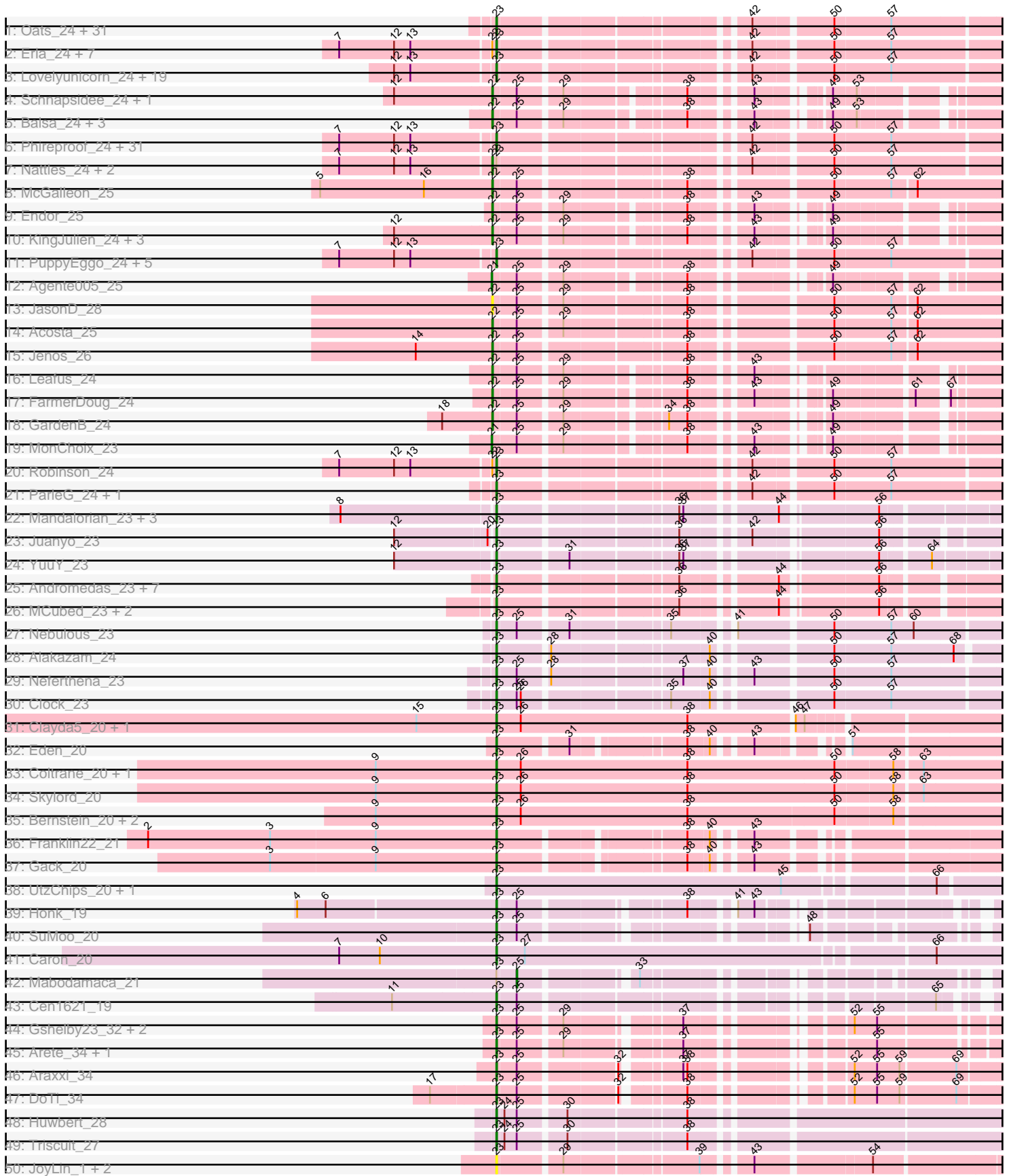
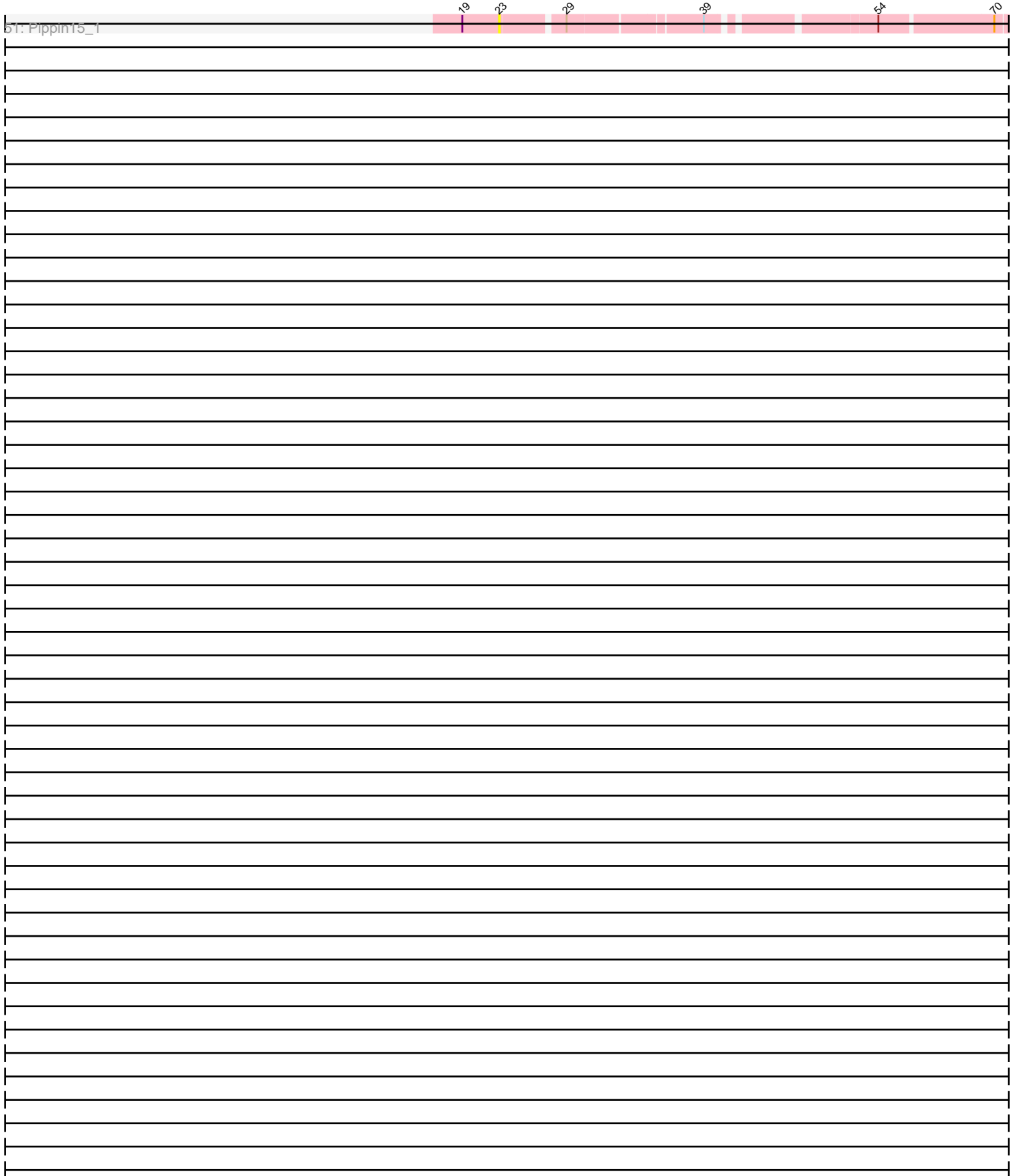


Zoomed Pham 192352



Zoomed Pham 192352



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 192352 Report

This analysis was run 11/02/24 on database version 579.

Pham number 192352 has 176 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Oats_24, Clancy_24, Espinosa_24, JasperRussell_24, StirfryIV_24, Jerbirus_25, Duocatuli_24, AranulaLuti_24, Ilzat_24, Asta_24, HanSolo_24, KannH_24, Aubergine_24, HankSprout_25, Rog141_24, Janus167_24, JeriBeth_25, Tenda_24, Papafritta_24, Winzigespinne_24, Chako_24, Pocket_24, Gubbabump_24, Gershwin_24, Kale_24, HungryHenry_24, Christoph_24, ManRay_24, Sedgewig_24, TeddyBear_24, Benjalauren_25, StingRay_24
- Track 2 : Erla_24, Garey24_24, Chamuel_24, Baines_24, Bonino_24, Gelo_24, Klimt_24, Etta_24
- Track 3 : Lovelyunicorn_24, BonesMcCoy_24, SoilGremlin_24, Oxtober96_24, Velene_24, Delphidian_24, MillyPhilly_24, Phriends_24, Convict_24, Blage_24, WildNOut_24, Den3_24, Knox_24, Greys_24, Strathdee_24, OldNelly_24, loannes_24, BigRedClifford_24, Thompsone_24, Raptor_24
- Track 4 : Schnapsidee_24, Etna_24
- Track 5 : Balsa_24, Hamlet_24, Peppino_24, Redfield_24
- Track 6 : Phireproof_24, Renzie_24, TinSulphur_24, Inventa_24, Riyhil_24, Teagan_24, Gargoyle_24, Alyxandracam_24, Kurt1_24, Rapheph_24, Nagem_24, TatarkaPM_24, Ludgate_24, Antoinette_24, Pherferi_24, SJay_24, Superfresh_24, Byron23_24, Shee_24, Dave_24, Stanktossa_24, PhredFlintston_24, MaeLinda_24, NickSell_24, Martin_25, Dothraki_24, Bandik_24, Peep_24, Figueroism_24, Zada_24, BeautPeep30_24, Phiderman_24
- Track 7 : Nattles_24, Calix_24, SonOfLevi_24
- Track 8 : McGalleon_25
- Track 9 : Endor_25
- Track 10 : KingJulien_24, Raccoon_24, BeeBee8_25, Stormbreaker8_24
- Track 11 : PuppyEggo_24, Vispistious_24, AxiPup_24, AlexAdler_24, ShaiHulud_24, Thorongil_24
- Track 12 : Agente005_25
- Track 13 : JasonD_28
- Track 14 : Acosta_25
- Track 15 : Jenos_26
- Track 16 : Leafus_24
- Track 17 : FarmerDoug_24
- Track 18 : GardenB_24
- Track 19 : MonChoix_23
- Track 20 : Robinson_24
- Track 21 : ParleG_24, MrWorldwide_24
- Track 22 : Mandalorian_23, Quartz_23, Nucci_23, Carostasia_23

- Track 23 : Juanyo_23
- Track 24 : YuuY_23
- Track 25 : Andromedas_23, ChikPic_23, Eleri_23, Glamour_22, Zenitsu_23, ColaCorta_23, Saratos_23, Shamu_23
- Track 26 : MCubed_23, Finny_23, Sansa_22
- Track 27 : Nebulous_23
- Track 28 : Alakazam_24
- Track 29 : Neferthena_23
- Track 30 : Clock_23
- Track 31 : Clayda5_20, Armstrong_20
- Track 32 : Eden_20
- Track 33 : Coltrane_20, Brahms_20
- Track 34 : Skylord_20
- Track 35 : Bernstein_20, Vitas_20, Rollins_20
- Track 36 : Franklin22_21
- Track 37 : Gack_20
- Track 38 : UtzChips_20, Barnstormer_20
- Track 39 : Honk_19
- Track 40 : SuMoo_20
- Track 41 : Caron_20
- Track 42 : Mabodamaca_21
- Track 43 : Cen1621_19
- Track 44 : Gshelby23_32, Hannabella_34, Casino_33
- Track 45 : Arete_34, Scruffy_34
- Track 46 : Araxxi_34
- Track 47 : DoTi_34
- Track 48 : Huwburt_28
- Track 49 : Triscuit_27
- Track 50 : JoyLin_1, Yotsuba_1, Eevee_1
- Track 51 : Pippin15_1

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 143 of the 165 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alakazam_24, AlexAdler_24, Alyxandracam_24, Andromedas_23, Antoinette_24, AranulaLuti_24, Araxxi_34, Arete_34, Armstrong_20, Asta_24, Aubergine_24, AxiPup_24, Baines_24, Bandik_24, Barnstormer_20, BeautPeep30_24, Benjalauren_25, Bernstein_20, BigRedClifford_24, Blage_24, BonesMcCoy_24, Bonino_24, Brahms_20, Byron23_24, Caron_20, Carostasia_23, Casino_33, Cen1621_19, Chako_24, Chamuel_24, ChikPic_23, Christoph_24, Clancy_24, Clayda5_20, Clock_23, ColaCorta_23, Coltrane_20, Convict_24, Dave_24, Delphidian_24, Den3_24, DoTi_34, Dothraki_24, Duocatuli_24, Eden_20, Eevee_1, Eleri_23, Erla_24, Espinosa_24, Etta_24, Figueroism_24, Finny_23, Franklin22_21, Gack_20, Garey24_24, Gargoyle_24, Gelo_24, Gershwin_24, Glamour_22, Greys_24, Gshelby23_32, Gubbabump_24, HanSolo_24, HankSprout_25, Hannabella_34, Honk_19, HungryHenry_24, Huwburt_28, Ilzat_24, Inventa_24, Ioannes_24, Janus167_24, JasperRussell_24, Jerbirus_25, JeriBeth_25, JoyLin_1,

Juanyo_23, Kale_24, KannH_24, Klimt_24, Knox_24, Kurt1_24, Lovelyunicorn_24, Ludgate_24, MCubed_23, MaeLinda_24, ManRay_24, Mandalorian_23, Martin_25, MillyPhilly_24, MrWorldwide_24, Nagem_24, Nebulous_23, Neferthena_23, NickSell_24, Nucci_23, Oats_24, OldNelly_24, Oxtober96_24, Papafritta_24, ParleG_24, Peep_24, Pherferi_24, Phiderman_24, Phireproof_24, PhredFlintston_24, Phriends_24, Pippin15_1, Pocket_24, PuppyEggo_24, Quartz_23, Rapheph_24, Raptor_24, Renzie_24, Riyhil_24, Robinson_24, Rog141_24, Rollins_20, SJay_24, Sansa_22, Saratos_23, Scruffy_34, Sedgewig_24, ShaiHulud_24, Shamu_23, Shee_24, Skylord_20, SoilGremlin_24, Stanktossa_24, StingRay_24, StirfryIV_24, Strathdee_24, SuMoo_20, Superfresh_24, TatarkaPM_24, Teagan_24, TeddyBear_24, Tenda_24, Thompsone_24, Thorongil_24, TinSulphur_24, Triscuit_27, UtzChips_20, Velene_24, Vispistious_24, Vitas_20, WildNOut_24, Winzigespinne_24, Yotsuba_1, YuuY_23, Zada_24, Zenitsu_23,

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

- Calix_24, Mabodamaca_21, Nattles_24, SonOfLevi_24,

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

- Acosta_25, Agente005_25, Balsa_24, BeeBee8_25, Endor_25, Etna_24, FarmerDoug_24, GardenB_24, Hamlet_24, JasonD_28, Jenos_26, KingJulien_24, Leafus_24, McGalleon_25, MonChoix_23, Peppino_24, Raccoon_24, Redfield_24, Schnapsidee_24, Stormbreaker8_24,

Summary by start number:

Start 21:

- Found in 2 of 176 (1.1%) of genes in pham
- Manual Annotations of this start: 2 of 165
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Agente005_25 (EA1), MonChoix_23 (EA1),

Start 22:

- Found in 30 of 176 (17.0%) of genes in pham
- Manual Annotations of this start: 19 of 165
- Called 70.0% of time when present
- Phage (with cluster) where this start called: Acosta_25 (EA1), Balsa_24 (EA1), BeeBee8_25 (EA1), Calix_24 (EA1), Endor_25 (EA1), Etna_24 (EA1), FarmerDoug_24 (EA1), GardenB_24 (EA1), Hamlet_24 (EA1), JasonD_28 (EA1), Jenos_26 (EA1), KingJulien_24 (EA1), Leafus_24 (EA1), McGalleon_25 (EA1), Nattles_24 (EA1), Peppino_24 (EA1), Raccoon_24 (EA1), Redfield_24 (EA1), Schnapsidee_24 (EA1), SonOfLevi_24 (EA1), Stormbreaker8_24 (EA1),

Start 23:

- Found in 156 of 176 (88.6%) of genes in pham
- Manual Annotations of this start: 143 of 165
- Called 97.4% of time when present
- Phage (with cluster) where this start called: Alakazam_24 (EA5), AlexAdler_24 (EA1), Alyxandracam_24 (EA1), Andromedas_23 (EA2), Antoinette_24 (EA1), AranulaLuti_24 (EA1), Araxxi_34 (EM1), Arete_34 (EM1), Armstrong_20 (EB), Asta_24 (EA1), Aubergine_24 (EA1), AxiPup_24 (EA1), Baines_24 (EA1), Bandik_24 (EA1), Barnstormer_20 (EH), BeautPeep30_24 (EA1), Benjalauren_25 (EA1), Bernstein_20 (EB), BigRedClifford_24 (EA1), Blage_24 (EA1), BonesMcCoy_24

(EA1), Bonino_24 (EA1), Brahms_20 (EB), Byron23_24 (EA1), Caron_20 (EH), Carostasia_23 (EA10), Casino_33 (EM1), Cen1621_19 (EH), Chako_24 (EA1), Chamuel_24 (EA1), ChikPic_23 (EA2), Christoph_24 (EA1), Clancy_24 (EA1), Clayda5_20 (EB), Clock_23 (EA5), ColaCorta_23 (EA2), Coltrane_20 (EB), Convict_24 (EA1), Dave_24 (EA1), Delphidian_24 (EA1), Den3_24 (EA1), DoTi_34 (EM1), Dothraki_24 (EA1), Duocatuli_24 (EA1), Eden_20 (EB), Eevee_1 (JA), Eleri_23 (EA2), Erla_24 (EA1), Espinosa_24 (EA1), Etta_24 (EA1), Figueroism_24 (EA1), Finny_23 (EA2), Franklin22_21 (EB), Gack_20 (EB), Garey24_24 (EA1), Gargoyle_24 (EA1), Gelo_24 (EA1), Gershwin_24 (EA1), Glamour_22 (EA2), Greys_24 (EA1), Gshelby23_32 (EM1), Gubbabump_24 (EA1), HanSolo_24 (EA1), HankSprout_25 (EA1), Hannabella_34 (EM1), Honk_19 (EH), HungryHenry_24 (EA1), Huwbert_28 (GG), Ilzat_24 (EA1), Inventa_24 (EA1), Ioannes_24 (EA1), Janus167_24 (EA1), JasperRussell_24 (EA1), Jerbirus_25 (EA1), JeriBeth_25 (EA1), JoyLin_1 (JA), Juanyo_23 (EA10), Kale_24 (EA1), KannH_24 (EA1), Klimt_24 (EA1), Knox_24 (EA1), Kurt1_24 (EA1), Lovelyunicorn_24 (EA1), Ludgate_24 (EA1), MCubed_23 (EA2), MaeLinda_24 (EA1), ManRay_24 (EA1), Mandalorian_23 (EA10), Martin_25 (EA1), MillyPhilly_24 (EA1), MrWorldwide_24 (EA1), Nagem_24 (EA1), Nebulous_23 (EA5), Neferthena_23 (EA5), NickSell_24 (EA1), Nucci_23 (EA10), Oats_24 (EA1), OldNelly_24 (EA1), Oxtober96_24 (EA1), Papafritta_24 (EA1), ParleG_24 (EA1), Peep_24 (EA1), Pherferi_24 (EA1), Phiderman_24 (EA1), Phireproof_24 (EA1), PhredFlintston_24 (EA1), Phriends_24 (EA1), Pippin15_1 (JA), Pocket_24 (EA1), PuppyEggo_24 (EA1), Quartz_23 (EA10), Rapheph_24 (EA1), Raptor_24 (EA1), Renzie_24 (EA1), Riyhil_24 (EA1), Robinson_24 (EA1), Rog141_24 (EA1), Rollins_20 (EB), SJay_24 (EA1), Sansa_22 (EA2), Saratos_23 (EA2), Scruffy_34 (EM1), Sedgewig_24 (EA1), ShaiHulud_24 (EA1), Shamu_23 (EA2), Shee_24 (EA1), Skylord_20 (EB), SoilGremlin_24 (EA1), Stanktossa_24 (EA1), StingRay_24 (EA1), StirfryIV_24 (EA1), Strathdee_24 (EA1), SuMoo_20 (EH), Superfresh_24 (EA1), TatarkaPM_24 (EA1), Teagan_24 (EA1), TeddyBear_24 (EA1), Tenda_24 (EA1), Thompsone_24 (EA1), Thorongil_24 (EA1), TinSulphur_24 (EA1), Triscuit_27 (GG), UtzChips_20 (EH), Velene_24 (EA1), Vispistious_24 (EA1), Vitas_20 (EB), WildNOut_24 (EA1), Winzigespinne_24 (EA1), Yotsuba_1 (JA), YuuY_23 (EA10), Zada_24 (EA1), Zenitsu_23 (EA2),

Start 25:

- Found in 36 of 176 (20.5%) of genes in pham
- Manual Annotations of this start: 1 of 165
- Called 2.8% of time when present
- Phage (with cluster) where this start called: Mabodamaca_21 (EH),

Summary by clusters:

There are 9 clusters represented in this pham: EH, EB, GG, EM1, EA1, EA2, EA5, JA, EA10,

Info for manual annotations of cluster EA1:

- Start number 21 was manually annotated 2 times for cluster EA1.
- Start number 22 was manually annotated 19 times for cluster EA1.
- Start number 23 was manually annotated 97 times for cluster EA1.

Info for manual annotations of cluster EA10:

- Start number 23 was manually annotated 6 times for cluster EA10.

Info for manual annotations of cluster EA2:

- Start number 23 was manually annotated 11 times for cluster EA2.

Info for manual annotations of cluster EA5:

- Start number 23 was manually annotated 4 times for cluster EA5.

Info for manual annotations of cluster EB:

- Start number 23 was manually annotated 11 times for cluster EB.

Info for manual annotations of cluster EH:

- Start number 23 was manually annotated 6 times for cluster EH.
- Start number 25 was manually annotated 1 time for cluster EH.

Info for manual annotations of cluster EM1:

- Start number 23 was manually annotated 6 times for cluster EM1.

Info for manual annotations of cluster GG:

- Start number 23 was manually annotated 2 times for cluster GG.

Gene Information:

Gene: Acosta_25 Start: 18509, Stop: 19330, Start Num: 22

Candidate Starts for Acosta_25:

(Start: 22 @18509 has 19 MA's), (Start: 25 @18542 has 1 MA's), (29, 18599), (38, 18761), (50, 18938), (57, 19019), (62, 19052), (83, 19280),

Gene: Agente005_25 Start: 18800, Stop: 19540, Start Num: 21

Candidate Starts for Agente005_25:

(Start: 21 @18800 has 2 MA's), (Start: 25 @18833 has 1 MA's), (29, 18890), (38, 19040), (49, 19187), (76, 19433),

Gene: Alakazam_24 Start: 18140, Stop: 18949, Start Num: 23

Candidate Starts for Alakazam_24:

(Start: 23 @18140 has 143 MA's), (28, 18206), (40, 18416), (50, 18563), (57, 18644), (68, 18734), (72, 18806),

Gene: AlexAdler_24 Start: 18247, Stop: 19053, Start Num: 23

Candidate Starts for AlexAdler_24:

(7, 18025), (12, 18106), (13, 18130), (Start: 23 @18247 has 143 MA's), (42, 18562), (50, 18667), (57, 18748), (75, 18937), (76, 18946),

Gene: Alyxandracam_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for Alyxandracam_24:

(7, 18037), (12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Andromedas_23 Start: 18467, Stop: 19249, Start Num: 23

Candidate Starts for Andromedas_23:

(Start: 23 @18467 has 143 MA's), (36, 18701), (44, 18818), (56, 18944), (77, 19166), (81, 19199),

Gene: Antoinette_24 Start: 18247, Stop: 19053, Start Num: 23

Candidate Starts for Antoinette_24:

(7, 18025), (12, 18106), (13, 18130), (Start: 23 @18247 has 143 MA's), (42, 18562), (50, 18667), (57, 18748), (75, 18937),

Gene: AranulaLuti_24 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for AranulaLuti_24:

(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: Araxxi_34 Start: 41327, Stop: 42091, Start Num: 23

Candidate Starts for Araxxi_34:

(Start: 23 @41327 has 143 MA's), (Start: 25 @41354 has 1 MA's), (32, 41483), (37, 41552), (38, 41558), (52, 41732), (55, 41765), (59, 41798), (69, 41876),

Gene: Arete_34 Start: 41089, Stop: 41835, Start Num: 23

Candidate Starts for Arete_34:

(Start: 23 @41089 has 143 MA's), (Start: 25 @41116 has 1 MA's), (29, 41173), (37, 41314), (55, 41527), (74, 41716), (83, 41788),

Gene: Armstrong_20 Start: 15862, Stop: 16719, Start Num: 23

Candidate Starts for Armstrong_20:

(1, 15130), (15, 15745), (Start: 23 @15862 has 143 MA's), (26, 15898), (38, 16144), (46, 16294), (47, 16306), (83, 16672),

Gene: Asta_24 Start: 18556, Stop: 19362, Start Num: 23

Candidate Starts for Asta_24:

(Start: 23 @18556 has 143 MA's), (42, 18871), (50, 18976), (57, 19057), (75, 19246), (76, 19255),

Gene: Aubergine_24 Start: 18556, Stop: 19362, Start Num: 23

Candidate Starts for Aubergine_24:

(Start: 23 @18556 has 143 MA's), (42, 18871), (50, 18976), (57, 19057), (75, 19246), (76, 19255),

Gene: AxiPup_24 Start: 18256, Stop: 19062, Start Num: 23

Candidate Starts for AxiPup_24:

(7, 18034), (12, 18115), (13, 18139), (Start: 23 @18256 has 143 MA's), (42, 18571), (50, 18676), (57, 18757), (75, 18946), (76, 18955),

Gene: Baines_24 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for Baines_24:

(7, 18321), (12, 18402), (13, 18426), (Start: 22 @18537 has 19 MA's), (Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: Balsa_24 Start: 18648, Stop: 19388, Start Num: 22

Candidate Starts for Balsa_24:

(Start: 22 @18648 has 19 MA's), (Start: 25 @18681 has 1 MA's), (29, 18738), (38, 18888), (43, 18960), (49, 19035), (53, 19065), (76, 19281),

Gene: Bandik_24 Start: 18255, Stop: 19061, Start Num: 23

Candidate Starts for Bandik_24:

(7, 18033), (12, 18114), (13, 18138), (Start: 23 @18255 has 143 MA's), (42, 18570), (50, 18675), (57, 18756), (75, 18945),

Gene: Barnstormer_20 Start: 17742, Stop: 18602, Start Num: 23

Candidate Starts for Barnstormer_20:

(Start: 23 @17742 has 143 MA's), (45, 18162), (66, 18360),

Gene: BeautPeep30_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for BeautPeep30_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: BeeBee8_25 Start: 18813, Stop: 19553, Start Num: 22

Candidate Starts for BeeBee8_25:

(12, 18672), (Start: 22 @18813 has 19 MA's), (Start: 25 @18846 has 1 MA's), (29, 18903), (38, 19053), (43, 19125), (49, 19200), (76, 19446),

Gene: Benjalauren_25 Start: 18552, Stop: 19358, Start Num: 23

Candidate Starts for Benjalauren_25:

(Start: 23 @18552 has 143 MA's), (42, 18867), (50, 18972), (57, 19053), (75, 19242), (76, 19251),

Gene: Bernstein_20 Start: 15893, Stop: 16774, Start Num: 23

Candidate Starts for Bernstein_20:

(9, 15716), (Start: 23 @15893 has 143 MA's), (26, 15929), (38, 16175), (50, 16388), (58, 16469), (83, 16727),

Gene: BigRedClifford_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for BigRedClifford_24:

(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Blage_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for Blage_24:

(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: BonesMcCoy_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for BonesMcCoy_24:

(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Bonino_24 Start: 18532, Stop: 19338, Start Num: 23

Candidate Starts for Bonino_24:

(7, 18310), (12, 18391), (13, 18415), (Start: 22 @18526 has 19 MA's), (Start: 23 @18532 has 143 MA's), (42, 18847), (50, 18952), (57, 19033), (75, 19222), (76, 19231),

Gene: Brahms_20 Start: 15838, Stop: 16722, Start Num: 23

Candidate Starts for Brahms_20:

(9, 15661), (Start: 23 @15838 has 143 MA's), (26, 15874), (38, 16120), (50, 16336), (58, 16417), (63, 16453),

Gene: Byron23_24 Start: 18264, Stop: 19070, Start Num: 23

Candidate Starts for Byron23_24:

(7, 18042), (12, 18123), (13, 18147), (Start: 23 @18264 has 143 MA's), (42, 18579), (50, 18684), (57, 18765), (75, 18954),

Gene: Calix_24 Start: 18530, Stop: 19342, Start Num: 22

Candidate Starts for Calix_24:

(7, 18314), (12, 18395), (13, 18419), (Start: 22 @18530 has 19 MA's), (Start: 23 @18536 has 143 MA's), (42, 18851), (50, 18956), (57, 19037), (75, 19226), (76, 19235),

Gene: Caron_20 Start: 17127, Stop: 17996, Start Num: 23

Candidate Starts for Caron_20:

(7, 16896), (10, 16956), (Start: 23 @17127 has 143 MA's), (27, 17169), (66, 17745),

Gene: Carostasia_23 Start: 18678, Stop: 19541, Start Num: 23

Candidate Starts for Carostasia_23:

(8, 18459), (Start: 23 @18678 has 143 MA's), (36, 18912), (37, 18918), (44, 19029), (56, 19155), (80, 19404), (82, 19416), (84, 19419), (88, 19491),

Gene: Casino_33 Start: 41061, Stop: 41807, Start Num: 23

Candidate Starts for Casino_33:

(Start: 23 @41061 has 143 MA's), (Start: 25 @41088 has 1 MA's), (29, 41145), (37, 41286), (52, 41466), (55, 41499), (74, 41688), (83, 41760),

Gene: Cen1621_19 Start: 16339, Stop: 17049, Start Num: 23

Candidate Starts for Cen1621_19:

(11, 16189), (Start: 23 @16339 has 143 MA's), (Start: 25 @16366 has 1 MA's), (65, 16858), (73, 16927), (79, 16999),

Gene: Chako_24 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for Chako_24:

(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: Chamuel_24 Start: 18538, Stop: 19344, Start Num: 23

Candidate Starts for Chamuel_24:

(7, 18316), (12, 18397), (13, 18421), (Start: 22 @18532 has 19 MA's), (Start: 23 @18538 has 143 MA's), (42, 18853), (50, 18958), (57, 19039), (75, 19228), (76, 19237),

Gene: ChikPic_23 Start: 18483, Stop: 19265, Start Num: 23

Candidate Starts for ChikPic_23:

(Start: 23 @18483 has 143 MA's), (36, 18717), (44, 18834), (56, 18960), (77, 19182), (81, 19215),

Gene: Christoph_24 Start: 18554, Stop: 19360, Start Num: 23

Candidate Starts for Christoph_24:

(Start: 23 @18554 has 143 MA's), (42, 18869), (50, 18974), (57, 19055), (75, 19244), (76, 19253),

Gene: Clancy_24 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for Clancy_24:

(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: Clayda5_20 Start: 15868, Stop: 16725, Start Num: 23

Candidate Starts for Clayda5_20:

(1, 15136), (15, 15751), (Start: 23 @15868 has 143 MA's), (26, 15904), (38, 16150), (46, 16300), (47, 16312), (83, 16678),

Gene: Clock_23 Start: 18689, Stop: 19501, Start Num: 23

Candidate Starts for Clock_23:

(Start: 23 @18689 has 143 MA's), (Start: 25 @18716 has 1 MA's), (26, 18722), (35, 18911), (40, 18965), (50, 19112), (57, 19193), (75, 19385), (76, 19394),

Gene: ColaCorta_23 Start: 18467, Stop: 19249, Start Num: 23

Candidate Starts for ColaCorta_23:

(Start: 23 @18467 has 143 MA's), (36, 18701), (44, 18818), (56, 18944), (77, 19166), (81, 19199),

Gene: Coltrane_20 Start: 15838, Stop: 16722, Start Num: 23

Candidate Starts for Coltrane_20:

(9, 15661), (Start: 23 @15838 has 143 MA's), (26, 15874), (38, 16120), (50, 16336), (58, 16417), (63, 16453),

Gene: Convict_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for Convict_24:

(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Dave_24 Start: 18247, Stop: 19053, Start Num: 23

Candidate Starts for Dave_24:

(7, 18025), (12, 18106), (13, 18130), (Start: 23 @18247 has 143 MA's), (42, 18562), (50, 18667), (57, 18748), (75, 18937),

Gene: Delphidian_24 Start: 18258, Stop: 19064, Start Num: 23

Candidate Starts for Delphidian_24:

(12, 18117), (13, 18141), (Start: 23 @18258 has 143 MA's), (42, 18573), (50, 18678), (57, 18759), (75, 18948),

Gene: Den3_24 Start: 18263, Stop: 19069, Start Num: 23

Candidate Starts for Den3_24:

(12, 18122), (13, 18146), (Start: 23 @18263 has 143 MA's), (42, 18578), (50, 18683), (57, 18764), (75, 18953),

Gene: DoTi_34 Start: 41431, Stop: 42195, Start Num: 23

Candidate Starts for DoTi_34:

(17, 41338), (Start: 23 @41431 has 143 MA's), (Start: 25 @41458 has 1 MA's), (32, 41587), (38, 41662), (52, 41836), (55, 41869), (59, 41902), (69, 41980),

Gene: Dothraki_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for Dothraki_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Duocatuli_24 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for Duocatuli_24:

(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: Eden_20 Start: 16231, Stop: 17001, Start Num: 23

Candidate Starts for Eden_20:

(Start: 23 @16231 has 143 MA's), (31, 16324), (38, 16468), (40, 16498), (43, 16540), (51, 16636), (83, 16954),

Gene: Eevee_1 Start: 116, Stop: 946, Start Num: 23

Candidate Starts for Eevee_1:

(Start: 23 @116 has 143 MA's), (29, 200), (39, 380), (43, 434), (54, 590), (77, 839),

Gene: Eleri_23 Start: 18480, Stop: 19262, Start Num: 23

Candidate Starts for Eleri_23:

(Start: 23 @18480 has 143 MA's), (36, 18714), (44, 18831), (56, 18957), (77, 19179), (81, 19212),

Gene: Endor_25 Start: 18780, Stop: 19520, Start Num: 22

Candidate Starts for Endor_25:

(Start: 22 @18780 has 19 MA's), (Start: 25 @18813 has 1 MA's), (29, 18870), (38, 19020), (43, 19092), (49, 19167), (76, 19413), (83, 19473), (85, 19485),

Gene: Erla_24 Start: 18536, Stop: 19342, Start Num: 23

Candidate Starts for Erla_24:

(7, 18314), (12, 18395), (13, 18419), (Start: 22 @18530 has 19 MA's), (Start: 23 @18536 has 143 MA's), (42, 18851), (50, 18956), (57, 19037), (75, 19226), (76, 19235),

Gene: Espinosa_24 Start: 18554, Stop: 19360, Start Num: 23

Candidate Starts for Espinosa_24:

(Start: 23 @18554 has 143 MA's), (42, 18869), (50, 18974), (57, 19055), (75, 19244), (76, 19253),

Gene: Etna_24 Start: 18641, Stop: 19381, Start Num: 22

Candidate Starts for Etna_24:

(12, 18500), (Start: 22 @18641 has 19 MA's), (Start: 25 @18674 has 1 MA's), (29, 18731), (38, 18881), (43, 18953), (49, 19028), (53, 19058), (76, 19274),

Gene: Etta_24 Start: 18540, Stop: 19346, Start Num: 23

Candidate Starts for Etta_24:

(7, 18318), (12, 18399), (13, 18423), (Start: 22 @18534 has 19 MA's), (Start: 23 @18540 has 143 MA's), (42, 18855), (50, 18960), (57, 19041), (75, 19230), (76, 19239),

Gene: FarmerDoug_24 Start: 18356, Stop: 19096, Start Num: 22

Candidate Starts for FarmerDoug_24:

(Start: 22 @18356 has 19 MA's), (Start: 25 @18389 has 1 MA's), (29, 18446), (38, 18596), (43, 18668), (49, 18743), (61, 18842), (67, 18878), (72, 18956), (76, 18989),

Gene: Figueroism_24 Start: 18243, Stop: 19049, Start Num: 23

Candidate Starts for Figueroism_24:

(7, 18021), (12, 18102), (13, 18126), (Start: 23 @18243 has 143 MA's), (42, 18558), (50, 18663), (57, 18744), (75, 18933),

Gene: Finny_23 Start: 18466, Stop: 19248, Start Num: 23

Candidate Starts for Finny_23:

(Start: 23 @18466 has 143 MA's), (36, 18700), (44, 18817), (56, 18943), (77, 19165), (81, 19198),

Gene: Franklin22_21 Start: 16416, Stop: 17186, Start Num: 23

Candidate Starts for Franklin22_21:

(2, 15909), (3, 16089), (9, 16242), (Start: 23 @16416 has 143 MA's), (38, 16653), (40, 16683), (43, 16725), (74, 17067), (81, 17136),

Gene: Gack_20 Start: 16302, Stop: 17072, Start Num: 23

Candidate Starts for Gack_20:

(3, 15975), (9, 16128), (Start: 23 @16302 has 143 MA's), (38, 16539), (40, 16569), (43, 16611), (74, 16953), (81, 17022),

Gene: GardenB_24 Start: 18645, Stop: 19385, Start Num: 22

Candidate Starts for GardenB_24:

(18, 18576), (Start: 22 @18645 has 19 MA's), (Start: 25 @18678 has 1 MA's), (29, 18735), (34, 18858), (38, 18885), (49, 19032), (75, 19269), (76, 19278),

Gene: Garey24_24 Start: 18519, Stop: 19325, Start Num: 23

Candidate Starts for Garey24_24:

(7, 18297), (12, 18378), (13, 18402), (Start: 22 @18513 has 19 MA's), (Start: 23 @18519 has 143 MA's), (42, 18834), (50, 18939), (57, 19020), (75, 19209), (76, 19218),

Gene: Gargoyle_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for Gargoyle_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Gelo_24 Start: 18540, Stop: 19346, Start Num: 23

Candidate Starts for Gelo_24:

(7, 18318), (12, 18399), (13, 18423), (Start: 22 @18534 has 19 MA's), (Start: 23 @18540 has 143 MA's), (42, 18855), (50, 18960), (57, 19041), (75, 19230), (76, 19239),

Gene: Gershwin_24 Start: 18556, Stop: 19362, Start Num: 23

Candidate Starts for Gershwin_24:

(Start: 23 @18556 has 143 MA's), (42, 18871), (50, 18976), (57, 19057), (75, 19246), (76, 19255),

Gene: Glamour_22 Start: 18468, Stop: 19250, Start Num: 23

Candidate Starts for Glamour_22:

(Start: 23 @18468 has 143 MA's), (36, 18702), (44, 18819), (56, 18945), (77, 19167), (81, 19200),

Gene: Greys_24 Start: 18256, Stop: 19062, Start Num: 23

Candidate Starts for Greys_24:

(12, 18115), (13, 18139), (Start: 23 @18256 has 143 MA's), (42, 18571), (50, 18676), (57, 18757), (75, 18946),

Gene: Gshelby23_32 Start: 40996, Stop: 41742, Start Num: 23

Candidate Starts for Gshelby23_32:

(Start: 23 @40996 has 143 MA's), (Start: 25 @41023 has 1 MA's), (29, 41080), (37, 41221), (52, 41401), (55, 41434), (74, 41623), (83, 41695),

Gene: Gubbabump_24 Start: 18545, Stop: 19351, Start Num: 23

Candidate Starts for Gubbabump_24:

(Start: 23 @18545 has 143 MA's), (42, 18860), (50, 18965), (57, 19046), (75, 19235), (76, 19244),

Gene: Hamlet_24 Start: 18648, Stop: 19388, Start Num: 22

Candidate Starts for Hamlet_24:

(Start: 22 @18648 has 19 MA's), (Start: 25 @18681 has 1 MA's), (29, 18738), (38, 18888), (43, 18960), (49, 19035), (53, 19065), (76, 19281),

Gene: HanSolo_24 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for HanSolo_24:

(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: HankSprout_25 Start: 18423, Stop: 19229, Start Num: 23

Candidate Starts for HankSprout_25:

(Start: 23 @18423 has 143 MA's), (42, 18738), (50, 18843), (57, 18924), (75, 19113), (76, 19122),

Gene: Hannabella_34 Start: 41037, Stop: 41783, Start Num: 23

Candidate Starts for Hannabella_34:

(Start: 23 @41037 has 143 MA's), (Start: 25 @41064 has 1 MA's), (29, 41121), (37, 41262), (52, 41442), (55, 41475), (74, 41664), (83, 41736),

Gene: Honk_19 Start: 16206, Stop: 16907, Start Num: 23

Candidate Starts for Honk_19:

(4, 15921), (6, 15963), (Start: 23 @16206 has 143 MA's), (Start: 25 @16233 has 1 MA's), (38, 16440), (41, 16488), (43, 16512), (73, 16785), (77, 16842), (79, 16857),

Gene: HungryHenry_24 Start: 18553, Stop: 19359, Start Num: 23

Candidate Starts for HungryHenry_24:

(Start: 23 @18553 has 143 MA's), (42, 18868), (50, 18973), (57, 19054), (75, 19243), (76, 19252),

Gene: Huwbert_28 Start: 10411, Stop: 11349, Start Num: 23

Candidate Starts for Huwbert_28:

(Start: 23 @10411 has 143 MA's), (24, 10420), (Start: 25 @10438 has 1 MA's), (30, 10501), (38, 10657), (71, 11086),

Gene: Ilzat_24 Start: 18552, Stop: 19358, Start Num: 23

Candidate Starts for Ilzat_24:

(Start: 23 @18552 has 143 MA's), (42, 18867), (50, 18972), (57, 19053), (75, 19242), (76, 19251),

Gene: Inventa_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for Inventa_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Ioannes_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for Ioannes_24:

(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Janus167_24 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for Janus167_24:

(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: JasonD_28 Start: 18670, Stop: 19491, Start Num: 22

Candidate Starts for JasonD_28:

(Start: 22 @18670 has 19 MA's), (Start: 25 @18703 has 1 MA's), (29, 18760), (38, 18922), (50, 19099), (57, 19180), (62, 19213), (74, 19369), (83, 19441),

Gene: JasperRussell_24 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for JasperRussell_24:

(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: Jenos_26 Start: 18997, Stop: 19818, Start Num: 22

Candidate Starts for Jenos_26:

(14, 18886), (Start: 22 @18997 has 19 MA's), (Start: 25 @19030 has 1 MA's), (38, 19249), (50, 19426), (57, 19507), (62, 19540), (83, 19768),

Gene: Jerbirus_25 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for Jerbirus_25:

(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: JeriBeth_25 Start: 18399, Stop: 19205, Start Num: 23

Candidate Starts for JeriBeth_25:

(Start: 23 @18399 has 143 MA's), (42, 18714), (50, 18819), (57, 18900), (75, 19089), (76, 19098),

Gene: JoyLin_1 Start: 116, Stop: 946, Start Num: 23

Candidate Starts for JoyLin_1:

(Start: 23 @116 has 143 MA's), (29, 200), (39, 380), (43, 434), (54, 590), (77, 839),

Gene: Juanyo_23 Start: 18651, Stop: 19424, Start Num: 23

Candidate Starts for Juanyo_23:

(12, 18513), (20, 18645), (Start: 23 @18651 has 143 MA's), (36, 18885), (42, 18966), (56, 19128), (78, 19344),

Gene: Kale_24 Start: 18558, Stop: 19364, Start Num: 23

Candidate Starts for Kale_24:

(Start: 23 @18558 has 143 MA's), (42, 18873), (50, 18978), (57, 19059), (75, 19248), (76, 19257),

Gene: KannH_24 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for KannH_24:

(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: KingJulien_24 Start: 18641, Stop: 19381, Start Num: 22

Candidate Starts for KingJulien_24:

(12, 18500), (Start: 22 @18641 has 19 MA's), (Start: 25 @18674 has 1 MA's), (29, 18731), (38, 18881), (43, 18953), (49, 19028), (76, 19274),

Gene: Klimt_24 Start: 18538, Stop: 19344, Start Num: 23

Candidate Starts for Klimt_24:

(7, 18316), (12, 18397), (13, 18421), (Start: 22 @18532 has 19 MA's), (Start: 23 @18538 has 143 MA's), (42, 18853), (50, 18958), (57, 19039), (75, 19228), (76, 19237),

Gene: Knox_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for Knox_24:

(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Kurt1_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for Kurt1_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Leafus_24 Start: 18786, Stop: 19526, Start Num: 22

Candidate Starts for Leafus_24:

(Start: 22 @18786 has 19 MA's), (Start: 25 @18819 has 1 MA's), (29, 18876), (38, 19026), (43, 19098), (76, 19419),

Gene: Lovelyunicorn_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for Lovelyunicorn_24:

(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Ludgate_24 Start: 18255, Stop: 19061, Start Num: 23
Candidate Starts for Ludgate_24:
(7, 18033), (12, 18114), (13, 18138), (Start: 23 @18255 has 143 MA's), (42, 18570), (50, 18675), (57, 18756), (75, 18945),

Gene: MCubed_23 Start: 18494, Stop: 19276, Start Num: 23
Candidate Starts for MCubed_23:
(Start: 23 @18494 has 143 MA's), (36, 18728), (44, 18845), (56, 18971), (77, 19193), (81, 19226),

Gene: Mabodamaca_21 Start: 18203, Stop: 18886, Start Num: 25
Candidate Starts for Mabodamaca_21:
(Start: 23 @18176 has 143 MA's), (Start: 25 @18203 has 1 MA's), (33, 18347),

Gene: MaeLinda_24 Start: 18261, Stop: 19067, Start Num: 23
Candidate Starts for MaeLinda_24:
(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: ManRay_24 Start: 18556, Stop: 19362, Start Num: 23
Candidate Starts for ManRay_24:
(Start: 23 @18556 has 143 MA's), (42, 18871), (50, 18976), (57, 19057), (75, 19246), (76, 19255),

Gene: Mandalorian_23 Start: 18676, Stop: 19539, Start Num: 23
Candidate Starts for Mandalorian_23:
(8, 18457), (Start: 23 @18676 has 143 MA's), (36, 18910), (37, 18916), (44, 19027), (56, 19153), (80, 19402), (82, 19414), (84, 19417), (88, 19489),

Gene: Martin_25 Start: 18261, Stop: 19067, Start Num: 23
Candidate Starts for Martin_25:
(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: McGalleon_25 Start: 19116, Stop: 19937, Start Num: 22
Candidate Starts for McGalleon_25:
(5, 18864), (16, 19017), (Start: 22 @19116 has 19 MA's), (Start: 25 @19149 has 1 MA's), (38, 19368), (50, 19545), (57, 19626), (62, 19659), (83, 19887),

Gene: MillyPhilly_24 Start: 18258, Stop: 19064, Start Num: 23
Candidate Starts for MillyPhilly_24:
(12, 18117), (13, 18141), (Start: 23 @18258 has 143 MA's), (42, 18573), (50, 18678), (57, 18759), (75, 18948),

Gene: MonChoix_23 Start: 18301, Stop: 19041, Start Num: 21
Candidate Starts for MonChoix_23:
(Start: 21 @18301 has 2 MA's), (Start: 25 @18334 has 1 MA's), (29, 18391), (38, 18541), (43, 18613), (49, 18688), (76, 18934), (83, 18994),

Gene: MrWorldwide_24 Start: 18262, Stop: 19068, Start Num: 23
Candidate Starts for MrWorldwide_24:
(Start: 23 @18262 has 143 MA's), (42, 18577), (50, 18682), (57, 18763), (75, 18952),

Gene: Nagem_24 Start: 18255, Stop: 19061, Start Num: 23
Candidate Starts for Nagem_24:

(7, 18033), (12, 18114), (13, 18138), (Start: 23 @18255 has 143 MA's), (42, 18570), (50, 18675), (57, 18756), (75, 18945),

Gene: Nattles_24 Start: 18536, Stop: 19348, Start Num: 22

Candidate Starts for Nattles_24:

(7, 18320), (12, 18401), (13, 18425), (Start: 22 @18536 has 19 MA's), (Start: 23 @18542 has 143 MA's), (42, 18857), (50, 18962), (57, 19043), (75, 19232), (76, 19241),

Gene: Nebulous_23 Start: 18708, Stop: 19520, Start Num: 23

Candidate Starts for Nebulous_23:

(Start: 23 @18708 has 143 MA's), (Start: 25 @18735 has 1 MA's), (31, 18801), (35, 18930), (41, 19002), (50, 19131), (57, 19212), (60, 19245), (75, 19404),

Gene: Neferthena_23 Start: 18721, Stop: 19533, Start Num: 23

Candidate Starts for Neferthena_23:

(Start: 23 @18721 has 143 MA's), (Start: 25 @18748 has 1 MA's), (28, 18787), (37, 18961), (40, 18997), (43, 19039), (50, 19144), (57, 19225), (75, 19417), (76, 19426),

Gene: NickSell_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for NickSell_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Nucci_23 Start: 18665, Stop: 19528, Start Num: 23

Candidate Starts for Nucci_23:

(8, 18446), (Start: 23 @18665 has 143 MA's), (36, 18899), (37, 18905), (44, 19016), (56, 19142), (80, 19391), (82, 19403), (84, 19406), (88, 19478),

Gene: Oats_24 Start: 18556, Stop: 19362, Start Num: 23

Candidate Starts for Oats_24:

(Start: 23 @18556 has 143 MA's), (42, 18871), (50, 18976), (57, 19057), (75, 19246), (76, 19255),

Gene: OldNelly_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for OldNelly_24:

(12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Oxtober96_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for Oxtober96_24:

(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Papafritta_24 Start: 18552, Stop: 19358, Start Num: 23

Candidate Starts for Papafritta_24:

(Start: 23 @18552 has 143 MA's), (42, 18867), (50, 18972), (57, 19053), (75, 19242), (76, 19251),

Gene: ParleG_24 Start: 18262, Stop: 19068, Start Num: 23

Candidate Starts for ParleG_24:

(Start: 23 @18262 has 143 MA's), (42, 18577), (50, 18682), (57, 18763), (75, 18952),

Gene: Peep_24 Start: 18247, Stop: 19053, Start Num: 23

Candidate Starts for Peep_24:

(7, 18025), (12, 18106), (13, 18130), (Start: 23 @18247 has 143 MA's), (42, 18562), (50, 18667), (57, 18748), (75, 18937),

Gene: Peppino_24 Start: 18639, Stop: 19379, Start Num: 22

Candidate Starts for Peppino_24:

(Start: 22 @18639 has 19 MA's), (Start: 25 @18672 has 1 MA's), (29, 18729), (38, 18879), (43, 18951), (49, 19026), (53, 19056), (76, 19272),

Gene: Pherferi_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for Pherferi_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Phiderman_24 Start: 18258, Stop: 19064, Start Num: 23

Candidate Starts for Phiderman_24:

(7, 18036), (12, 18117), (13, 18141), (Start: 23 @18258 has 143 MA's), (42, 18573), (50, 18678), (57, 18759), (75, 18948),

Gene: Phireproof_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for Phireproof_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: PhredFlintston_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for PhredFlintston_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Phriends_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for Phriends_24:

(12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Pippin15_1 Start: 127, Stop: 969, Start Num: 23

Candidate Starts for Pippin15_1:

(19, 73), (Start: 23 @127 has 143 MA's), (29, 211), (39, 391), (54, 601), (70, 760),

Gene: Pocket_24 Start: 18541, Stop: 19347, Start Num: 23

Candidate Starts for Pocket_24:

(Start: 23 @18541 has 143 MA's), (42, 18856), (50, 18961), (57, 19042), (75, 19231), (76, 19240),

Gene: PuppyEggo_24 Start: 18256, Stop: 19062, Start Num: 23

Candidate Starts for PuppyEggo_24:

(7, 18034), (12, 18115), (13, 18139), (Start: 23 @18256 has 143 MA's), (42, 18571), (50, 18676), (57, 18757), (75, 18946), (76, 18955),

Gene: Quartz_23 Start: 18677, Stop: 19540, Start Num: 23

Candidate Starts for Quartz_23:

(8, 18458), (Start: 23 @18677 has 143 MA's), (36, 18911), (37, 18917), (44, 19028), (56, 19154), (80, 19403), (82, 19415), (84, 19418), (88, 19490),

Gene: Raccoon_24 Start: 18647, Stop: 19387, Start Num: 22

Candidate Starts for Raccoon_24:

(12, 18506), (Start: 22 @18647 has 19 MA's), (Start: 25 @18680 has 1 MA's), (29, 18737), (38, 18887), (43, 18959), (49, 19034), (76, 19280),

Gene: Rapheph_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for Rapheph_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Raptor_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for Raptor_24:

(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Redfield_24 Start: 18647, Stop: 19387, Start Num: 22

Candidate Starts for Redfield_24:

(Start: 22 @18647 has 19 MA's), (Start: 25 @18680 has 1 MA's), (29, 18737), (38, 18887), (43, 18959), (49, 19034), (53, 19064), (76, 19280),

Gene: Renzie_24 Start: 18247, Stop: 19053, Start Num: 23

Candidate Starts for Renzie_24:

(7, 18025), (12, 18106), (13, 18130), (Start: 23 @18247 has 143 MA's), (42, 18562), (50, 18667), (57, 18748), (75, 18937),

Gene: Riyhil_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for Riyhil_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Robinson_24 Start: 18250, Stop: 19056, Start Num: 23

Candidate Starts for Robinson_24:

(7, 18028), (12, 18109), (13, 18133), (Start: 22 @18244 has 19 MA's), (Start: 23 @18250 has 143 MA's), (42, 18565), (50, 18670), (57, 18751), (75, 18940),

Gene: Rog141_24 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for Rog141_24:

(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: Rollins_20 Start: 15893, Stop: 16774, Start Num: 23

Candidate Starts for Rollins_20:

(9, 15716), (Start: 23 @15893 has 143 MA's), (26, 15929), (38, 16175), (50, 16388), (58, 16469), (83, 16727),

Gene: SJay_24 Start: 18256, Stop: 19062, Start Num: 23

Candidate Starts for SJay_24:

(7, 18034), (12, 18115), (13, 18139), (Start: 23 @18256 has 143 MA's), (42, 18571), (50, 18676), (57, 18757), (75, 18946),

Gene: Sansa_22 Start: 18490, Stop: 19272, Start Num: 23

Candidate Starts for Sansa_22:

(Start: 23 @18490 has 143 MA's), (36, 18724), (44, 18841), (56, 18967), (77, 19189), (81, 19222),

Gene: Saratos_23 Start: 18468, Stop: 19250, Start Num: 23

Candidate Starts for Saratos_23:

(Start: 23 @18468 has 143 MA's), (36, 18702), (44, 18819), (56, 18945), (77, 19167), (81, 19200),

Gene: Schnapsidee_24 Start: 18640, Stop: 19380, Start Num: 22

Candidate Starts for Schnapsidee_24:

(12, 18499), (Start: 22 @18640 has 19 MA's), (Start: 25 @18673 has 1 MA's), (29, 18730), (38, 18880), (43, 18952), (49, 19027), (53, 19057), (76, 19273),

Gene: Scruffy_34 Start: 41322, Stop: 42068, Start Num: 23

Candidate Starts for Scruffy_34:

(Start: 23 @41322 has 143 MA's), (Start: 25 @41349 has 1 MA's), (29, 41406), (37, 41547), (55, 41760), (74, 41949), (83, 42021),

Gene: Sedgewig_24 Start: 18543, Stop: 19349, Start Num: 23

Candidate Starts for Sedgewig_24:

(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: ShaiHulud_24 Start: 18256, Stop: 19062, Start Num: 23

Candidate Starts for ShaiHulud_24:

(7, 18034), (12, 18115), (13, 18139), (Start: 23 @18256 has 143 MA's), (42, 18571), (50, 18676), (57, 18757), (75, 18946), (76, 18955),

Gene: Shamu_23 Start: 18480, Stop: 19262, Start Num: 23

Candidate Starts for Shamu_23:

(Start: 23 @18480 has 143 MA's), (36, 18714), (44, 18831), (56, 18957), (77, 19179), (81, 19212),

Gene: Shee_24 Start: 18258, Stop: 19064, Start Num: 23

Candidate Starts for Shee_24:

(7, 18036), (12, 18117), (13, 18141), (Start: 23 @18258 has 143 MA's), (42, 18573), (50, 18678), (57, 18759), (75, 18948),

Gene: Skylord_20 Start: 15838, Stop: 16722, Start Num: 23

Candidate Starts for Skylord_20:

(9, 15661), (Start: 23 @15838 has 143 MA's), (26, 15874), (38, 16120), (50, 16336), (58, 16417), (63, 16453), (74, 16603), (83, 16675),

Gene: SoilGremlin_24 Start: 18258, Stop: 19064, Start Num: 23

Candidate Starts for SoilGremlin_24:

(12, 18117), (13, 18141), (Start: 23 @18258 has 143 MA's), (42, 18573), (50, 18678), (57, 18759), (75, 18948),

Gene: SonOfLevi_24 Start: 18532, Stop: 19344, Start Num: 22

Candidate Starts for SonOfLevi_24:

(7, 18316), (12, 18397), (13, 18421), (Start: 22 @18532 has 19 MA's), (Start: 23 @18538 has 143 MA's), (42, 18853), (50, 18958), (57, 19039), (75, 19228), (76, 19237),

Gene: Stanktossa_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for Stanktossa_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: StingRay_24 Start: 18552, Stop: 19358, Start Num: 23

Candidate Starts for StingRay_24:

(Start: 23 @18552 has 143 MA's), (42, 18867), (50, 18972), (57, 19053), (75, 19242), (76, 19251),

Gene: StirfryIV_24 Start: 18543, Stop: 19349, Start Num: 23
Candidate Starts for StirfryIV_24:
(Start: 23 @18543 has 143 MA's), (42, 18858), (50, 18963), (57, 19044), (75, 19233), (76, 19242),

Gene: Stormbreaker8_24 Start: 18641, Stop: 19381, Start Num: 22
Candidate Starts for Stormbreaker8_24:
(12, 18500), (Start: 22 @18641 has 19 MA's), (Start: 25 @18674 has 1 MA's), (29, 18731), (38, 18881), (43, 18953), (49, 19028), (76, 19274),

Gene: Strathdee_24 Start: 18260, Stop: 19066, Start Num: 23
Candidate Starts for Strathdee_24:
(12, 18119), (13, 18143), (Start: 23 @18260 has 143 MA's), (42, 18575), (50, 18680), (57, 18761), (75, 18950),

Gene: SuMoo_20 Start: 17131, Stop: 17841, Start Num: 23
Candidate Starts for SuMoo_20:
(Start: 23 @17131 has 143 MA's), (Start: 25 @17158 has 1 MA's), (48, 17479), (81, 17791),

Gene: Superfresh_24 Start: 18247, Stop: 19053, Start Num: 23
Candidate Starts for Superfresh_24:
(7, 18025), (12, 18106), (13, 18130), (Start: 23 @18247 has 143 MA's), (42, 18562), (50, 18667), (57, 18748), (75, 18937),

Gene: TatarkaPM_24 Start: 18261, Stop: 19067, Start Num: 23
Candidate Starts for TatarkaPM_24:
(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Teagan_24 Start: 18255, Stop: 19061, Start Num: 23
Candidate Starts for Teagan_24:
(7, 18033), (12, 18114), (13, 18138), (Start: 23 @18255 has 143 MA's), (42, 18570), (50, 18675), (57, 18756), (75, 18945),

Gene: TeddyBear_24 Start: 18556, Stop: 19362, Start Num: 23
Candidate Starts for TeddyBear_24:
(Start: 23 @18556 has 143 MA's), (42, 18871), (50, 18976), (57, 19057), (75, 19246), (76, 19255),

Gene: Tenda_24 Start: 18554, Stop: 19360, Start Num: 23
Candidate Starts for Tenda_24:
(Start: 23 @18554 has 143 MA's), (42, 18869), (50, 18974), (57, 19055), (75, 19244), (76, 19253),

Gene: Thompsone_24 Start: 18259, Stop: 19065, Start Num: 23
Candidate Starts for Thompsone_24:
(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Thorongil_24 Start: 18256, Stop: 19062, Start Num: 23
Candidate Starts for Thorongil_24:
(7, 18034), (12, 18115), (13, 18139), (Start: 23 @18256 has 143 MA's), (42, 18571), (50, 18676), (57, 18757), (75, 18946), (76, 18955),

Gene: TinSulphur_24 Start: 18261, Stop: 19067, Start Num: 23

Candidate Starts for TinSulphur_24:

(7, 18039), (12, 18120), (13, 18144), (Start: 23 @18261 has 143 MA's), (42, 18576), (50, 18681), (57, 18762), (75, 18951),

Gene: Triscuit_27 Start: 10327, Stop: 11265, Start Num: 23

Candidate Starts for Triscuit_27:

(Start: 23 @10327 has 143 MA's), (24, 10336), (Start: 25 @10354 has 1 MA's), (30, 10417), (38, 10573), (71, 11002), (86, 11143),

Gene: UtzChips_20 Start: 17730, Stop: 18590, Start Num: 23

Candidate Starts for UtzChips_20:

(Start: 23 @17730 has 143 MA's), (45, 18150), (66, 18348),

Gene: Velene_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for Velene_24:

(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Vispistious_24 Start: 18256, Stop: 19062, Start Num: 23

Candidate Starts for Vispistious_24:

(7, 18034), (12, 18115), (13, 18139), (Start: 23 @18256 has 143 MA's), (42, 18571), (50, 18676), (57, 18757), (75, 18946), (76, 18955),

Gene: Vitas_20 Start: 15833, Stop: 16714, Start Num: 23

Candidate Starts for Vitas_20:

(9, 15656), (Start: 23 @15833 has 143 MA's), (26, 15869), (38, 16115), (50, 16328), (58, 16409), (83, 16667),

Gene: WildNOut_24 Start: 18259, Stop: 19065, Start Num: 23

Candidate Starts for WildNOut_24:

(12, 18118), (13, 18142), (Start: 23 @18259 has 143 MA's), (42, 18574), (50, 18679), (57, 18760), (75, 18949),

Gene: Winzigespinne_24 Start: 18542, Stop: 19348, Start Num: 23

Candidate Starts for Winzigespinne_24:

(Start: 23 @18542 has 143 MA's), (42, 18857), (50, 18962), (57, 19043), (75, 19232), (76, 19241),

Gene: Yotsuba_1 Start: 116, Stop: 946, Start Num: 23

Candidate Starts for Yotsuba_1:

(Start: 23 @116 has 143 MA's), (29, 200), (39, 380), (43, 434), (54, 590), (77, 839),

Gene: YuuY_23 Start: 18668, Stop: 19531, Start Num: 23

Candidate Starts for YuuY_23:

(12, 18527), (Start: 23 @18668 has 143 MA's), (31, 18761), (36, 18902), (37, 18908), (56, 19145), (64, 19208), (82, 19406), (84, 19409), (87, 19478), (88, 19481),

Gene: Zada_24 Start: 18241, Stop: 19047, Start Num: 23

Candidate Starts for Zada_24:

(7, 18019), (12, 18100), (13, 18124), (Start: 23 @18241 has 143 MA's), (42, 18556), (50, 18661), (57, 18742), (75, 18931),

Gene: Zenitsu_23 Start: 18495, Stop: 19277, Start Num: 23

Candidate Starts for Zenitsu_23:

(Start: 23 @18495 has 143 MA's), (36, 18729), (44, 18846), (56, 18972), (77, 19194), (81, 19227),