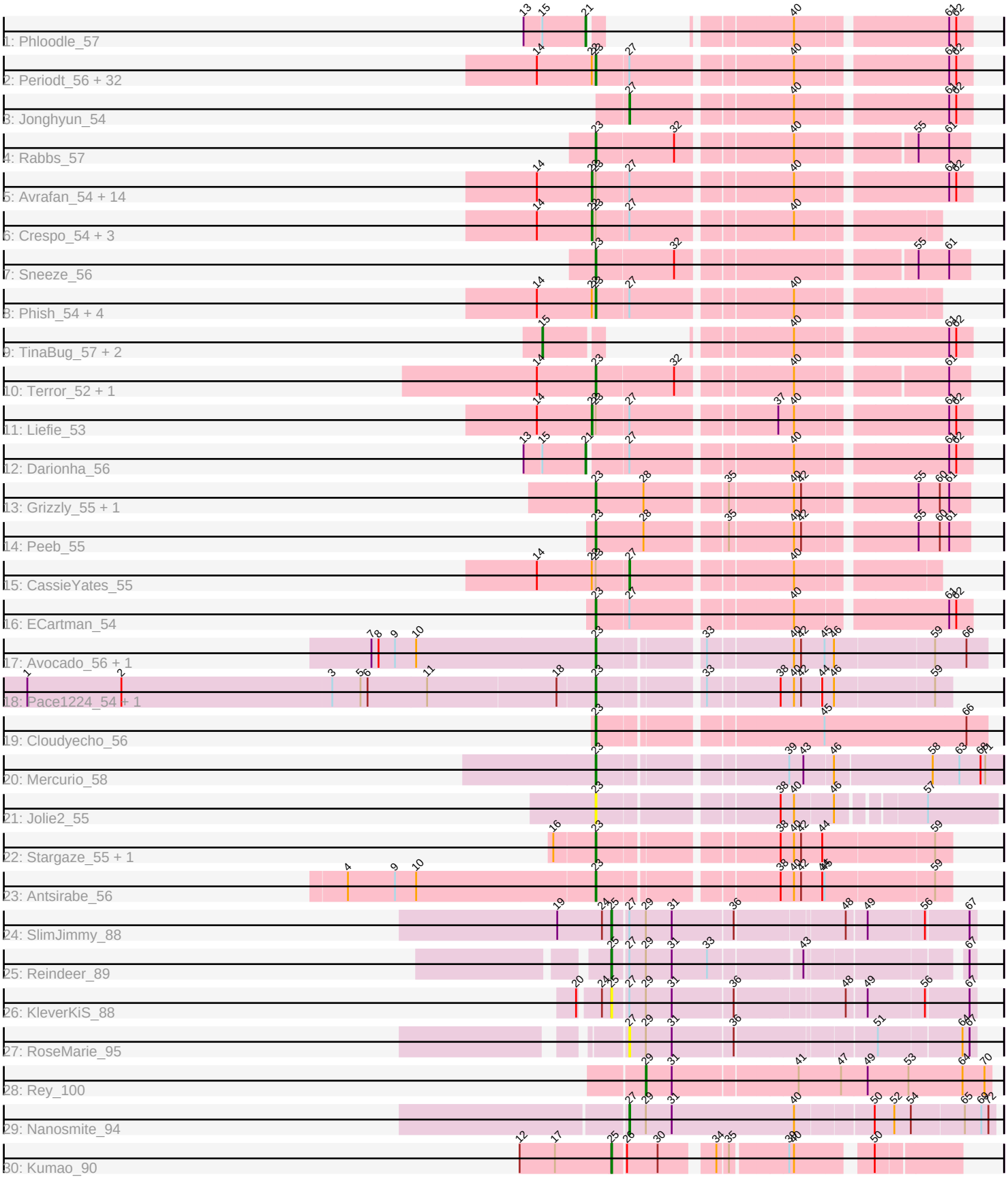
Pham 342029


1: Phloodle_57
2: Periodt_56 + 32
3: Jonghyun_54
4: Rabbs_57
5: Avrafan_54 + 14
6: Crespo_54 + 3
7: Sneeze_56
8: Phish_54 + 4
9: TinaBug_57 + 2
10: Terror_52 + 1
11: Liefie_53
12: Darionha_56
13: Grizzly_55 + 1
14: Peeb_55
15: CassieYates_55
16: ECartman_54
17: Avocado_56 + 1
18: Pace1224_54 + 1
19: Cloudyecho_56
20: Mercurio_58
21: Jolie2_55
22: Stargaze_55 + 1
23: Antsirabe_56
24: SlimJimmy_88
25: Reindeer_89
26: KleverKiS_88
27: RoseMarie_95
28: Rey_100
29: Nanosmite_94
30: Kumao_90

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 342029 Report

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

Pham number 342029 has 90 members, 8 are drafts.

Phages represented in each track:
• Track 1 : Phloodle_57
• Track 2 : Periodt_56, Neoh_56, Primanti_53, Sizemore_55, Wendigo_55, Olga_55, MZKinsey_55, Kareem_55, Chance64_56, Marmie_56, Plagueis_56, DingDing_55, JorRay_55, Hotshotbaby7_56, Cherrybomb426_55, Renaissance_55, Mowgli_56, AzulaCat_55, GoldenAsh_54, Ruriko_56, ZoMa_53, Jolene_55, LouisV14_57, BQuat_55, Rattrick_56, Camri_55, Richarlison_55, Terralys_52, Coleslaw_55, Sweets_54, Kasen3_55, DMoney_54, Schiebel_54
• Track 3 : Jonghyun_54
• Track 4 : Rabbs_57
• Track 5 : Avrafan_54, Hope_54, BPs_54, BruceB_54, Aroostook_56, Gideon_56, Annihilator_54, Phreak_56, Frosty24_54, CLED96_55, Gomashi_54, PinkYoshi_55, Jane_55, OctaviousRex_54, Angel_54
• Track 6 : Crespo_54, Cedasite_55, Remy19_55, Jeilious_55
• Track 7 : Sneeze_56
• Track 8 : Phish_54, ShaboiShabazz_54, AizenPogi_54, TomBrady_55, Maliketh_55
• Track 9 : TinaBug_57, Halo_57, ForeverHowLong_54
• Track 10 : Terror_52, Taheera_52
• Track 11 : Liefie_53
• Track 12 : Darionha_56
• Track 13 : Grizzly_55, Barkley26_53
• Track 14 : Peeb_55
• Track 15 : CassieYates_55
• Track 16 : ECartman_54
• Track 17 : Avocado_56, Cambiare_55
• Track 18 : Pace1224_54, FlagStaff_53
• Track 19 : Cloudyecho_56
• Track 20 : Mercurio_58
• Track 21 : Jolie2_55
• Track 22 : Stargaze_55, YangYin_56
• Track 23 : Antsirabe_56
• Track 24 : SlimJimmy_88
• Track 25 : Reindeer_89
• Track 26 : KleverKiS_88
• Track 27 : RoseMarie_95
• Track 28 : Rey_100
• Track 29 : Nanosmite_94
• Track 30 : Kumao_90

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

The start number called the most often in the published annotations is 23, it was called in 51 of the 82 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• AizenPogi_54, Antsirabe_56, Avocado_56, AzulaCat_55, BQuat_55, Barkley26_53, Cambiare_55, Camri_55, Chance64_56, Cherrybomb426_55, Cloudyecho_56, Coleslaw_55, DMoney_54, DingDing_55, ECartman_54, FlagStaff_53, GoldenAsh_54, Grizzly_55, Hotshotbaby7_56, Jolene_55, Jolie2_55, JorRay_55, Kareem_55, Kasen3_55, LouisV14_57, MZKinsey_55, Maliketh_55, Marmie_56, Mercurio_58, Mowgli_56, Neoh_56, Olga_55, Pace1224_54, Peeb_55, Periodt_56, Phish_54, Plagueis_56, Primanti_53, Rabbs_57, Rattrick_56, Renaissance_55, Richarlison_55, Ruriko_56, Schiebel_54, ShaboiShabazz_54, Sizemore_55, Sneeze_56, Stargaze_55, Sweets_54, Taheera_52, Terralys_52, Terror_52, TomBrady_55, Wendigo_55, YangYin_56, ZoMa_53,

Genes that have the "Most Annotated" start but do not call it:
• Angel_54, Annihilator_54, Aroostook_56, Avrafan_54, BPs_54, BruceB_54, CLED96_55, CassieYates_55, Cedasite_55, Crespo_54, Frosty24_54, Gideon_56, Gomashi_54, Hope_54, Jane_55, Jeilious_55, Liefie_53, OctaviousRex_54, Phreak_56, PinkYoshi_55, Remy19_55,

Genes that do not have the "Most Annotated" start:
• Darionha_56, ForeverHowLong_54, Halo_57, Jonghyun_54, KleverKiS_88, Kumao_90, Nanosmite_94, Phloodle_57, Reindeer_89, Rey_100, RoseMarie_95, SlimJimmy_88, TinaBug_57,

Summary by start number:

Start 15:
• Found in 5 of 90 (5.6%) of genes in pham
• Manual Annotations of this start: 2 of 82
• Called 60.0% of time when present
• Phage (with cluster) where this start called: ForeverHowLong_54 (G1), Halo_57 (G1), TinaBug_57 (G1),

Start 21:
• Found in 2 of 90 (2.2%) of genes in pham
• Manual Annotations of this start: 2 of 82
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Darionha_56 (G1), Phloodle_57 (G1),

Start 22:
• Found in 59 of 90 (65.6%) of genes in pham
• Manual Annotations of this start: 20 of 82
• Called 33.9% of time when present
• Phage (with cluster) where this start called: Angel_54 (G1), Annihilator_54 (G1), Aroostook_56 (G1), Avrafan_54 (G1), BPs_54 (G1), BruceB_54 (G1), CLED96_55

(G1), Cedasite_55 (G1), Crespo_54 (G1), Frosty24_54 (G1), Gideon_56 (G1), Gomashi_54 (G1), Hope_54 (G1), Jane_55 (G1), Jeilious_55 (G), Liefie_53 (G1), OctaviousRex_54 (G1), Phreak_56 (G1), PinkYoshi_55 (G1), Remy19_55 (G1),

Start 23:
• Found in 77 of 90 (85.6%) of genes in pham
• Manual Annotations of this start: 51 of 82
• Called 72.7% of time when present
• Phage (with cluster) where this start called: AizenPogi_54 (G1), Antsirabe_56 (G5), Avocado_56 (G2), AzulaCat_55 (G1), BQuat_55 (G1), Barkley26_53 (G1), Cambiare_55 (G2), Camri_55 (G1), Chance64_56 (G1), Cherrybomb426_55 (G1), Cloudyecho_56 (G3), Coleslaw_55 (G1), DMoney_54 (G1), DingDing_55 (G1), ECartman_54 (G1), FlagStaff_53 (G2), GoldenAsh_54 (G1), Grizzly_55 (G1), Hotshotbaby7_56 (G1), Jolene_55 (G1), Jolie2_55 (G4), JorRay_55 (G1), Kareem_55 (G1), Kasen3_55 (G1), LouisV14_57 (G1), MZKinsey_55 (G1), Maliketh_55 (G1), Marmie_56 (G1), Mercurio_58 (G4), Mowgli_56 (G1), Neoh_56 (G), Olga_55 (G1), Pace1224_54 (G2), Peeb_55 (G1), Periodt_56 (G1), Phish_54 (G1), Plagueis_56 (G1), Primanti_53 (G1), Rabbs_57 (G1), Rattrick_56 (G1), Renaissance_55 (G1), Richarlison_55 (G1), Ruriko_56 (G1), Schiebel_54 (G1), ShaboiShabazz_54 (G1), Sizemore_55 (G1), Sneeze_56 (G1), Stargaze_55 (G5), Sweets_54 (G1), Taheera_52 (G1), Terralys_52 (G1), Terror_52 (G1), TomBrady_55 (G1), Wendigo_55 (G1), YangYin_56 (G5), ZoMa_53 (G1),

Start 25:
• Found in 4 of 90 (4.4%) 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: KleverKiS_88 (M1), Kumao_90 (singleton), Reindeer_89 (M1), SlimJimmy_88 (M1),

Start 27:
• Found in 67 of 90 (74.4%) of genes in pham
• Manual Annotations of this start: 3 of 82
• Called 6.0% of time when present
• Phage (with cluster) where this start called: CassieYates_55 (G1), Jonghyun_54 (G1), Nanosmite_94 (M3), RoseMarie_95 (M1),

Start 29:
• Found in 6 of 90 (6.7%) 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: Rey_100 (M2),

Summary by clusters:

There are 10 clusters represented in this pham: G5, G4, G3, G1, G, singleton, M1, M3, M2, G2,

Info for manual annotations of cluster G:
•Start number 22 was manually annotated 1 time for cluster G.
•Start number 23 was manually annotated 1 time for cluster G.

Info for manual annotations of cluster G1:

•Start number 15 was manually annotated 2 times for cluster G1.
•Start number 21 was manually annotated 2 times for cluster G1.
•Start number 22 was manually annotated 19 times for cluster G1.
•Start number 23 was manually annotated 42 times for cluster G1.
•Start number 27 was manually annotated 2 times for cluster G1.

Info for manual annotations of cluster G2:
•Start number 23 was manually annotated 3 times for cluster G2.

Info for manual annotations of cluster G3:
•Start number 23 was manually annotated 1 time for cluster G3.

Info for manual annotations of cluster G4:
•Start number 23 was manually annotated 1 time for cluster G4.

Info for manual annotations of cluster G5:
•Start number 23 was manually annotated 3 times for cluster G5.

Info for manual annotations of cluster M1:
•Start number 25 was manually annotated 2 times for cluster M1.

Info for manual annotations of cluster M2:
•Start number 29 was manually annotated 1 time for cluster M2.

Info for manual annotations of cluster M3:
•Start number 27 was manually annotated 1 time for cluster M3.

Gene Information:

Gene: AizenPogi_54 Start: 38206, Stop: 38589, Start Num: 23
Candidate Starts for AizenPogi_54:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428),

Gene: Angel_54 Start: 38188, Stop: 38616, Start Num: 22
Candidate Starts for Angel_54:
(14, 38119), (Start: 22 @38188 has 20 MA's), (Start: 23 @38191 has 51 MA's), (Start: 27 @38230 has 3 MA's), (40, 38413), (61, 38587), (62, 38596),

Gene: Annihilator_54 Start: 38194, Stop: 38622, Start Num: 22
Candidate Starts for Annihilator_54:
(14, 38125), (Start: 22 @38194 has 20 MA's), (Start: 23 @38197 has 51 MA's), (Start: 27 @38236 has 3 MA's), (40, 38419), (61, 38593), (62, 38602),

Gene: Antsirabe_56 Start: 40315, Stop: 40722, Start Num: 23
Candidate Starts for Antsirabe_56:
(4, 40006), (9, 40066), (10, 40093), (Start: 23 @40315 has 51 MA's), (38, 40513), (40, 40528), (42, 40537), (44, 40564), (45, 40567), (59, 40702),

Gene: Aroostook_56 Start: 38650, Stop: 39078, Start Num: 22
Candidate Starts for Aroostook_56:

(14, 38581), (Start: 22 @38650 has 20 MA's), (Start: 23 @38653 has 51 MA's), (Start: 27 @38692 has 3 MA's), (40, 38875), (61, 39049), (62, 39058),

Gene: Avocado_56 Start: 40702, Stop: 41154, Start Num: 23
Candidate Starts for Avocado_56:
(7, 40420), (8, 40429), (9, 40450), (10, 40477), (Start: 23 @40702 has 51 MA's), (33, 40819), (40, 40915), (42, 40924), (45, 40954), (46, 40966), (59, 41089), (66, 41128),

Gene: Avrafan_54 Start: 38203, Stop: 38631, Start Num: 22
Candidate Starts for Avrafan_54:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: AzulaCat_55 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for AzulaCat_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: BPs_54 Start: 38203, Stop: 38631, Start Num: 22
Candidate Starts for BPs_54:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: BQuat_55 Start: 38643, Stop: 39068, Start Num: 23
Candidate Starts for BQuat_55:
(14, 38571), (Start: 22 @38640 has 20 MA's), (Start: 23 @38643 has 51 MA's), (Start: 27 @38682 has 3 MA's), (40, 38865), (61, 39039), (62, 39048),

Gene: Barkley26_53 Start: 37997, Stop: 38425, Start Num: 23
Candidate Starts for Barkley26_53:
(Start: 23 @37997 has 51 MA's), (28, 38057), (35, 38150), (40, 38222), (42, 38231), (55, 38360), (60, 38387), (61, 38399),

Gene: BruceB_54 Start: 38203, Stop: 38631, Start Num: 22
Candidate Starts for BruceB_54:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: CLED96_55 Start: 38203, Stop: 38631, Start Num: 22
Candidate Starts for CLED96_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Cambiare_55 Start: 40502, Stop: 40954, Start Num: 23
Candidate Starts for Cambiare_55:
(7, 40220), (8, 40229), (9, 40250), (10, 40277), (Start: 23 @40502 has 51 MA's), (33, 40619), (40, 40715), (42, 40724), (45, 40754), (46, 40766), (59, 40889), (66, 40928),

Gene: Camri_55 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for Camri_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: CassieYates_55 Start: 38245, Stop: 38589, Start Num: 27
Candidate Starts for CassieYates_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428),

Gene: Cedasite_55 Start: 38203, Stop: 38589, Start Num: 22
Candidate Starts for Cedasite_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428),

Gene: Chance64_56 Start: 38653, Stop: 39078, Start Num: 23
Candidate Starts for Chance64_56:
(14, 38581), (Start: 22 @38650 has 20 MA's), (Start: 23 @38653 has 51 MA's), (Start: 27 @38692 has 3 MA's), (40, 38875), (61, 39049), (62, 39058),

Gene: Cherrybomb426_55 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for Cherrybomb426_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Cloudyecho_56 Start: 40430, Stop: 40888, Start Num: 23
Candidate Starts for Cloudyecho_56:
(Start: 23 @40430 has 51 MA's), (45, 40682), (66, 40862),

Gene: Coleslaw_55 Start: 38643, Stop: 39068, Start Num: 23
Candidate Starts for Coleslaw_55:
(14, 38571), (Start: 22 @38640 has 20 MA's), (Start: 23 @38643 has 51 MA's), (Start: 27 @38682 has 3 MA's), (40, 38865), (61, 39039), (62, 39048),

Gene: Crespo_54 Start: 38204, Stop: 38590, Start Num: 22
Candidate Starts for Crespo_54:
(14, 38135), (Start: 22 @38204 has 20 MA's), (Start: 23 @38207 has 51 MA's), (Start: 27 @38246 has 3 MA's), (40, 38429),

Gene: DMoney_54 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for DMoney_54:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Darionha_56 Start: 38648, Stop: 39076, Start Num: 21
Candidate Starts for Darionha_56:
(13, 38573), (Start: 15 @38594 has 2 MA's), (Start: 21 @38648 has 2 MA's), (Start: 27 @38690 has 3 MA's), (40, 38873), (61, 39047), (62, 39056),

Gene: DingDing_55 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for DingDing_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: ECartman_54 Start: 38651, Stop: 39076, Start Num: 23
Candidate Starts for ECartman_54:
(Start: 23 @38651 has 51 MA's), (Start: 27 @38690 has 3 MA's), (40, 38873), (61, 39047), (62, 39056),

Gene: FlagStaff_53 Start: 39294, Stop: 39698, Start Num: 23
Candidate Starts for FlagStaff_53:
(1, 38580), (2, 38700), (3, 38967), (5, 39003), (6, 39012), (11, 39087), (18, 39249), (Start: 23 @39294 has 51 MA's), (33, 39411), (38, 39492), (40, 39507), (42, 39516), (44, 39540), (46, 39555), (59, 39678),

Gene: ForeverHowLong_54 Start: 39247, Stop: 39624, Start Num: 15
Candidate Starts for ForeverHowLong_54:
(Start: 15 @39247 has 2 MA's), (40, 39421), (61, 39595), (62, 39604),

Gene: Frosty24_54 Start: 38203, Stop: 38631, Start Num: 22
Candidate Starts for Frosty24_54:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Gideon_56 Start: 38650, Stop: 39078, Start Num: 22
Candidate Starts for Gideon_56:
(14, 38581), (Start: 22 @38650 has 20 MA's), (Start: 23 @38653 has 51 MA's), (Start: 27 @38692 has 3 MA's), (40, 38875), (61, 39049), (62, 39058),

Gene: GoldenAsh_54 Start: 38191, Stop: 38616, Start Num: 23
Candidate Starts for GoldenAsh_54:
(14, 38119), (Start: 22 @38188 has 20 MA's), (Start: 23 @38191 has 51 MA's), (Start: 27 @38230 has 3 MA's), (40, 38413), (61, 38587), (62, 38596),

Gene: Gomashi_54 Start: 38204, Stop: 38632, Start Num: 22
Candidate Starts for Gomashi_54:
(14, 38135), (Start: 22 @38204 has 20 MA's), (Start: 23 @38207 has 51 MA's), (Start: 27 @38246 has 3 MA's), (40, 38429), (61, 38603), (62, 38612),

Gene: Grizzly_55 Start: 38520, Stop: 38948, Start Num: 23
Candidate Starts for Grizzly_55:
(Start: 23 @38520 has 51 MA's), (28, 38580), (35, 38673), (40, 38745), (42, 38754), (55, 38883), (60, 38910), (61, 38922),

Gene: Halo_57 Start: 39247, Stop: 39624, Start Num: 15
Candidate Starts for Halo_57:
(Start: 15 @39247 has 2 MA's), (40, 39421), (61, 39595), (62, 39604),

Gene: Hope_54 Start: 38203, Stop: 38631, Start Num: 22
Candidate Starts for Hope_54:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Hotshotbaby7_56 Start: 38653, Stop: 39078, Start Num: 23
Candidate Starts for Hotshotbaby7_56:
(14, 38581), (Start: 22 @38650 has 20 MA's), (Start: 23 @38653 has 51 MA's), (Start: 27 @38692 has 3 MA's), (40, 38875), (61, 39049), (62, 39058),

Gene: Jane_55 Start: 38203, Stop: 38631, Start Num: 22
Candidate Starts for Jane_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Jeilious_55 Start: 38202, Stop: 38588, Start Num: 22
Candidate Starts for Jeilious_55:
(14, 38133), (Start: 22 @38202 has 20 MA's), (Start: 23 @38205 has 51 MA's), (Start: 27 @38244 has 3 MA's), (40, 38427),

Gene: Jolene_55 Start: 38608, Stop: 39033, Start Num: 23
Candidate Starts for Jolene_55:
(14, 38536), (Start: 22 @38605 has 20 MA's), (Start: 23 @38608 has 51 MA's), (Start: 27 @38647 has 3 MA's), (40, 38830), (61, 39004), (62, 39013),

Gene: Jolie2_55 Start: 39823, Stop: 40269, Start Num: 23
Candidate Starts for Jolie2_55:
(Start: 23 @39823 has 51 MA's), (38, 40024), (40, 40039), (46, 40087), (57, 40183),

Gene: Jonghyun_54 Start: 38693, Stop: 39079, Start Num: 27
Candidate Starts for Jonghyun_54:
(Start: 27 @38693 has 3 MA's), (40, 38876), (61, 39050), (62, 39059),

Gene: JorRay_55 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for JorRay_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Kareem_55 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for Kareem_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Kasen3_55 Start: 38192, Stop: 38617, Start Num: 23
Candidate Starts for Kasen3_55:
(14, 38120), (Start: 22 @38189 has 20 MA's), (Start: 23 @38192 has 51 MA's), (Start: 27 @38231 has 3 MA's), (40, 38414), (61, 38588), (62, 38597),

Gene: KleverKiS_88 Start: 53776, Stop: 54201, Start Num: 25
Candidate Starts for KleverKiS_88:
(20, 53740), (24, 53764), (Start: 25 @53776 has 3 MA's), (Start: 27 @53794 has 3 MA's), (Start: 29 @53815 has 1 MA's), (31, 53848), (36, 53923), (48, 54049), (49, 54073), (56, 54142), (67, 54193),

Gene: Kumao_90 Start: 56662, Stop: 57039, Start Num: 25
Candidate Starts for Kumao_90:
(12, 56548), (17, 56593), (Start: 25 @56662 has 3 MA's), (26, 56677), (30, 56716), (34, 56773), (35, 56785), (39, 56851), (40, 56857), (50, 56938),

Gene: Liefie_53 Start: 38314, Stop: 38742, Start Num: 22
Candidate Starts for Liefie_53:
(14, 38245), (Start: 22 @38314 has 20 MA's), (Start: 23 @38317 has 51 MA's), (Start: 27 @38356 has 3 MA's), (37, 38521), (40, 38539), (61, 38713), (62, 38722),

Gene: LouisV14_57 Start: 40471, Stop: 40896, Start Num: 23
Candidate Starts for LouisV14_57:
(14, 40399), (Start: 22 @40468 has 20 MA's), (Start: 23 @40471 has 51 MA's), (Start: 27 @40510 has 3 MA's), (40, 40693), (61, 40867), (62, 40876),

Gene: MZKinsey_55 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for MZKinsey_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Maliketh_55 Start: 38206, Stop: 38589, Start Num: 23
Candidate Starts for Maliketh_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428),

Gene: Marmie_56 Start: 38652, Stop: 39077, Start Num: 23
Candidate Starts for Marmie_56:
(14, 38580), (Start: 22 @38649 has 20 MA's), (Start: 23 @38652 has 51 MA's), (Start: 27 @38691 has 3 MA's), (40, 38874), (61, 39048), (62, 39057),

Gene: Mercurio_58 Start: 41946, Stop: 42416, Start Num: 23
Candidate Starts for Mercurio_58:
(Start: 23 @41946 has 51 MA's), (39, 42153), (43, 42171), (46, 42207), (58, 42327), (63, 42360), (68, 42387), (71, 42393),

Gene: Mowgli_56 Start: 38652, Stop: 39077, Start Num: 23
Candidate Starts for Mowgli_56:
(14, 38580), (Start: 22 @38649 has 20 MA's), (Start: 23 @38652 has 51 MA's), (Start: 27 @38691 has 3 MA's), (40, 38874), (61, 39048), (62, 39057),

Gene: Nanosmite_94 Start: 55068, Stop: 55520, Start Num: 27
Candidate Starts for Nanosmite_94:
(Start: 27 @55068 has 3 MA's), (Start: 29 @55089 has 1 MA's), (31, 55122), (40, 55278), (50, 55371), (52, 55395), (54, 55416), (65, 55482), (69, 55503), (72, 55512),

Gene: Neoh_56 Start: 38644, Stop: 39069, Start Num: 23
Candidate Starts for Neoh_56:
(14, 38572), (Start: 22 @38641 has 20 MA's), (Start: 23 @38644 has 51 MA's), (Start: 27 @38683 has 3 MA's), (40, 38866), (61, 39040), (62, 39049),

Gene: OctaviousRex_54 Start: 38203, Stop: 38631, Start Num: 22
Candidate Starts for OctaviousRex_54:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Olga_55 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for Olga_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Pace1224_54 Start: 39323, Stop: 39727, Start Num: 23
Candidate Starts for Pace1224_54:
(1, 38609), (2, 38729), (3, 38996), (5, 39032), (6, 39041), (11, 39116), (18, 39278), (Start: 23 @39323 has 51 MA's), (33, 39440), (38, 39521), (40, 39536), (42, 39545), (44, 39569), (46, 39584), (59, 39707),

Gene: Peeb_55 Start: 38644, Stop: 39072, Start Num: 23
Candidate Starts for Peeb_55:

(Start: 23 @38644 has 51 MA's), (28, 38704), (35, 38797), (40, 38869), (42, 38878), (55, 39007), (60, 39034), (61, 39046),

Gene: Periodt_56 Start: 39044, Stop: 39469, Start Num: 23
Candidate Starts for Periodt_56:
(14, 38972), (Start: 22 @39041 has 20 MA's), (Start: 23 @39044 has 51 MA's), (Start: 27 @39083 has 3 MA's), (40, 39266), (61, 39440), (62, 39449),

Gene: Phish_54 Start: 38206, Stop: 38589, Start Num: 23
Candidate Starts for Phish_54:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428),

Gene: Phloodle_57 Start: 38769, Stop: 39092, Start Num: 21
Candidate Starts for Phloodle_57:
(13, 38694), (Start: 15 @38715 has 2 MA's), (Start: 21 @38769 has 2 MA's), (40, 38889), (61, 39063), (62, 39072),

Gene: Phreak_56 Start: 38648, Stop: 39076, Start Num: 22
Candidate Starts for Phreak_56:
(14, 38579), (Start: 22 @38648 has 20 MA's), (Start: 23 @38651 has 51 MA's), (Start: 27 @38690 has 3 MA's), (40, 38873), (61, 39047), (62, 39056),

Gene: PinkYoshi_55 Start: 38194, Stop: 38622, Start Num: 22
Candidate Starts for PinkYoshi_55:
(14, 38125), (Start: 22 @38194 has 20 MA's), (Start: 23 @38197 has 51 MA's), (Start: 27 @38236 has 3 MA's), (40, 38419), (61, 38593), (62, 38602),

Gene: Plagueis_56 Start: 38472, Stop: 38897, Start Num: 23
Candidate Starts for Plagueis_56:
(14, 38400), (Start: 22 @38469 has 20 MA's), (Start: 23 @38472 has 51 MA's), (Start: 27 @38511 has 3 MA's), (40, 38694), (61, 38868), (62, 38877),

Gene: Primanti_53 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for Primanti_53:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Rabbs_57 Start: 38635, Stop: 39054, Start Num: 23
Candidate Starts for Rabbs_57:
(Start: 23 @38635 has 51 MA's), (32, 38731), (40, 38857), (55, 38989), (61, 39028),

Gene: Rattrick_56 Start: 39044, Stop: 39469, Start Num: 23
Candidate Starts for Rattrick_56:
(14, 38972), (Start: 22 @39041 has 20 MA's), (Start: 23 @39044 has 51 MA's), (Start: 27 @39083 has 3 MA's), (40, 39266), (61, 39440), (62, 39449),

Gene: Reindeer_89 Start: 54768, Stop: 55172, Start Num: 25
Candidate Starts for Reindeer_89:
(Start: 25 @54768 has 3 MA's), (Start: 27 @54786 has 3 MA's), (Start: 29 @54807 has 1 MA's), (31, 54840), (33, 54885), (43, 54990), (67, 55164),

Gene: Remy19_55 Start: 38203, Stop: 38589, Start Num: 22

Candidate Starts for Remy19_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428),

Gene: Renaissance_55 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for Renaissance_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: Rey_100 Start: 55491, Stop: 55916, Start Num: 29
Candidate Starts for Rey_100:
(Start: 29 @55491 has 1 MA's), (31, 55524), (41, 55674), (47, 55728), (49, 55761), (53, 55812), (64, 55881), (70, 55908),

Gene: Richarlison_55 Start: 38191, Stop: 38616, Start Num: 23
Candidate Starts for Richarlison_55:
(14, 38119), (Start: 22 @38188 has 20 MA's), (Start: 23 @38191 has 51 MA's), (Start: 27 @38230 has 3 MA's), (40, 38413), (61, 38587), (62, 38596),

Gene: RoseMarie_95 Start: 57317, Stop: 57724, Start Num: 27
Candidate Starts for RoseMarie_95:
(Start: 27 @57317 has 3 MA's), (Start: 29 @57338 has 1 MA's), (31, 57371), (36, 57446), (51, 57608), (64, 57707), (67, 57716),

Gene: Ruriko_56 Start: 38653, Stop: 39078, Start Num: 23
Candidate Starts for Ruriko_56:
(14, 38581), (Start: 22 @38650 has 20 MA's), (Start: 23 @38653 has 51 MA's), (Start: 27 @38692 has 3 MA's), (40, 38875), (61, 39049), (62, 39058),

Gene: Schiebel_54 Start: 38191, Stop: 38616, Start Num: 23
Candidate Starts for Schiebel_54:
(14, 38119), (Start: 22 @38188 has 20 MA's), (Start: 23 @38191 has 51 MA's), (Start: 27 @38230 has 3 MA's), (40, 38413), (61, 38587), (62, 38596),

Gene: ShaboiShabazz_54 Start: 38206, Stop: 38589, Start Num: 23
Candidate Starts for ShaboiShabazz_54:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428),

Gene: Sizemore_55 Start: 38192, Stop: 38617, Start Num: 23
Candidate Starts for Sizemore_55:
(14, 38120), (Start: 22 @38189 has 20 MA's), (Start: 23 @38192 has 51 MA's), (Start: 27 @38231 has 3 MA's), (40, 38414), (61, 38588), (62, 38597),

Gene: SlimJimmy_88 Start: 54385, Stop: 54810, Start Num: 25
Candidate Starts for SlimJimmy_88:
(19, 54316), (24, 54373), (Start: 25 @54385 has 3 MA's), (Start: 27 @54403 has 3 MA's), (Start: 29 @54424 has 1 MA's), (31, 54457), (36, 54532), (48, 54658), (49, 54682), (56, 54751), (67, 54802),

Gene: Sneeze_56 Start: 38634, Stop: 39053, Start Num: 23
Candidate Starts for Sneeze_56:
(Start: 23 @38634 has 51 MA's), (32, 38730), (55, 38988), (61, 39027),

Gene: Stargaze_55 Start: 39897, Stop: 40304, Start Num: 23
Candidate Starts for Stargaze_55:
(16, 39849), (Start: 23 @39897 has 51 MA's), (38, 40095), (40, 40110), (42, 40119), (44, 40146), (59, 40284),

Gene: Sweets_54 Start: 38201, Stop: 38626, Start Num: 23
Candidate Starts for Sweets_54:
(14, 38129), (Start: 22 @38198 has 20 MA's), (Start: 23 @38201 has 51 MA's), (Start: 27 @38240 has 3 MA's), (40, 38423), (61, 38597), (62, 38606),

Gene: Taheera_52 Start: 37532, Stop: 37951, Start Num: 23
Candidate Starts for Taheera_52:
(14, 37460), (Start: 23 @37532 has 51 MA's), (32, 37628), (40, 37754), (61, 37925),

Gene: Terralys_52 Start: 38140, Stop: 38565, Start Num: 23
Candidate Starts for Terralys_52:
(14, 38068), (Start: 22 @38137 has 20 MA's), (Start: 23 @38140 has 51 MA's), (Start: 27 @38179 has 3 MA's), (40, 38362), (61, 38536), (62, 38545),

Gene: Terror_52 Start: 37532, Stop: 37951, Start Num: 23
Candidate Starts for Terror_52:
(14, 37460), (Start: 23 @37532 has 51 MA's), (32, 37628), (40, 37754), (61, 37925),

Gene: TinaBug_57 Start: 39247, Stop: 39624, Start Num: 15
Candidate Starts for TinaBug_57:
(Start: 15 @39247 has 2 MA's), (40, 39421), (61, 39595), (62, 39604),

Gene: TomBrady_55 Start: 38207, Stop: 38590, Start Num: 23
Candidate Starts for TomBrady_55:
(14, 38135), (Start: 22 @38204 has 20 MA's), (Start: 23 @38207 has 51 MA's), (Start: 27 @38246 has 3 MA's), (40, 38429),

Gene: Wendigo_55 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for Wendigo_55:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),

Gene: YangYin_56 Start: 40334, Stop: 40741, Start Num: 23
Candidate Starts for YangYin_56:
(16, 40286), (Start: 23 @40334 has 51 MA's), (38, 40532), (40, 40547), (42, 40556), (44, 40583), (59, 40721),

Gene: ZoMa_53 Start: 38206, Stop: 38631, Start Num: 23
Candidate Starts for ZoMa_53:
(14, 38134), (Start: 22 @38203 has 20 MA's), (Start: 23 @38206 has 51 MA's), (Start: 27 @38245 has 3 MA's), (40, 38428), (61, 38602), (62, 38611),