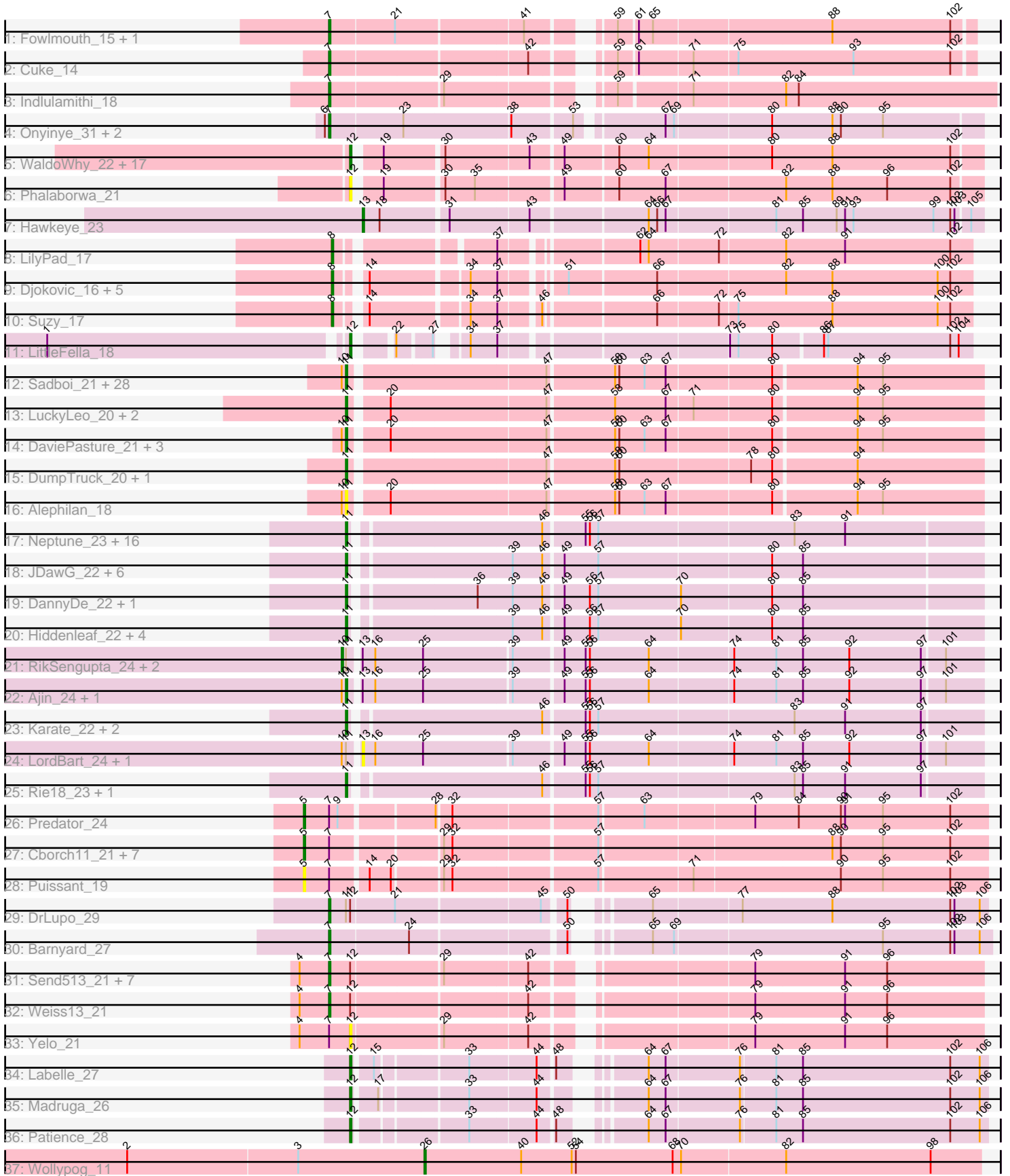


Pham 224368



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 224368 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224368 has 144 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Fowlmouth_15, MrMiyagi_15
- Track 2 : Cuke_14
- Track 3 : Indlulamithi_18
- Track 4 : Onyinye_31, Leopard_30, Aikoy_30
- Track 5 : WaldoWhy_22, Nova_21, Butterscotch_21, SirHarley_20, Penelope2018_21, Thoth_21, Chill_22, Giuseppe_21, Mopey_21, Prager_21, Troll4_21, PLOT_22, Adjutor_22, Visconti_21, Gumball_20, Helpful_22, Delton_21, PBI1_22
- Track 6 : Phalaborwa_21
- Track 7 : Hawkeye_23
- Track 8 : LilyPad_17
- Track 9 : Djokovic_16, Madi_16, Terapin_16, BiteSize_16, Sienna_16, BeyonCage_16
- Track 10 : Suzy_17
- Track 11 : LittleFella_18
- Track 12 : Sadboi_21, Sampudon_21, Yikes_22, Gibbin_22, Stormer_19, ParvusTarda_21, Lambo_21, OtterstedtS21_21, Fulcrum_22, Alyssamiracle_20, Lila22_21, Genamy16_20, MoiGyank_23, Avian_19, NovaSharks_20, GretelLyn_21, Rumi_20, BirthdayBoy_22, Patos_22, Astralis_19, GOATification_22, Erutan_21, Ranch_21, Jamemuya19_18, Wojtek_20, RazorC_19, NorManre_22, Jalebi_21, DoobyDoo_20
- Track 13 : LuckyLeo_20, Apeppi_19, Tillicus_21
- Track 14 : DaviePasture_21, Mima20_20, LavAbarElk_19, Zany_20
- Track 15 : DumpTruck_20, Xenia2_21
- Track 16 : Alephilan_18
- Track 17 : Neptune_23, Krampus_23, Pharpay_23, Gilda_23, Anakin_23, Rachella_23, Poultruss_22, Kate_23, AnnaSerena_23, CoolCookie_23, Potty_23, PhunaPhoke_23, Artiphact_23, Tedro_23, Cybele_23, OverHedge_23, NarutoRun_23
- Track 18 : JDawG_22, Dauntless_22, Crestdrop_22, Aesir_22, Annapurna_23, Erudite_22, MortySmith_21
- Track 19 : DannyDe_22, SilentWarrior_22
- Track 20 : Hiddenleaf_22, Snakehole_24, FreddieHg_22, JingleBells_22, Chivey_22
- Track 21 : RikSengupta_24, Bramble_24, Sparcetus_24
- Track 22 : Ajin_24, TinyMiny_24
- Track 23 : Karate_22, Haunter_23, Tongui_23
- Track 24 : LordBart_24, Kors_25

- Track 25 : Rie18_23, Hager_24
- Track 26 : Predator_24
- Track 27 : Cborch11_21, Phreeze_20, Damien_20, Beckerton_20, Oaker_20, Megatron06_22, Konstantine_25, Thumb_20
- Track 28 : Puissant_19
- Track 29 : DrLupo_29
- Track 30 : Barnyard_27
- Track 31 : Send513_21, MontyDev_21, Candle_21, Nilo_22, Papyrus_21, Riparian_21, Zenon_22, Rope_21
- Track 32 : Weiss13_21
- Track 33 : Yelo_21
- Track 34 : Labelle_27
- Track 35 : Madruga_26
- Track 36 : Patience_28
- Track 37 : Wollypog_11

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

The start number called the most often in the published annotations is 11, it was called in 63 of the 124 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aesir_22, Ajin_24, Alephilan_18, Alyssamiracle_20, Anakin_23, AnnaSerena_23, Annapurna_23, Apeppi_19, Artiphact_23, Astralis_19, Avian_19, BirthdayBoy_22, Chivey_22, CoolCookie_23, Crestdrop_22, Cybele_23, DannyDe_22, Dauntless_22, DaviePasture_21, DoobyDoo_20, DumpTruck_20, Erudite_22, Erutan_21, FreddieHg_22, Fulcrum_22, GOATification_22, Genamy16_20, Gibbin_22, Gilda_23, GretelLyn_21, Hager_24, Haunter_23, Hiddenleaf_22, JDawG_22, Jalebi_21, Jamemuya19_18, JingleBells_22, Karate_22, Kate_23, Krampus_23, Lambo_21, LavAbarEik_19, Lila22_21, LuckyLeo_20, Mima20_20, MoiGyank_23, MortySmith_21, NarutoRun_23, Neptune_23, NorManre_22, NovaSharks_20, OtterstedtS21_21, OverHedge_23, ParvusTarda_21, Patos_22, Pharpay_23, PhunaPhoke_23, Potty_23, Poultruss_22, Rachella_23, Ranch_21, RazorC_19, Rie18_23, Rumi_20, Sadboi_21, Sampudon_21, SilentWarrior_22, Snakehole_24, Stormer_19, Tedro_23, Tillicus_21, TinyMiny_24, Tongui_23, Wojtek_20, Xenia2_21, Yikes_22, Zany_20,

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

- Bramble_24, DrLupo_29, Kors_25, LordBart_24, RikSengupta_24, Sparcetus_24,

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

- Adjutor_22, Aikoy_30, Barnyard_27, Beckerton_20, Beyoncage_16, BiteSize_16, Butterscotch_21, Candle_21, Cborch11_21, Chill_22, Cuke_14, Damien_20, Delton_21, Djokovic_16, Fowlmouth_15, Giuseppe_21, Gumball_20, Hawkeye_23, Helpful_22, Inclulamithi_18, Konstantine_25, Labelle_27, Leopard_30, LilyPad_17, LittleFella_18, Madi_16, Madruga_26, Megatron06_22, MontyDev_21, Mopey_21, MrMiyagi_15, Nilo_22, Nova_21, Oaker_20, Onyinye_31, PB11_22, PLOT_22, Papyrus_21, Patience_28, Penelope2018_21, Phalaborwa_21, Phreeze_20, Prager_21, Predator_24, Puissant_19, Riparian_21, Rope_21, Send513_21, Sienna_16, SirHarley_20, Suzy_17, Terapin_16, Thoth_21, Thumb_20, Troll4_21,

Visconti_21, WaldoWhy_22, Weiss13_21, Wollypog_11, Yelo_21, Zenon_22,

Summary by start number:

Start 5:

- Found in 10 of 144 (6.9%) of genes in pham
- Manual Annotations of this start: 9 of 124
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beckerton_20 (H1), Cborch11_21 (H1), Damien_20 (H1), Konstantine_25 (H1), Megatron06_22 (H1), Oaker_20 (H1), Phreeze_20 (H1), Predator_24 (H1), Puissant_19 (H1), Thumb_20 (H1),

Start 7:

- Found in 29 of 144 (20.1%) of genes in pham
- Manual Annotations of this start: 18 of 124
- Called 62.1% of time when present
- Phage (with cluster) where this start called: Aikoy_30 (AE), Barnyard_27 (H2), Candle_21 (R), Cuke_14 (AC), DrLupo_29 (H2), Fowlmouth_15 (AC), Indlulamithi_18 (AC), Leopard_30 (AE), MontyDev_21 (R), MrMiyagi_15 (AC), Nilo_22 (R), Onyinye_31 (AE), Papyrus_21 (R), Riparian_21 (R), Rope_21 (R), Send513_21 (R), Weiss13_21 (R), Zenon_22 (R),

Start 8:

- Found in 8 of 144 (5.6%) of genes in pham
- Manual Annotations of this start: 8 of 124
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beyoncage_16 (DG1), BiteSize_16 (DG1), Djokovic_16 (DG1), LilyPad_17 (DG1), Madi_16 (DG1), Sienna_16 (DG1), Suzy_17 (DG1), Terapin_16 (DG1),

Start 10:

- Found in 41 of 144 (28.5%) of genes in pham
- Manual Annotations of this start: 2 of 124
- Called 7.3% of time when present
- Phage (with cluster) where this start called: Bramble_24 (EF), RikSengupta_24 (EF), Sparcetus_24 (EF),

Start 11:

- Found in 83 of 144 (57.6%) of genes in pham
- Manual Annotations of this start: 63 of 124
- Called 92.8% of time when present
- Phage (with cluster) where this start called: Aesir_22 (EF), Ajin_24 (EF), Alephilan_18 (DV), Alyssamiracle_20 (DV), Anakin_23 (EF), AnnaSerena_23 (EF), Annapurna_23 (EF), Apeppi_19 (DV), Artiphact_23 (EF), Astralis_19 (DV), Avian_19 (DV), BirthdayBoy_22 (DV), Chivey_22 (EF), CoolCookie_23 (EF), Crestdrop_22 (EF), Cybele_23 (EF), DannyDe_22 (EF), Dauntless_22 (EF), DaviePasture_21 (DV), DoobyDoo_20 (DV), DumpTruck_20 (DV), Erudite_22 (EF), Erutan_21 (DV), FreddieHg_22 (EF), Fulcrum_22 (DV), GOATification_22 (DV), Genamy16_20 (DV), Gibbin_22 (DV), Gilda_23 (EF), GretelLyn_21 (DV), Hager_24 (EF), Haunter_23 (EF), Hiddenleaf_22 (EF), JDawG_22 (EF), Jalebi_21 (DV), Jamemuya19_18 (DV), JingleBells_22 (EF), Karate_22 (EF), Kate_23 (EF), Krampus_23 (EF), Lambo_21 (DV), LavAbarElk_19 (DV), Lila22_21 (DV), LuckyLeo_20 (DV), Mima20_20 (DV), MoiGyank_23 (DV), MortySmith_21 (EF), NarutoRun_23 (EF), Neptune_23 (EF),

NorManre_22 (DV), NovaSharks_20 (DV), OtterstedtS21_21 (DV), OverHedge_23 (EF), ParvusTarda_21 (DV), Patos_22 (DV), Pharpay_23 (EF), PhunaPhoke_23 (EF), Potty_23 (EF), Poultruss_22 (EF), Rachella_23 (EF), Ranch_21 (DV), RazorC_19 (DV), Rie18_23 (EF), Rumi_20 (DV), Sadboi_21 (DV), Sampudon_21 (DV), SilentWarrior_22 (EF), Snakehole_24 (EF), Stormer_19 (DV), Tedro_23 (EF), Tillicus_21 (DV), TinyMiny_24 (EF), Tongui_23 (EF), Wojtek_20 (DV), Xenia2_21 (DV), Yikes_22 (DV), Zany_20 (DV),

Start 12:

- Found in 34 of 144 (23.6%) of genes in pham
- Manual Annotations of this start: 22 of 124
- Called 70.6% of time when present
- Phage (with cluster) where this start called: Adjutor_22 (D1), Butterscotch_21 (D1), Chill_22 (D1), Delton_21 (D1), Giuseppe_21 (D1), Gumball_20 (D1), Helpful_22 (D1), Labelle_27 (U), LittleFella_18 (DG2), Madruga_26 (U), Mopey_21 (D1), Nova_21 (D1), PBI1_22 (D1), PLOT_22 (D1), Patience_28 (U), Penelope2018_21 (D1), Phalaborwa_21 (D1), Prager_21 (D1), SirHarley_20 (D1), Thoth_21 (D1), Troll4_21 (D1), Visconti_21 (D1), WaldoWhy_22 (D1), Yelo_21 (R),

Start 13:

- Found in 8 of 144 (5.6%) of genes in pham
- Manual Annotations of this start: 1 of 124
- Called 37.5% of time when present
- Phage (with cluster) where this start called: Hawkeye_23 (D2), Kors_25 (EF), LordBart_24 (EF),

Start 26:

- Found in 1 of 144 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 124
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Wollypog_11 (singleton),

Summary by clusters:

There are 13 clusters represented in this pham: AC, EF, AE, H2, H1, singleton, DG2, DG1, U, DV, R, D2, D1,

Info for manual annotations of cluster AC:

- Start number 7 was manually annotated 4 times for cluster AC.

Info for manual annotations of cluster AE:

- Start number 7 was manually annotated 3 times for cluster AE.

Info for manual annotations of cluster D1:

- Start number 12 was manually annotated 18 times for cluster D1.

Info for manual annotations of cluster D2:

- Start number 13 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DG1:

- Start number 8 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 12 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 11 was manually annotated 30 times for cluster DV.

Info for manual annotations of cluster EF:

- Start number 10 was manually annotated 2 times for cluster EF.
- Start number 11 was manually annotated 33 times for cluster EF.

Info for manual annotations of cluster H1:

- Start number 5 was manually annotated 9 times for cluster H1.

Info for manual annotations of cluster H2:

- Start number 7 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster R:

- Start number 7 was manually annotated 9 times for cluster R.

Info for manual annotations of cluster U:

- Start number 12 was manually annotated 3 times for cluster U.

Gene Information:

Gene: Adjutor_22 Start: 13488, Stop: 13907, Start Num: 12

Candidate Starts for Adjutor_22:

(Start: 12 @13488 has 22 MA's), (19, 13503), (30, 13542), (43, 13599), (49, 13620), (60, 13656), (64, 13677), (80, 13761), (88, 13803), (102, 13887),

Gene: Aesir_22 Start: 12181, Stop: 12609, Start Num: 11

Candidate Starts for Aesir_22:

(Start: 11 @12181 has 63 MA's), (39, 12286), (46, 12307), (49, 12319), (57, 12343), (80, 12463), (85, 12484),

Gene: Aikoy_30 Start: 19005, Stop: 19439, Start Num: 7

Candidate Starts for Aikoy_30:

(6, 19002), (Start: 7 @19005 has 18 MA's), (23, 19056), (38, 19128), (53, 19167), (67, 19221), (69, 19227), (80, 19293), (88, 19335), (90, 19341), (95, 19371),

Gene: Ajin_24 Start: 12379, Stop: 12810, Start Num: 11

Candidate Starts for Ajin_24:

(Start: 10 @12376 has 2 MA's), (Start: 11 @12379 has 63 MA's), (Start: 13 @12385 has 1 MA's), (16, 12394), (25, 12427), (39, 12487), (49, 12520), (55, 12535), (56, 12538), (64, 12580), (74, 12637), (81, 12667), (85, 12685), (92, 12718), (97, 12769), (101, 12784),

Gene: Alephilan_18 Start: 13971, Stop: 14399, Start Num: 11

Candidate Starts for Alephilan_18:

(Start: 10 @13968 has 2 MA's), (Start: 11 @13971 has 63 MA's), (20, 13995), (47, 14100), (58, 14145), (60, 14148), (63, 14166), (67, 14181), (80, 14253), (94, 14310), (95, 14328),

Gene: Alyssamiracle_20 Start: 12378, Stop: 12806, Start Num: 11

Candidate Starts for Alyssamiracle_20:

(Start: 10 @12375 has 2 MA's), (Start: 11 @12378 has 63 MA's), (47, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (80, 12660), (94, 12717), (95, 12735),

Gene: Anakin_23 Start: 12391, Stop: 12819, Start Num: 11

Candidate Starts for Anakin_23:

(Start: 11 @12391 has 63 MA's), (46, 12517), (55, 12544), (56, 12547), (57, 12553), (83, 12688), (91, 12724),

Gene: AnnaSerena_23 Start: 12400, Stop: 12828, Start Num: 11

Candidate Starts for AnnaSerena_23:

(Start: 11 @12400 has 63 MA's), (46, 12526), (55, 12553), (56, 12556), (57, 12562), (83, 12697), (91, 12733),

Gene: Annapurna_23 Start: 11600, Stop: 12028, Start Num: 11

Candidate Starts for Annapurna_23:

(Start: 11 @11600 has 63 MA's), (39, 11705), (46, 11726), (49, 11738), (57, 11762), (80, 11882), (85, 11903),

Gene: Apeppi_19 Start: 14093, Stop: 14521, Start Num: 11

Candidate Starts for Apeppi_19:

(Start: 11 @14093 has 63 MA's), (20, 14117), (47, 14222), (58, 14267), (67, 14303), (71, 14321), (80, 14375), (94, 14432), (95, 14450),

Gene: Artiphact_23 Start: 12392, Stop: 12820, Start Num: 11

Candidate Starts for Artiphact_23:

(Start: 11 @12392 has 63 MA's), (46, 12518), (55, 12545), (56, 12548), (57, 12554), (83, 12689), (91, 12725),

Gene: Astralis_19 Start: 12378, Stop: 12806, Start Num: 11

Candidate Starts for Astralis_19:

(Start: 10 @12375 has 2 MA's), (Start: 11 @12378 has 63 MA's), (47, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (80, 12660), (94, 12717), (95, 12735),

Gene: Avian_19 Start: 12378, Stop: 12806, Start Num: 11

Candidate Starts for Avian_19:

(Start: 10 @12375 has 2 MA's), (Start: 11 @12378 has 63 MA's), (47, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (80, 12660), (94, 12717), (95, 12735),

Gene: Barnyard_27 Start: 15178, Stop: 15603, Start Num: 7

Candidate Starts for Barnyard_27:

(Start: 7 @15178 has 18 MA's), (24, 15232), (50, 15331), (65, 15367), (69, 15382), (95, 15526), (102, 15574), (103, 15577), (106, 15595),

Gene: Beckerton_20 Start: 13898, Stop: 14365, Start Num: 5

Candidate Starts for Beckerton_20:

(Start: 5 @13898 has 9 MA's), (Start: 7 @13916 has 18 MA's), (29, 13985), (32, 13991), (57, 14087), (88, 14246), (90, 14252), (95, 14282), (102, 14330),

Gene: Beyoncage_16 Start: 9866, Stop: 10276, Start Num: 8

Candidate Starts for Beyoncage_16:

(Start: 8 @9866 has 8 MA's), (14, 9881), (34, 9944), (37, 9962), (51, 9998), (66, 10058), (82, 10145), (88, 10178), (100, 10253), (102, 10262),

Gene: BirthdayBoy_22 Start: 14824, Stop: 15252, Start Num: 11

Candidate Starts for BirthdayBoy_22:

(Start: 10 @14821 has 2 MA's), (Start: 11 @14824 has 63 MA's), (47, 14953), (58, 14998), (60, 15001), (63, 15019), (67, 15034), (80, 15106), (94, 15163), (95, 15181),

Gene: BiteSize_16 Start: 9866, Stop: 10276, Start Num: 8

Candidate Starts for BiteSize_16:

(Start: 8 @9866 has 8 MA's), (14, 9881), (34, 9944), (37, 9962), (51, 9998), (66, 10058), (82, 10145), (88, 10178), (100, 10253), (102, 10262),

Gene: Bramble_24 Start: 12341, Stop: 12775, Start Num: 10

Candidate Starts for Bramble_24:

(Start: 10 @12341 has 2 MA's), (Start: 11 @12344 has 63 MA's), (Start: 13 @12350 has 1 MA's), (16, 12359), (25, 12392), (39, 12452), (49, 12485), (55, 12500), (56, 12503), (64, 12545), (74, 12602), (81, 12632), (85, 12650), (92, 12683), (97, 12734), (101, 12749),

Gene: Butterscotch_21 Start: 13548, Stop: 13967, Start Num: 12

Candidate Starts for Butterscotch_21:

(Start: 12 @13548 has 22 MA's), (19, 13563), (30, 13602), (43, 13659), (49, 13680), (60, 13716), (64, 13737), (80, 13821), (88, 13863), (102, 13947),

Gene: Candle_21 Start: 13912, Stop: 14340, Start Num: 7

Candidate Starts for Candle_21:

(4, 13891), (Start: 7 @13912 has 18 MA's), (Start: 12 @13927 has 22 MA's), (29, 13987), (42, 14044), (79, 14179), (91, 14242), (96, 14272),

Gene: Cborch11_21 Start: 13361, Stop: 13819, Start Num: 5

Candidate Starts for Cborch11_21:

(Start: 5 @13361 has 9 MA's), (Start: 7 @13379 has 18 MA's), (29, 13448), (32, 13454), (57, 13550), (88, 13709), (90, 13715), (95, 13745), (102, 13793),

Gene: Chill_22 Start: 13554, Stop: 13973, Start Num: 12

Candidate Starts for Chill_22:

(Start: 12 @13554 has 22 MA's), (19, 13569), (30, 13608), (43, 13665), (49, 13686), (60, 13722), (64, 13743), (80, 13827), (88, 13869), (102, 13953),

Gene: Chivey_22 Start: 11593, Stop: 12021, Start Num: 11

Candidate Starts for Chivey_22:

(Start: 11 @11593 has 63 MA's), (39, 11698), (46, 11719), (49, 11731), (56, 11749), (57, 11755), (70, 11812), (80, 11875), (85, 11896),

Gene: CoolCookie_23 Start: 12398, Stop: 12826, Start Num: 11

Candidate Starts for CoolCookie_23:

(Start: 11 @12398 has 63 MA's), (46, 12524), (55, 12551), (56, 12554), (57, 12560), (83, 12695), (91, 12731),

Gene: Crestdrop_22 Start: 11467, Stop: 11895, Start Num: 11

Candidate Starts for Crestdrop_22:

(Start: 11 @11467 has 63 MA's), (39, 11572), (46, 11593), (49, 11605), (57, 11629), (80, 11749), (85, 11770),

Gene: Cuke_14 Start: 9111, Stop: 9524, Start Num: 7

Candidate Starts for Cuke_14:

(Start: 7 @9111 has 18 MA's), (42, 9243), (59, 9282), (61, 9294), (71, 9330), (75, 9360), (93, 9441), (102, 9510),

Gene: Cybele_23 Start: 12368, Stop: 12796, Start Num: 11

Candidate Starts for Cybele_23:

(Start: 11 @12368 has 63 MA's), (46, 12494), (55, 12521), (56, 12524), (57, 12530), (83, 12665), (91, 12701),

Gene: Damien_20 Start: 13360, Stop: 13827, Start Num: 5

Candidate Starts for Damien_20:

(Start: 5 @13360 has 9 MA's), (Start: 7 @13378 has 18 MA's), (29, 13447), (32, 13453), (57, 13549), (88, 13708), (90, 13714), (95, 13744), (102, 13792),

Gene: DannyDe_22 Start: 11585, Stop: 12013, Start Num: 11

Candidate Starts for DannyDe_22:

(Start: 11 @11585 has 63 MA's), (36, 11666), (39, 11690), (46, 11711), (49, 11723), (56, 11741), (57, 11747), (70, 11804), (80, 11867), (85, 11888),

Gene: Dauntless_22 Start: 12110, Stop: 12538, Start Num: 11

Candidate Starts for Dauntless_22:

(Start: 11 @12110 has 63 MA's), (39, 12215), (46, 12236), (49, 12248), (57, 12272), (80, 12392), (85, 12413),

Gene: DaviePasture_21 Start: 14581, Stop: 15009, Start Num: 11

Candidate Starts for DaviePasture_21:

(Start: 10 @14578 has 2 MA's), (Start: 11 @14581 has 63 MA's), (20, 14605), (47, 14710), (58, 14755), (60, 14758), (63, 14776), (67, 14791), (80, 14863), (94, 14920), (95, 14938),

Gene: Delton_21 Start: 13560, Stop: 13979, Start Num: 12

Candidate Starts for Delton_21:

(Start: 12 @13560 has 22 MA's), (19, 13575), (30, 13614), (43, 13671), (49, 13692), (60, 13728), (64, 13749), (80, 13833), (88, 13875), (102, 13959),

Gene: Djokovic_16 Start: 9866, Stop: 10276, Start Num: 8

Candidate Starts for Djokovic_16:

(Start: 8 @9866 has 8 MA's), (14, 9881), (34, 9944), (37, 9962), (51, 9998), (66, 10058), (82, 10145), (88, 10178), (100, 10253), (102, 10262),

Gene: DoobyDoo_20 Start: 13758, Stop: 14186, Start Num: 11

Candidate Starts for DoobyDoo_20:

(Start: 10 @13755 has 2 MA's), (Start: 11 @13758 has 63 MA's), (47, 13887), (58, 13932), (60, 13935), (63, 13953), (67, 13968), (80, 14040), (94, 14097), (95, 14115),

Gene: DrLupo_29 Start: 15577, Stop: 15999, Start Num: 7

Candidate Starts for DrLupo_29:

(Start: 7 @15577 has 18 MA's), (Start: 11 @15589 has 63 MA's), (Start: 12 @15592 has 22 MA's), (21, 15622), (45, 15718), (50, 15730), (65, 15766), (77, 15826), (88, 15889), (102, 15973), (103, 15976), (106, 15994),

Gene: DumpTruck_20 Start: 14012, Stop: 14440, Start Num: 11

Candidate Starts for DumpTruck_20:

(Start: 11 @14012 has 63 MA's), (47, 14141), (58, 14186), (60, 14189), (78, 14279), (80, 14294), (94, 14351),

Gene: Erudite_22 Start: 12110, Stop: 12538, Start Num: 11

Candidate Starts for Erudite_22:

(Start: 11 @12110 has 63 MA's), (39, 12215), (46, 12236), (49, 12248), (57, 12272), (80, 12392), (85, 12413),

Gene: Erutan_21 Start: 14271, Stop: 14699, Start Num: 11

Candidate Starts for Erutan_21:

(Start: 10 @14268 has 2 MA's), (Start: 11 @14271 has 63 MA's), (47, 14400), (58, 14445), (60, 14448), (63, 14466), (67, 14481), (80, 14553), (94, 14610), (95, 14628),

Gene: Fowlmouth_15 Start: 9282, Stop: 9695, Start Num: 7

Candidate Starts for Fowlmouth_15:

(Start: 7 @9282 has 18 MA's), (21, 9327), (41, 9411), (59, 9453), (61, 9465), (65, 9474), (88, 9597), (102, 9681),

Gene: FreddieHg_22 Start: 11609, Stop: 12037, Start Num: 11

Candidate Starts for FreddieHg_22:

(Start: 11 @11609 has 63 MA's), (39, 11714), (46, 11735), (49, 11747), (56, 11765), (57, 11771), (70, 11828), (80, 11891), (85, 11912),

Gene: Fulcrum_22 Start: 14804, Stop: 15232, Start Num: 11

Candidate Starts for Fulcrum_22:

(Start: 10 @14801 has 2 MA's), (Start: 11 @14804 has 63 MA's), (47, 14933), (58, 14978), (60, 14981), (63, 14999), (67, 15014), (80, 15086), (94, 15143), (95, 15161),

Gene: GOATification_22 Start: 14804, Stop: 15232, Start Num: 11

Candidate Starts for GOATification_22:

(Start: 10 @14801 has 2 MA's), (Start: 11 @14804 has 63 MA's), (47, 14933), (58, 14978), (60, 14981), (63, 14999), (67, 15014), (80, 15086), (94, 15143), (95, 15161),

Gene: Genamy16_20 Start: 12378, Stop: 12806, Start Num: 11

Candidate Starts for Genamy16_20:

(Start: 10 @12375 has 2 MA's), (Start: 11 @12378 has 63 MA's), (47, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (80, 12660), (94, 12717), (95, 12735),

Gene: Gibbin_22 Start: 14864, Stop: 15292, Start Num: 11

Candidate Starts for Gibbin_22:

(Start: 10 @14861 has 2 MA's), (Start: 11 @14864 has 63 MA's), (47, 14993), (58, 15038), (60, 15041), (63, 15059), (67, 15074), (80, 15146), (94, 15203), (95, 15221),

Gene: Gilda_23 Start: 12392, Stop: 12820, Start Num: 11

Candidate Starts for Gilda_23:

(Start: 11 @12392 has 63 MA's), (46, 12518), (55, 12545), (56, 12548), (57, 12554), (83, 12689), (91, 12725),

Gene: Giuseppe_21 Start: 13540, Stop: 13959, Start Num: 12

Candidate Starts for Giuseppe_21:

(Start: 12 @13540 has 22 MA's), (19, 13555), (30, 13594), (43, 13651), (49, 13672), (60, 13708), (64, 13729), (80, 13813), (88, 13855), (102, 13939),

Gene: Gretellyn_21 Start: 15138, Stop: 15566, Start Num: 11

Candidate Starts for Gretellyn_21:

(Start: 10 @15135 has 2 MA's), (Start: 11 @15138 has 63 MA's), (47, 15267), (58, 15312), (60, 15315), (63, 15333), (67, 15348), (80, 15420), (94, 15477), (95, 15495),

Gene: Gumball_20 Start: 13498, Stop: 13917, Start Num: 12

Candidate Starts for Gumball_20:

(Start: 12 @13498 has 22 MA's), (19, 13513), (30, 13552), (43, 13609), (49, 13630), (60, 13666), (64, 13687), (80, 13771), (88, 13813), (102, 13897),

Gene: Hager_24 Start: 11963, Stop: 12391, Start Num: 11

Candidate Starts for Hager_24:

(Start: 11 @11963 has 63 MA's), (46, 12089), (55, 12116), (56, 12119), (57, 12125), (83, 12260), (85, 12266), (91, 12296), (97, 12350),

Gene: Haunter_23 Start: 11805, Stop: 12233, Start Num: 11

Candidate Starts for Haunter_23:

(Start: 11 @11805 has 63 MA's), (46, 11931), (55, 11958), (56, 11961), (57, 11967), (83, 12102), (91, 12138), (97, 12192),

Gene: Hawkeye_23 Start: 13446, Stop: 13865, Start Num: 13

Candidate Starts for Hawkeye_23:

(Start: 13 @13446 has 1 MA's), (18, 13458), (31, 13503), (43, 13557), (64, 13635), (66, 13641), (67, 13647), (81, 13722), (85, 13740), (89, 13764), (91, 13770), (93, 13776), (99, 13833), (102, 13845), (103, 13848), (105, 13857),

Gene: Helpful_22 Start: 13548, Stop: 13967, Start Num: 12

Candidate Starts for Helpful_22:

(Start: 12 @13548 has 22 MA's), (19, 13563), (30, 13602), (43, 13659), (49, 13680), (60, 13716), (64, 13737), (80, 13821), (88, 13863), (102, 13947),

Gene: Hiddenleaf_22 Start: 11593, Stop: 12021, Start Num: 11

Candidate Starts for Hiddenleaf_22:

(Start: 11 @11593 has 63 MA's), (39, 11698), (46, 11719), (49, 11731), (56, 11749), (57, 11755), (70, 11812), (80, 11875), (85, 11896),

Gene: Indlulamithi_18 Start: 11372, Stop: 11803, Start Num: 7

Candidate Starts for Indlulamithi_18:

(Start: 7 @11372 has 18 MA's), (29, 11447), (59, 11543), (71, 11591), (82, 11654), (84, 11663),

Gene: JDawG_22 Start: 12175, Stop: 12603, Start Num: 11

Candidate Starts for JDawG_22:

(Start: 11 @12175 has 63 MA's), (39, 12280), (46, 12301), (49, 12313), (57, 12337), (80, 12457), (85, 12478),

Gene: Jalebi_21 Start: 15314, Stop: 15742, Start Num: 11

Candidate Starts for Jalebi_21:

(Start: 10 @15311 has 2 MA's), (Start: 11 @15314 has 63 MA's), (47, 15443), (58, 15488), (60, 15491), (63, 15509), (67, 15524), (80, 15596), (94, 15653), (95, 15671),

Gene: Jamemuya19_18 Start: 12378, Stop: 12806, Start Num: 11

Candidate Starts for Jamemuya19_18:

(Start: 10 @12375 has 2 MA's), (Start: 11 @12378 has 63 MA's), (47, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (80, 12660), (94, 12717), (95, 12735),

Gene: JingleBells_22 Start: 11674, Stop: 12102, Start Num: 11

Candidate Starts for JingleBells_22:

(Start: 11 @11674 has 63 MA's), (39, 11779), (46, 11800), (49, 11812), (56, 11830), (57, 11836), (70, 11893), (80, 11956), (85, 11977),

Gene: Karate_22 Start: 11813, Stop: 12241, Start Num: 11

Candidate Starts for Karate_22:

(Start: 11 @11813 has 63 MA's), (46, 11939), (55, 11966), (56, 11969), (57, 11975), (83, 12110), (91, 12146), (97, 12200),

Gene: Kate_23 Start: 12400, Stop: 12828, Start Num: 11

Candidate Starts for Kate_23:

(Start: 11 @12400 has 63 MA's), (46, 12526), (55, 12553), (56, 12556), (57, 12562), (83, 12697), (91, 12733),

Gene: Konstantine_25 Start: 14562, Stop: 15029, Start Num: 5

Candidate Starts for Konstantine_25:

(Start: 5 @14562 has 9 MA's), (Start: 7 @14580 has 18 MA's), (29, 14649), (32, 14655), (57, 14751), (88, 14910), (90, 14916), (95, 14946), (102, 14994),

Gene: Kors_25 Start: 12431, Stop: 12856, Start Num: 13

Candidate Starts for Kors_25:

(Start: 10 @12422 has 2 MA's), (Start: 11 @12425 has 63 MA's), (Start: 13 @12431 has 1 MA's), (16, 12440), (25, 12473), (39, 12533), (49, 12566), (55, 12581), (56, 12584), (64, 12626), (74, 12683), (81, 12713), (85, 12731), (92, 12764), (97, 12815), (101, 12830),

Gene: Krampus_23 Start: 12398, Stop: 12826, Start Num: 11

Candidate Starts for Krampus_23:

(Start: 11 @12398 has 63 MA's), (46, 12524), (55, 12551), (56, 12554), (57, 12560), (83, 12695), (91, 12731),

Gene: Labelle_27 Start: 16745, Stop: 17146, Start Num: 12

Candidate Starts for Labelle_27:

(Start: 12 @16745 has 22 MA's), (15, 16757), (33, 16814), (44, 16859), (48, 16868), (64, 16910), (67, 16922), (76, 16973), (81, 16997), (85, 17015), (102, 17120), (106, 17141),

Gene: Lambo_21 Start: 14808, Stop: 15236, Start Num: 11

Candidate Starts for Lambo_21:

(Start: 10 @14805 has 2 MA's), (Start: 11 @14808 has 63 MA's), (47, 14937), (58, 14982), (60, 14985), (63, 15003), (67, 15018), (80, 15090), (94, 15147), (95, 15165),

Gene: LavAbarElk_19 Start: 13241, Stop: 13669, Start Num: 11

Candidate Starts for LavAbarElk_19:

(Start: 10 @13238 has 2 MA's), (Start: 11 @13241 has 63 MA's), (20, 13265), (47, 13370), (58, 13415), (60, 13418), (63, 13436), (67, 13451), (80, 13523), (94, 13580), (95, 13598),

Gene: Leopard_30 Start: 19290, Stop: 19724, Start Num: 7

Candidate Starts for Leopard_30:

(6, 19287), (Start: 7 @19290 has 18 MA's), (23, 19341), (38, 19413), (53, 19452), (67, 19506), (69, 19512), (80, 19578), (88, 19620), (90, 19626), (95, 19656),

Gene: Lila22_21 Start: 14762, Stop: 15190, Start Num: 11

Candidate Starts for Lila22_21:

(Start: 10 @14759 has 2 MA's), (Start: 11 @14762 has 63 MA's), (47, 14891), (58, 14936), (60, 14939), (63, 14957), (67, 14972), (80, 15044), (94, 15101), (95, 15119),

Gene: LilyPad_17 Start: 10585, Stop: 10992, Start Num: 8

Candidate Starts for LilyPad_17:

(Start: 8 @10585 has 8 MA's), (37, 10678), (62, 10762), (64, 10768), (72, 10816), (82, 10861), (91, 10903), (102, 10978),

Gene: LittleFella_18 Start: 12477, Stop: 12860, Start Num: 12

Candidate Starts for LittleFella_18:

(1, 12273), (Start: 12 @12477 has 22 MA's), (22, 12495), (27, 12516), (34, 12528), (37, 12546), (73, 12693), (75, 12699), (80, 12723), (86, 12756), (87, 12759), (102, 12846), (104, 12852),

Gene: LordBart_24 Start: 12347, Stop: 12772, Start Num: 13

Candidate Starts for LordBart_24:

(Start: 10 @12338 has 2 MA's), (Start: 11 @12341 has 63 MA's), (Start: 13 @12347 has 1 MA's), (16, 12356), (25, 12389), (39, 12449), (49, 12482), (55, 12497), (56, 12500), (64, 12542), (74, 12599), (81, 12629), (85, 12647), (92, 12680), (97, 12731), (101, 12746),

Gene: LuckyLeo_20 Start: 14093, Stop: 14521, Start Num: 11

Candidate Starts for LuckyLeo_20:

(Start: 11 @14093 has 63 MA's), (20, 14117), (47, 14222), (58, 14267), (67, 14303), (71, 14321), (80, 14375), (94, 14432), (95, 14450),

Gene: Madi_16 Start: 9866, Stop: 10276, Start Num: 8

Candidate Starts for Madi_16:

(Start: 8 @9866 has 8 MA's), (14, 9881), (34, 9944), (37, 9962), (51, 9998), (66, 10058), (82, 10145), (88, 10178), (100, 10253), (102, 10262),

Gene: Madruga_26 Start: 16414, Stop: 16815, Start Num: 12

Candidate Starts for Madruga_26:

(Start: 12 @16414 has 22 MA's), (17, 16429), (33, 16483), (44, 16528), (64, 16579), (67, 16591), (76, 16642), (81, 16666), (85, 16684), (102, 16789), (106, 16810),

Gene: Megatron06_22 Start: 13895, Stop: 14353, Start Num: 5

Candidate Starts for Megatron06_22:

(Start: 5 @13895 has 9 MA's), (Start: 7 @13913 has 18 MA's), (29, 13982), (32, 13988), (57, 14084), (88, 14243), (90, 14249), (95, 14279), (102, 14327),

Gene: Mima20_20 Start: 14491, Stop: 14919, Start Num: 11

Candidate Starts for Mima20_20:

(Start: 10 @14488 has 2 MA's), (Start: 11 @14491 has 63 MA's), (20, 14515), (47, 14620), (58, 14665), (60, 14668), (63, 14686), (67, 14701), (80, 14773), (94, 14830), (95, 14848),

Gene: MoiGyank_23 Start: 15175, Stop: 15603, Start Num: 11

Candidate Starts for MoiGyank_23:

(Start: 10 @15172 has 2 MA's), (Start: 11 @15175 has 63 MA's), (47, 15304), (58, 15349), (60, 15352), (63, 15370), (67, 15385), (80, 15457), (94, 15514), (95, 15532),

Gene: MontyDev_21 Start: 13570, Stop: 13998, Start Num: 7

Candidate Starts for MontyDev_21:

(4, 13549), (Start: 7 @13570 has 18 MA's), (Start: 12 @13585 has 22 MA's), (29, 13645), (42, 13702), (79, 13837), (91, 13900), (96, 13930),

Gene: Mopey_21 Start: 13548, Stop: 13967, Start Num: 12

Candidate Starts for Mopey_21:

(Start: 12 @13548 has 22 MA's), (19, 13563), (30, 13602), (43, 13659), (49, 13680), (60, 13716), (64, 13737), (80, 13821), (88, 13863), (102, 13947),

Gene: MortySmith_21 Start: 11572, Stop: 12000, Start Num: 11

Candidate Starts for MortySmith_21:

(Start: 11 @11572 has 63 MA's), (39, 11677), (46, 11698), (49, 11710), (57, 11734), (80, 11854), (85, 11875),

Gene: MrMiyagi_15 Start: 9282, Stop: 9695, Start Num: 7

Candidate Starts for MrMiyagi_15:

(Start: 7 @9282 has 18 MA's), (21, 9327), (41, 9411), (59, 9453), (61, 9465), (65, 9474), (88, 9597), (102, 9681),

Gene: NarutoRun_23 Start: 12391, Stop: 12819, Start Num: 11

Candidate Starts for NarutoRun_23:

(Start: 11 @12391 has 63 MA's), (46, 12517), (55, 12544), (56, 12547), (57, 12553), (83, 12688), (91, 12724),

Gene: Neptune_23 Start: 12368, Stop: 12796, Start Num: 11

Candidate Starts for Neptune_23:

(Start: 11 @12368 has 63 MA's), (46, 12494), (55, 12521), (56, 12524), (57, 12530), (83, 12665), (91, 12701),

Gene: Nilo_22 Start: 13909, Stop: 14337, Start Num: 7

Candidate Starts for Nilo_22:

(4, 13888), (Start: 7 @13909 has 18 MA's), (Start: 12 @13924 has 22 MA's), (29, 13984), (42, 14041), (79, 14176), (91, 14239), (96, 14269),

Gene: NorManre_22 Start: 14370, Stop: 14798, Start Num: 11

Candidate Starts for NorManre_22:

(Start: 10 @14367 has 2 MA's), (Start: 11 @14370 has 63 MA's), (47, 14499), (58, 14544), (60, 14547), (63, 14565), (67, 14580), (80, 14652), (94, 14709), (95, 14727),

Gene: Nova_21 Start: 13975, Stop: 14394, Start Num: 12

Candidate Starts for Nova_21:

(Start: 12 @13975 has 22 MA's), (19, 13990), (30, 14029), (43, 14086), (49, 14107), (60, 14143), (64, 14164), (80, 14248), (88, 14290), (102, 14374),

Gene: NovaSharks_20 Start: 12378, Stop: 12806, Start Num: 11

Candidate Starts for NovaSharks_20:

(Start: 10 @12375 has 2 MA's), (Start: 11 @12378 has 63 MA's), (47, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (80, 12660), (94, 12717), (95, 12735),

Gene: Oaker_20 Start: 13619, Stop: 14077, Start Num: 5

Candidate Starts for Oaker_20:

(Start: 5 @13619 has 9 MA's), (Start: 7 @13637 has 18 MA's), (29, 13706), (32, 13712), (57, 13808), (88, 13967), (90, 13973), (95, 14003), (102, 14051),

Gene: Onyinye_31 Start: 19171, Stop: 19605, Start Num: 7

Candidate Starts for Onyinye_31:

(6, 19168), (Start: 7 @19171 has 18 MA's), (23, 19222), (38, 19294), (53, 19333), (67, 19387), (69, 19393), (80, 19459), (88, 19501), (90, 19507), (95, 19537),

Gene: OtterstedtS21_21 Start: 14460, Stop: 14888, Start Num: 11

Candidate Starts for OtterstedtS21_21:

(Start: 10 @14457 has 2 MA's), (Start: 11 @14460 has 63 MA's), (47, 14589), (58, 14634), (60, 14637), (63, 14655), (67, 14670), (80, 14742), (94, 14799), (95, 14817),

Gene: OverHedge_23 Start: 12365, Stop: 12793, Start Num: 11

Candidate Starts for OverHedge_23:

(Start: 11 @12365 has 63 MA's), (46, 12491), (55, 12518), (56, 12521), (57, 12527), (83, 12662), (91, 12698),

Gene: PBI1_22 Start: 13479, Stop: 13898, Start Num: 12

Candidate Starts for PBI1_22:

(Start: 12 @13479 has 22 MA's), (19, 13494), (30, 13533), (43, 13590), (49, 13611), (60, 13647), (64, 13668), (80, 13752), (88, 13794), (102, 13878),

Gene: PLOT_22 Start: 13551, Stop: 13970, Start Num: 12

Candidate Starts for PLOT_22:

(Start: 12 @13551 has 22 MA's), (19, 13566), (30, 13605), (43, 13662), (49, 13683), (60, 13719), (64, 13740), (80, 13824), (88, 13866), (102, 13950),

Gene: Papyrus_21 Start: 13571, Stop: 13999, Start Num: 7

Candidate Starts for Papyrus_21:

(4, 13550), (Start: 7 @13571 has 18 MA's), (Start: 12 @13586 has 22 MA's), (29, 13646), (42, 13703), (79, 13838), (91, 13901), (96, 13931),

Gene: ParvusTarda_21 Start: 13942, Stop: 14370, Start Num: 11

Candidate Starts for ParvusTarda_21:

(Start: 10 @13939 has 2 MA's), (Start: 11 @13942 has 63 MA's), (47, 14071), (58, 14116), (60, 14119), (63, 14137), (67, 14152), (80, 14224), (94, 14281), (95, 14299),

Gene: Patience_28 Start: 17304, Stop: 17705, Start Num: 12

Candidate Starts for Patience_28:

(Start: 12 @17304 has 22 MA's), (33, 17373), (44, 17418), (48, 17427), (64, 17469), (67, 17481), (76, 17532), (81, 17556), (85, 17574), (102, 17679), (106, 17700),

Gene: Patos_22 Start: 14370, Stop: 14798, Start Num: 11

Candidate Starts for Patos_22:

(Start: 10 @14367 has 2 MA's), (Start: 11 @14370 has 63 MA's), (47, 14499), (58, 14544), (60, 14547), (63, 14565), (67, 14580), (80, 14652), (94, 14709), (95, 14727),

Gene: Penelope2018_21 Start: 13548, Stop: 13967, Start Num: 12

Candidate Starts for Penelope2018_21:

(Start: 12 @13548 has 22 MA's), (19, 13563), (30, 13602), (43, 13659), (49, 13680), (60, 13716), (64, 13737), (80, 13821), (88, 13863), (102, 13947),

Gene: Phalaborwa_21 Start: 13581, Stop: 14000, Start Num: 12

Candidate Starts for Phalaborwa_21:

(Start: 12 @13581 has 22 MA's), (19, 13596), (30, 13635), (35, 13656), (49, 13713), (60, 13749), (67, 13782), (82, 13863), (88, 13896), (96, 13935), (102, 13980),

Gene: Pharpay_23 Start: 12413, Stop: 12841, Start Num: 11
Candidate Starts for Pharpay_23:
(Start: 11 @12413 has 63 MA's), (46, 12539), (55, 12566), (56, 12569), (57, 12575), (83, 12710), (91, 12746),

Gene: Phreeze_20 Start: 13360, Stop: 13818, Start Num: 5
Candidate Starts for Phreeze_20:
(Start: 5 @13360 has 9 MA's), (Start: 7 @13378 has 18 MA's), (29, 13447), (32, 13453), (57, 13549), (88, 13708), (90, 13714), (95, 13744), (102, 13792),

Gene: PhunaPhoke_23 Start: 12386, Stop: 12814, Start Num: 11
Candidate Starts for PhunaPhoke_23:
(Start: 11 @12386 has 63 MA's), (46, 12512), (55, 12539), (56, 12542), (57, 12548), (83, 12683), (91, 12719),

Gene: Potty_23 Start: 12391, Stop: 12819, Start Num: 11
Candidate Starts for Potty_23:
(Start: 11 @12391 has 63 MA's), (46, 12517), (55, 12544), (56, 12547), (57, 12553), (83, 12688), (91, 12724),

Gene: Poultress_22 Start: 12164, Stop: 12592, Start Num: 11
Candidate Starts for Poultress_22:
(Start: 11 @12164 has 63 MA's), (46, 12290), (55, 12317), (56, 12320), (57, 12326), (83, 12461), (91, 12497),

Gene: Prager_21 Start: 13560, Stop: 13979, Start Num: 12
Candidate Starts for Prager_21:
(Start: 12 @13560 has 22 MA's), (19, 13575), (30, 13614), (43, 13671), (49, 13692), (60, 13728), (64, 13749), (80, 13833), (88, 13875), (102, 13959),

Gene: Predator_24 Start: 14885, Stop: 15343, Start Num: 5
Candidate Starts for Predator_24:
(Start: 5 @14885 has 9 MA's), (Start: 7 @14903 has 18 MA's), (9, 14909), (28, 14969), (32, 14978), (57, 15074), (63, 15104), (79, 15179), (84, 15209), (90, 15239), (91, 15242), (95, 15269), (102, 15317),

Gene: Puissant_19 Start: 13816, Stop: 14274, Start Num: 5
Candidate Starts for Puissant_19:
(Start: 5 @13816 has 9 MA's), (Start: 7 @13834 has 18 MA's), (14, 13858), (20, 13873), (29, 13903), (32, 13909), (57, 14005), (71, 14068), (90, 14170), (95, 14200), (102, 14248),

Gene: Rachella_23 Start: 12394, Stop: 12822, Start Num: 11
Candidate Starts for Rachella_23:
(Start: 11 @12394 has 63 MA's), (46, 12520), (55, 12547), (56, 12550), (57, 12556), (83, 12691), (91, 12727),

Gene: Ranch_21 Start: 13308, Stop: 13736, Start Num: 11
Candidate Starts for Ranch_21:
(Start: 10 @13305 has 2 MA's), (Start: 11 @13308 has 63 MA's), (47, 13437), (58, 13482), (60, 13485), (63, 13503), (67, 13518), (80, 13590), (94, 13647), (95, 13665),

Gene: RazorC_19 Start: 12378, Stop: 12806, Start Num: 11
Candidate Starts for RazorC_19:

(Start: 10 @12375 has 2 MA's), (Start: 11 @12378 has 63 MA's), (47, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (80, 12660), (94, 12717), (95, 12735),

Gene: Rie18_23 Start: 11745, Stop: 12173, Start Num: 11

Candidate Starts for Rie18_23:

(Start: 11 @11745 has 63 MA's), (46, 11871), (55, 11898), (56, 11901), (57, 11907), (83, 12042), (85, 12048), (91, 12078), (97, 12132),

Gene: RikSengupta_24 Start: 12459, Stop: 12893, Start Num: 10

Candidate Starts for RikSengupta_24:

(Start: 10 @12459 has 2 MA's), (Start: 11 @12462 has 63 MA's), (Start: 13 @12468 has 1 MA's), (16, 12477), (25, 12510), (39, 12570), (49, 12603), (55, 12618), (56, 12621), (64, 12663), (74, 12720), (81, 12750), (85, 12768), (92, 12801), (97, 12852), (101, 12867),

Gene: Riparian_21 Start: 13370, Stop: 13798, Start Num: 7

Candidate Starts for Riparian_21:

(4, 13349), (Start: 7 @13370 has 18 MA's), (Start: 12 @13385 has 22 MA's), (29, 13445), (42, 13502), (79, 13637), (91, 13700), (96, 13730),

Gene: Rope_21 Start: 13562, Stop: 13990, Start Num: 7

Candidate Starts for Rope_21:

(4, 13541), (Start: 7 @13562 has 18 MA's), (Start: 12 @13577 has 22 MA's), (29, 13637), (42, 13694), (79, 13829), (91, 13892), (96, 13922),

Gene: Rumi_20 Start: 12378, Stop: 12806, Start Num: 11

Candidate Starts for Rumi_20:

(Start: 10 @12375 has 2 MA's), (Start: 11 @12378 has 63 MA's), (47, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (80, 12660), (94, 12717), (95, 12735),

Gene: Sadboi_21 Start: 15138, Stop: 15566, Start Num: 11

Candidate Starts for Sadboi_21:

(Start: 10 @15135 has 2 MA's), (Start: 11 @15138 has 63 MA's), (47, 15267), (58, 15312), (60, 15315), (63, 15333), (67, 15348), (80, 15420), (94, 15477), (95, 15495),

Gene: Sampudon_21 Start: 15314, Stop: 15742, Start Num: 11

Candidate Starts for Sampudon_21:

(Start: 10 @15311 has 2 MA's), (Start: 11 @15314 has 63 MA's), (47, 15443), (58, 15488), (60, 15491), (63, 15509), (67, 15524), (80, 15596), (94, 15653), (95, 15671),

Gene: Send513_21 Start: 13912, Stop: 14340, Start Num: 7

Candidate Starts for Send513_21:

(4, 13891), (Start: 7 @13912 has 18 MA's), (Start: 12 @13927 has 22 MA's), (29, 13987), (42, 14044), (79, 14179), (91, 14242), (96, 14272),

Gene: Sienna_16 Start: 9866, Stop: 10276, Start Num: 8

Candidate Starts for Sienna_16:

(Start: 8 @9866 has 8 MA's), (14, 9881), (34, 9944), (37, 9962), (51, 9998), (66, 10058), (82, 10145), (88, 10178), (100, 10253), (102, 10262),

Gene: SilentWarrior_22 Start: 11601, Stop: 12029, Start Num: 11

Candidate Starts for SilentWarrior_22:

(Start: 11 @11601 has 63 MA's), (36, 11682), (39, 11706), (46, 11727), (49, 11739), (56, 11757), (57, 11763), (70, 11820), (80, 11883), (85, 11904),

Gene: SirHarley_20 Start: 13480, Stop: 13899, Start Num: 12

Candidate Starts for SirHarley_20:

(Start: 12 @13480 has 22 MA's), (19, 13495), (30, 13534), (43, 13591), (49, 13612), (60, 13648), (64, 13669), (80, 13753), (88, 13795), (102, 13879),

Gene: Snakehole_24 Start: 11690, Stop: 12118, Start Num: 11

Candidate Starts for Snakehole_24:

(Start: 11 @11690 has 63 MA's), (39, 11795), (46, 11816), (49, 11828), (56, 11846), (57, 11852), (70, 11909), (80, 11972), (85, 11993),

Gene: Sparcetus_24 Start: 12338, Stop: 12772, Start Num: 10

Candidate Starts for Sparcetus_24:

(Start: 10 @12338 has 2 MA's), (Start: 11 @12341 has 63 MA's), (Start: 13 @12347 has 1 MA's), (16, 12356), (25, 12389), (39, 12449), (49, 12482), (55, 12497), (56, 12500), (64, 12542), (74, 12599), (81, 12629), (85, 12647), (92, 12680), (97, 12731), (101, 12746),

Gene: Stormer_19 Start: 12378, Stop: 12806, Start Num: 11

Candidate Starts for Stormer_19:

(Start: 10 @12375 has 2 MA's), (Start: 11 @12378 has 63 MA's), (47, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (80, 12660), (94, 12717), (95, 12735),

Gene: Suzy_17 Start: 11094, Stop: 11504, Start Num: 8

Candidate Starts for Suzy_17:

(Start: 8 @11094 has 8 MA's), (14, 11109), (34, 11172), (37, 11190), (46, 11214), (66, 11286), (72, 11328), (75, 11340), (88, 11406), (100, 11481), (102, 11490),

Gene: Tedro_23 Start: 11864, Stop: 12292, Start Num: 11

Candidate Starts for Tedro_23:

(Start: 11 @11864 has 63 MA's), (46, 11990), (55, 12017), (56, 12020), (57, 12026), (83, 12161), (91, 12197),

Gene: Terapin_16 Start: 9866, Stop: 10276, Start Num: 8

Candidate Starts for Terapin_16:

(Start: 8 @9866 has 8 MA's), (14, 9881), (34, 9944), (37, 9962), (51, 9998), (66, 10058), (82, 10145), (88, 10178), (100, 10253), (102, 10262),

Gene: Thoth_21 Start: 13545, Stop: 13964, Start Num: 12

Candidate Starts for Thoth_21:

(Start: 12 @13545 has 22 MA's), (19, 13560), (30, 13599), (43, 13656), (49, 13677), (60, 13713), (64, 13734), (80, 13818), (88, 13860), (102, 13944),

Gene: Thumb_20 Start: 13361, Stop: 13819, Start Num: 5

Candidate Starts for Thumb_20:

(Start: 5 @13361 has 9 MA's), (Start: 7 @13379 has 18 MA's), (29, 13448), (32, 13454), (57, 13550), (88, 13709), (90, 13715), (95, 13745), (102, 13793),

Gene: Tillicus_21 Start: 13687, Stop: 14115, Start Num: 11

Candidate Starts for Tillicus_21:

(Start: 11 @13687 has 63 MA's), (20, 13711), (47, 13816), (58, 13861), (67, 13897), (71, 13915), (80, 13969), (94, 14026), (95, 14044),

Gene: TinyMiny_24 Start: 12360, Stop: 12791, Start Num: 11

Candidate Starts for TinyMiny_24:

(Start: 10 @12357 has 2 MA's), (Start: 11 @12360 has 63 MA's), (Start: 13 @12366 has 1 MA's), (16, 12375), (25, 12408), (39, 12468), (49, 12501), (55, 12516), (56, 12519), (64, 12561), (74, 12618), (81, 12648), (85, 12666), (92, 12699), (97, 12750), (101, 12765),

Gene: Tongui_23 Start: 11737, Stop: 12165, Start Num: 11

Candidate Starts for Tongui_23:

(Start: 11 @11737 has 63 MA's), (46, 11863), (55, 11890), (56, 11893), (57, 11899), (83, 12034), (91, 12070), (97, 12124),

Gene: Troll4_21 Start: 13549, Stop: 13968, Start Num: 12

Candidate Starts for Troll4_21:

(Start: 12 @13549 has 22 MA's), (19, 13564), (30, 13603), (43, 13660), (49, 13681), (60, 13717), (64, 13738), (80, 13822), (88, 13864), (102, 13948),

Gene: Visconti_21 Start: 13558, Stop: 13977, Start Num: 12

Candidate Starts for Visconti_21:

(Start: 12 @13558 has 22 MA's), (19, 13573), (30, 13612), (43, 13669), (49, 13690), (60, 13726), (64, 13747), (80, 13831), (88, 13873), (102, 13957),

Gene: WaldoWhy_22 Start: 13554, Stop: 13973, Start Num: 12

Candidate Starts for WaldoWhy_22:

(Start: 12 @13554 has 22 MA's), (19, 13569), (30, 13608), (43, 13665), (49, 13686), (60, 13722), (64, 13743), (80, 13827), (88, 13869), (102, 13953),

Gene: Weiss13_21 Start: 13602, Stop: 14030, Start Num: 7

Candidate Starts for Weiss13_21:

(4, 13581), (Start: 7 @13602 has 18 MA's), (Start: 12 @13617 has 22 MA's), (42, 13734), (79, 13869), (91, 13932), (96, 13962),

Gene: Wojtek_20 Start: 14015, Stop: 14443, Start Num: 11

Candidate Starts for Wojtek_20:

(Start: 10 @14012 has 2 MA's), (Start: 11 @14015 has 63 MA's), (47, 14144), (58, 14189), (60, 14192), (63, 14210), (67, 14225), (80, 14297), (94, 14354), (95, 14372),

Gene: Wollypog_11 Start: 8956, Stop: 9348, Start Num: 26

Candidate Starts for Wollypog_11:

(2, 8746), (3, 8866), (Start: 26 @8956 has 1 MA's), (40, 9025), (52, 9061), (54, 9064), (68, 9133), (70, 9139), (82, 9211), (98, 9313),

Gene: Xenia2_21 Start: 14054, Stop: 14482, Start Num: 11

Candidate Starts for Xenia2_21:

(Start: 11 @14054 has 63 MA's), (47, 14183), (58, 14228), (60, 14231), (78, 14321), (80, 14336), (94, 14393),

Gene: Yelo_21 Start: 13927, Stop: 14340, Start Num: 12

Candidate Starts for Yelo_21:

(4, 13891), (Start: 7 @13912 has 18 MA's), (Start: 12 @13927 has 22 MA's), (29, 13987), (42, 14044), (79, 14179), (91, 14242), (96, 14272),

Gene: Yikes_22 Start: 15399, Stop: 15827, Start Num: 11

Candidate Starts for Yikes_22:

(Start: 10 @15396 has 2 MA's), (Start: 11 @15399 has 63 MA's), (47, 15528), (58, 15573), (60, 15576), (63, 15594), (67, 15609), (80, 15681), (94, 15738), (95, 15756),

Gene: Zany_20 Start: 14528, Stop: 14956, Start Num: 11

Candidate Starts for Zany_20:

(Start: 10 @14525 has 2 MA's), (Start: 11 @14528 has 63 MA's), (20, 14552), (47, 14657), (58, 14702), (60, 14705), (63, 14723), (67, 14738), (80, 14810), (94, 14867), (95, 14885),

Gene: Zenon_22 Start: 13914, Stop: 14342, Start Num: 7

Candidate Starts for Zenon_22:

(4, 13893), (Start: 7 @13914 has 18 MA's), (Start: 12 @13929 has 22 MA's), (29, 13989), (42, 14046), (79, 14181), (91, 14244), (96, 14274),