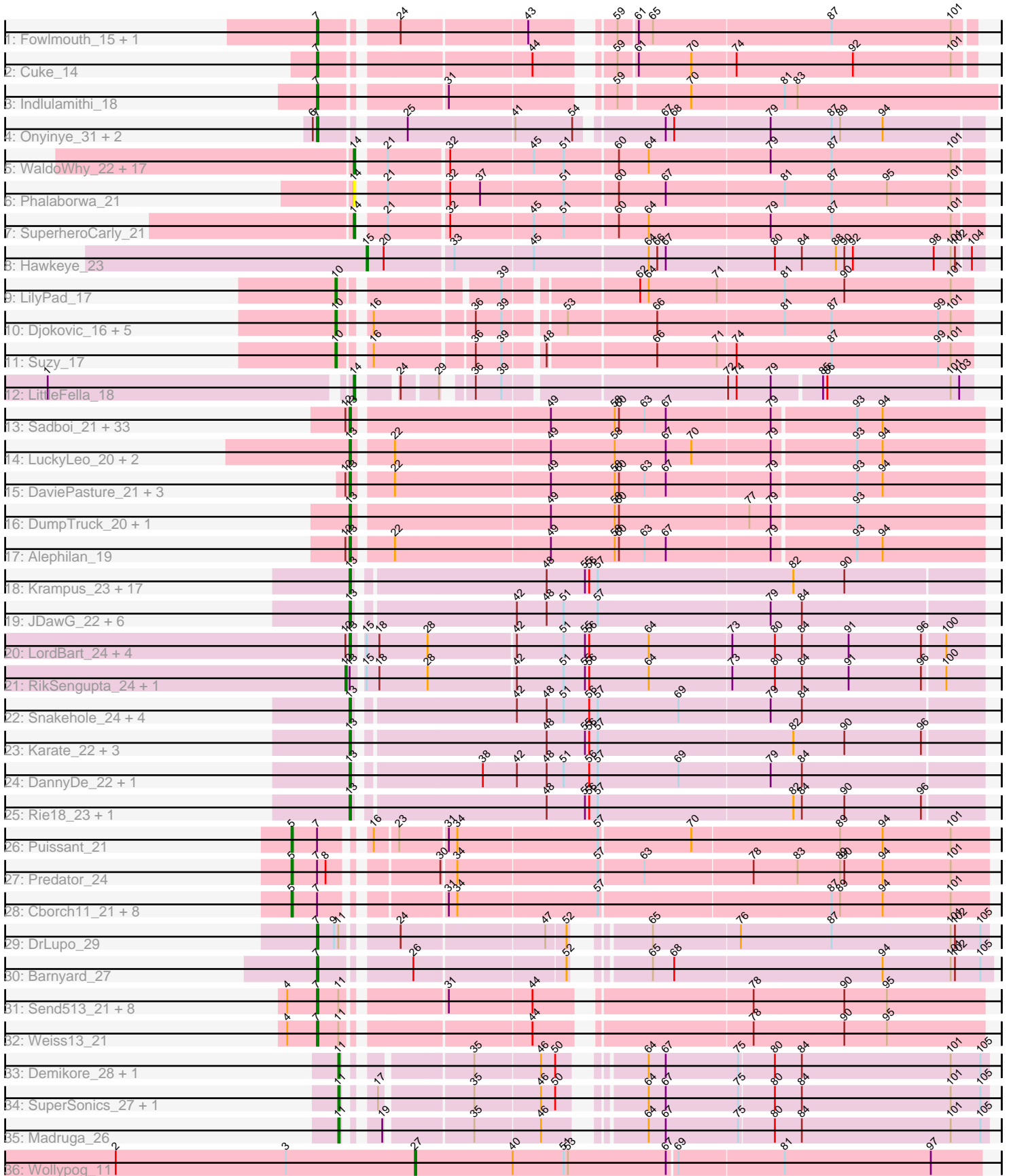


Pham 303154



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 303154 Report

This analysis was run 06/08/26 on database version 649.

Pham number 303154 has 155 members, 11 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, PLOT_22, Troll4_21, Adjutor_22, Visconti_21, Gumball_20, Helpful_22, Delton_21, PBI1_22
- Track 6 : Phalaborwa_21
- Track 7 : SuperheroCarly_21
- Track 8 : Hawkeye_23
- Track 9 : LilyPad_17
- Track 10 : Djokovic_16, Madi_16, Terapin_16, BiteSize_16, Sienna_16, Beyoncage_16
- Track 11 : Suzy_17
- Track 12 : LittleFella_18
- Track 13 : Sadboi_21, Sampudon_21, Charminar_19, Yikes_22, Gibbin_22, Stormer_19, ParvusTarda_21, Lambo_21, OtterstedtS21_21, Fulcrum_22, Alyssamiracle_20, Lila22_21, Genamy16_20, Riduram_19, MoiGyank_23, Avian_19, NovaSharks_20, GretelLyn_21, Rumi_20, BirthdayBoy_22, Patos_22, Astralis_19, GOATification_22, Erutan_21, Ranch_21, Rukungu_21, Jamemuya19_19, Wojtek_20, Pywacket_20, RazorC_19, NorManre_22, Jalebi_21, Rota_20, DoobyDoo_20
- Track 14 : LuckyLeo_20, Apeppi_19, Tillicus_21
- Track 15 : DaviePasture_21, Mima20_20, LavAbarElk_19, Zany_20
- Track 16 : DumpTruck_20, Xenia2_21
- Track 17 : Alephilan_19
- Track 18 : Krampus_23, Neptune_23, Pharpay_23, Gilda_23, Anakin_23, Rachella_23, Poultruss_22, Kate_23, AnnaSerena_23, CoolCookie_23, OhDear_23, Potty_23, PhunaPhoke_23, Artiphact_23, Tedro_23, Cybele_23, OverHedge_23, NarutoRun_23
- Track 19 : JDawG_22, Dauntless_22, Crestdrop_22, Aesir_22, Annapurna_22, Erudite_22, MortySmith_21
- Track 20 : LordBart_24, Ajin_24, TinyMiny_24, Kors_24, Bramble_24
- Track 21 : RikSengupta_24, Sparcetus_24
- Track 22 : Snakehole_24, FreddieHg_22, JingleBells_22, Hiddenleaf_22, Chivey_22
- Track 23 : Karate_22, Haunter_23, FountainFog_22, Tongui_22

- Track 24 : DannyDe_22, SilentWarrior_22
- Track 25 : Rie18_23, Hager_24
- Track 26 : Puissant_21
- Track 27 : Predator_24
- Track 28 : Cborch11_21, BobtimousPrime_22, Phreeze_20, Damien_20, Beckerton_20, Oaker_20, Megatron06_22, Konstantine_25, Thumb_20
- 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, Yelo_21
- Track 32 : Weiss13_21
- Track 33 : Demikore_28, Patience_28
- Track 34 : SuperSonics_27, Labelle_27
- Track 35 : Madruga_26
- Track 36 : 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 13, it was called in 79 of the 144 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aesir_22, Ajin_24, Alephilan_19, Alyssamiracle_20, Anakin_23, AnnaSerena_23, Annapurna_22, Apeppi_19, Artiphact_23, Astralis_19, Avian_19, BirthdayBoy_22, Bramble_24, Charminar_19, Chivey_22, CoolCookie_23, Crestdrop_22, Cybele_23, DannyDe_22, Dauntless_22, DaviePasture_21, DoobyDoo_20, DumpTruck_20, Erudite_22, Erutan_21, FountainFog_22, 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_19, JingleBells_22, Karate_22, Kate_23, Kors_24, Krampus_23, Lambo_21, LavAbarElk_19, Lila22_21, LordBart_24, LuckyLeo_20, Mima20_20, MoiGyank_23, MortySmith_21, NarutoRun_23, Neptune_23, NorManre_22, NovaSharks_20, OhDear_23, OtterstedtS21_21, OverHedge_23, ParvusTarda_21, Patos_22, Pharpay_23, PhunaPhoke_23, Potty_23, Poultruss_22, Pywacket_20, Rachella_23, Ranch_21, RazorC_19, Riduram_19, Rie18_23, Rota_20, Rukungu_21, Rumi_20, Sadboi_21, Sampudon_21, SilentWarrior_22, Snakehole_24, Stormer_19, Tedro_23, Tillicus_21, TinyMiny_24, Tongui_22, Wojtek_20, Xenia2_21, Yikes_22, Zany_20,

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

- 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, BobtimousPrime_22, Butterscotch_21, Candle_21, Cborch11_21, Chill_22, Cuke_14, Damien_20, Delton_21, Demikore_28, Djokovic_16, DrLupo_29, Fowlmouth_15, Giuseppe_21, Gumball_20, Hawkeye_23, Helpful_22, Indlulamithi_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, PBI1_22, PLOT_22, Papyrus_21, Patience_28, Penelope2018_21, Phalaborwa_21, Phreeze_20, Prager_21, Predator_24,

Puissant_21, Riparian_21, Rope_21, Send513_21, Sienna_16, SirHarley_20, SuperSonics_27, SuperheroCarly_21, 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 11 of 155 (7.1%) of genes in pham
- Manual Annotations of this start: 11 of 144
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beckerton_20 (H1), BobtimousPrime_22 (H1), Cborch11_21 (H1), Damien_20 (H1), Konstantine_25 (H1), Megatron06_22 (H1), Oaker_20 (H1), Phreeze_20 (H1), Predator_24 (H1), Puissant_21 (H1), Thumb_20 (H1),

Start 7:

- Found in 30 of 155 (19.4%) of genes in pham
- Manual Annotations of this start: 19 of 144
- Called 63.3% 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), Yelo_21 (R), Zenon_22 (R),

Start 10:

- Found in 8 of 155 (5.2%) of genes in pham
- Manual Annotations of this start: 8 of 144
- 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 11:

- Found in 16 of 155 (10.3%) of genes in pham
- Manual Annotations of this start: 3 of 144
- Called 31.2% of time when present
- Phage (with cluster) where this start called: Demikore_28 (U), Labelle_27 (U), Madrugua_26 (U), Patience_28 (U), SuperSonics_27 (U),

Start 12:

- Found in 46 of 155 (29.7%) of genes in pham
- Manual Annotations of this start: 2 of 144
- Called 4.3% of time when present
- Phage (with cluster) where this start called: RikSengupta_24 (EF), Sparcetus_24 (EF),

Start 13:

- Found in 89 of 155 (57.4%) of genes in pham
- Manual Annotations of this start: 79 of 144
- Called 97.8% of time when present

- Phage (with cluster) where this start called: Aesir_22 (EF), Ajin_24 (EF), Alephilan_19 (DV), Alyssamiracle_20 (DV), Anakin_23 (EF), AnnaSerena_23 (EF), Annapurna_22 (EF), Apeppi_19 (DV), Artiphact_23 (EF), Astralis_19 (DV), Avian_19 (DV), BirthdayBoy_22 (DV), Bramble_24 (EF), Charminar_19 (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), FountainFog_22 (EF), 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_19 (DV), JingleBells_22 (EF), Karate_22 (EF), Kate_23 (EF), Kors_24 (EF), Krampus_23 (EF), Lambo_21 (DV), LavAbarElk_19 (DV), Lila22_21 (DV), LordBart_24 (EF), LuckyLeo_20 (DV), Mima20_20 (DV), MoiGyank_23 (DV), MortySmith_21 (EF), NarutoRun_23 (EF), Neptune_23 (EF), NorManre_22 (DV), NovaSharks_20 (DV), OhDear_23 (EF), OtterstedtS21_21 (DV), OverHedge_23 (EF), ParvusTarda_21 (DV), Patos_22 (DV), Pharpay_23 (EF), PhunaPhoke_23 (EF), Potty_23 (EF), Poultruss_22 (EF), Pywacket_20 (DV), Rachella_23 (EF), Ranch_21 (DV), RazorC_19 (DV), Riduram_19 (DV), Rie18_23 (EF), Rota_20 (DV), Rukungu_21 (DV), 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_22 (EF), Wojtek_20 (DV), Xenia2_21 (DV), Yikes_22 (DV), Zany_20 (DV),

Start 14:

- Found in 21 of 155 (13.5%) of genes in pham
- Manual Annotations of this start: 20 of 144
- Called 100.0% 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), LittleFella_18 (DG2), Mopey_21 (D1), Nova_21 (D1), PBI1_22 (D1), PLOT_22 (D1), Penelope2018_21 (D1), Phalaborwa_21 (D1), Prager_21 (D1), SirHarley_20 (D1), SuperheroCarly_21 (D1), Thoth_21 (D1), Troll4_21 (D1), Visconti_21 (D1), WaldoWhy_22 (D1),

Start 15:

- Found in 8 of 155 (5.2%) of genes in pham
- Manual Annotations of this start: 1 of 144
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Hawkeye_23 (D2),

Start 27:

- Found in 1 of 155 (0.6%) of genes in pham
- Manual Annotations of this start: 1 of 144
- 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 14 was manually annotated 19 times for cluster D1.

Info for manual annotations of cluster D2:

- Start number 15 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DG1:

- Start number 10 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 14 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 13 was manually annotated 39 times for cluster DV.

Info for manual annotations of cluster EF:

- Start number 12 was manually annotated 2 times for cluster EF.
- Start number 13 was manually annotated 40 times for cluster EF.

Info for manual annotations of cluster H1:

- Start number 5 was manually annotated 11 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 10 times for cluster R.

Info for manual annotations of cluster U:

- Start number 11 was manually annotated 3 times for cluster U.

Gene Information:

Gene: Adjutor_22 Start: 13488, Stop: 13907, Start Num: 14

Candidate Starts for Adjutor_22:

(Start: 14 @13488 has 20 MA's), (21, 13503), (32, 13542), (45, 13599), (51, 13620), (60, 13656), (64, 13677), (79, 13761), (87, 13803), (101, 13887),

Gene: Aesir_22 Start: 12181, Stop: 12609, Start Num: 13

Candidate Starts for Aesir_22:

(Start: 13 @12181 has 79 MA's), (42, 12286), (48, 12307), (51, 12319), (57, 12343), (79, 12463), (84, 12484),

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

Candidate Starts for Aikoy_30:

(6, 19002), (Start: 7 @19005 has 19 MA's), (25, 19056), (41, 19128), (54, 19167), (67, 19221), (68, 19227), (79, 19293), (87, 19335), (89, 19341), (94, 19371),

Gene: Ajin_24 Start: 12379, Stop: 12810, Start Num: 13

Candidate Starts for Ajin_24:

(Start: 12 @12376 has 2 MA's), (Start: 13 @12379 has 79 MA's), (Start: 15 @12385 has 1 MA's), (18, 12394), (28, 12427), (42, 12487), (51, 12520), (55, 12535), (56, 12538), (64, 12580), (73, 12637), (80, 12667), (84, 12685), (91, 12718), (96, 12769), (100, 12784),

Gene: Alephilan_19 Start: 13971, Stop: 14399, Start Num: 13

Candidate Starts for Alephilan_19:

(Start: 12 @13968 has 2 MA's), (Start: 13 @13971 has 79 MA's), (22, 13995), (49, 14100), (58, 14145), (60, 14148), (63, 14166), (67, 14181), (79, 14253), (93, 14310), (94, 14328),

Gene: Alyssamiracle_20 Start: 12378, Stop: 12806, Start Num: 13

Candidate Starts for Alyssamiracle_20:

(Start: 12 @12375 has 2 MA's), (Start: 13 @12378 has 79 MA's), (49, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (79, 12660), (93, 12717), (94, 12735),

Gene: Anakin_23 Start: 12391, Stop: 12819, Start Num: 13

Candidate Starts for Anakin_23:

(Start: 13 @12391 has 79 MA's), (48, 12517), (55, 12544), (56, 12547), (57, 12553), (82, 12688), (90, 12724),

Gene: AnnaSerena_23 Start: 12400, Stop: 12828, Start Num: 13

Candidate Starts for AnnaSerena_23:

(Start: 13 @12400 has 79 MA's), (48, 12526), (55, 12553), (56, 12556), (57, 12562), (82, 12697), (90, 12733),

Gene: Annapurna_22 Start: 11600, Stop: 12028, Start Num: 13

Candidate Starts for Annapurna_22:

(Start: 13 @11600 has 79 MA's), (42, 11705), (48, 11726), (51, 11738), (57, 11762), (79, 11882), (84, 11903),

Gene: Apeppi_19 Start: 14093, Stop: 14521, Start Num: 13

Candidate Starts for Apeppi_19:

(Start: 13 @14093 has 79 MA's), (22, 14117), (49, 14222), (58, 14267), (67, 14303), (70, 14321), (79, 14375), (93, 14432), (94, 14450),

Gene: Artiphact_23 Start: 12392, Stop: 12820, Start Num: 13

Candidate Starts for Artiphact_23:

(Start: 13 @12392 has 79 MA's), (48, 12518), (55, 12545), (56, 12548), (57, 12554), (82, 12689), (90, 12725),

Gene: Astralis_19 Start: 12378, Stop: 12806, Start Num: 13

Candidate Starts for Astralis_19:

(Start: 12 @12375 has 2 MA's), (Start: 13 @12378 has 79 MA's), (49, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (79, 12660), (93, 12717), (94, 12735),

Gene: Avian_19 Start: 12378, Stop: 12806, Start Num: 13

Candidate Starts for Avian_19:

(Start: 12 @12375 has 2 MA's), (Start: 13 @12378 has 79 MA's), (49, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (79, 12660), (93, 12717), (94, 12735),

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

Candidate Starts for Barnyard_27:

(Start: 7 @15178 has 19 MA's), (26, 15232), (52, 15331), (65, 15367), (68, 15382), (94, 15526), (101, 15574), (102, 15577), (105, 15595),

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

Candidate Starts for Beckerton_20:

(Start: 5 @13898 has 11 MA's), (Start: 7 @13916 has 19 MA's), (31, 13985), (34, 13991), (57, 14087), (87, 14246), (89, 14252), (94, 14282), (101, 14330),

Gene: Beyoncage_16 Start: 9866, Stop: 10276, Start Num: 10

Candidate Starts for Beyoncage_16:

(Start: 10 @9866 has 8 MA's), (16, 9881), (36, 9944), (39, 9962), (53, 9998), (66, 10058), (81, 10145), (87, 10178), (99, 10253), (101, 10262),

Gene: BirthdayBoy_22 Start: 14824, Stop: 15252, Start Num: 13

Candidate Starts for BirthdayBoy_22:

(Start: 12 @14821 has 2 MA's), (Start: 13 @14824 has 79 MA's), (49, 14953), (58, 14998), (60, 15001), (63, 15019), (67, 15034), (79, 15106), (93, 15163), (94, 15181),

Gene: BiteSize_16 Start: 9866, Stop: 10276, Start Num: 10

Candidate Starts for BiteSize_16:

(Start: 10 @9866 has 8 MA's), (16, 9881), (36, 9944), (39, 9962), (53, 9998), (66, 10058), (81, 10145), (87, 10178), (99, 10253), (101, 10262),

Gene: BobtimousPrime_22 Start: 13818, Stop: 14276, Start Num: 5

Candidate Starts for BobtimousPrime_22:

(Start: 5 @13818 has 11 MA's), (Start: 7 @13836 has 19 MA's), (31, 13905), (34, 13911), (57, 14007), (87, 14166), (89, 14172), (94, 14202), (101, 14250),

Gene: Bramble_24 Start: 12344, Stop: 12775, Start Num: 13

Candidate Starts for Bramble_24:

(Start: 12 @12341 has 2 MA's), (Start: 13 @12344 has 79 MA's), (Start: 15 @12350 has 1 MA's), (18, 12359), (28, 12392), (42, 12452), (51, 12485), (55, 12500), (56, 12503), (64, 12545), (73, 12602), (80, 12632), (84, 12650), (91, 12683), (96, 12734), (100, 12749),

Gene: Butterscotch_21 Start: 13548, Stop: 13967, Start Num: 14

Candidate Starts for Butterscotch_21:

(Start: 14 @13548 has 20 MA's), (21, 13563), (32, 13602), (45, 13659), (51, 13680), (60, 13716), (64, 13737), (79, 13821), (87, 13863), (101, 13947),

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

Candidate Starts for Candle_21:

(4, 13891), (Start: 7 @13912 has 19 MA's), (Start: 11 @13927 has 3 MA's), (31, 13987), (44, 14044), (78, 14179), (90, 14242), (95, 14272),

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

Candidate Starts for Cborch11_21:

(Start: 5 @13361 has 11 MA's), (Start: 7 @13379 has 19 MA's), (31, 13448), (34, 13454), (57, 13550), (87, 13709), (89, 13715), (94, 13745), (101, 13793),

Gene: Charminar_19 Start: 12378, Stop: 12806, Start Num: 13

Candidate Starts for Charminar_19:

(Start: 12 @12375 has 2 MA's), (Start: 13 @12378 has 79 MA's), (49, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (79, 12660), (93, 12717), (94, 12735),

Gene: Chill_22 Start: 13554, Stop: 13973, Start Num: 14

Candidate Starts for Chill_22:

(Start: 14 @13554 has 20 MA's), (21, 13569), (32, 13608), (45, 13665), (51, 13686), (60, 13722), (64, 13743), (79, 13827), (87, 13869), (101, 13953),

Gene: Chivey_22 Start: 11593, Stop: 12021, Start Num: 13

Candidate Starts for Chivey_22:

(Start: 13 @11593 has 79 MA's), (42, 11698), (48, 11719), (51, 11731), (56, 11749), (57, 11755), (69, 11812), (79, 11875), (84, 11896),

Gene: CoolCookie_23 Start: 12398, Stop: 12826, Start Num: 13

Candidate Starts for CoolCookie_23:

(Start: 13 @12398 has 79 MA's), (48, 12524), (55, 12551), (56, 12554), (57, 12560), (82, 12695), (90, 12731),

Gene: Crestdrop_22 Start: 11467, Stop: 11895, Start Num: 13

Candidate Starts for Crestdrop_22:

(Start: 13 @11467 has 79 MA's), (42, 11572), (48, 11593), (51, 11605), (57, 11629), (79, 11749), (84, 11770),

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

Candidate Starts for Cuke_14:

(Start: 7 @9111 has 19 MA's), (44, 9243), (59, 9282), (61, 9294), (70, 9330), (74, 9360), (92, 9441), (101, 9510),

Gene: Cybele_23 Start: 12368, Stop: 12796, Start Num: 13

Candidate Starts for Cybele_23:

(Start: 13 @12368 has 79 MA's), (48, 12494), (55, 12521), (56, 12524), (57, 12530), (82, 12665), (90, 12701),

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

Candidate Starts for Damien_20:

(Start: 5 @13360 has 11 MA's), (Start: 7 @13378 has 19 MA's), (31, 13447), (34, 13453), (57, 13549), (87, 13708), (89, 13714), (94, 13744), (101, 13792),

Gene: DannyDe_22 Start: 11585, Stop: 12013, Start Num: 13

Candidate Starts for DannyDe_22:

(Start: 13 @11585 has 79 MA's), (38, 11666), (42, 11690), (48, 11711), (51, 11723), (56, 11741), (57, 11747), (69, 11804), (79, 11867), (84, 11888),

Gene: Dauntless_22 Start: 12110, Stop: 12538, Start Num: 13

Candidate Starts for Dauntless_22:

(Start: 13 @12110 has 79 MA's), (42, 12215), (48, 12236), (51, 12248), (57, 12272), (79, 12392), (84, 12413),

Gene: DaviePasture_21 Start: 14581, Stop: 15009, Start Num: 13

Candidate Starts for DaviePasture_21:

(Start: 12 @14578 has 2 MA's), (Start: 13 @14581 has 79 MA's), (22, 14605), (49, 14710), (58, 14755), (60, 14758), (63, 14776), (67, 14791), (79, 14863), (93, 14920), (94, 14938),

Gene: Delton_21 Start: 13560, Stop: 13979, Start Num: 14

Candidate Starts for Delton_21:

(Start: 14 @13560 has 20 MA's), (21, 13575), (32, 13614), (45, 13671), (51, 13692), (60, 13728), (64, 13749), (79, 13833), (87, 13875), (101, 13959),

Gene: Demikore_28 Start: 16743, Stop: 17144, Start Num: 11

Candidate Starts for Demikore_28:

(Start: 11 @16743 has 3 MA's), (35, 16812), (46, 16857), (50, 16866), (64, 16908), (67, 16920), (75, 16971), (80, 16995), (84, 17013), (101, 17118), (105, 17139),

Gene: Djokovic_16 Start: 9866, Stop: 10276, Start Num: 10

Candidate Starts for Djokovic_16:

(Start: 10 @9866 has 8 MA's), (16, 9881), (36, 9944), (39, 9962), (53, 9998), (66, 10058), (81, 10145), (87, 10178), (99, 10253), (101, 10262),

Gene: DoobyDoo_20 Start: 13758, Stop: 14186, Start Num: 13

Candidate Starts for DoobyDoo_20:

(Start: 12 @13755 has 2 MA's), (Start: 13 @13758 has 79 MA's), (49, 13887), (58, 13932), (60, 13935), (63, 13953), (67, 13968), (79, 14040), (93, 14097), (94, 14115),

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

Candidate Starts for DrLupo_29:

(Start: 7 @15577 has 19 MA's), (9, 15589), (Start: 11 @15592 has 3 MA's), (24, 15622), (47, 15718), (52, 15730), (65, 15766), (76, 15826), (87, 15889), (101, 15973), (102, 15976), (105, 15994),

Gene: DumpTruck_20 Start: 14012, Stop: 14440, Start Num: 13

Candidate Starts for DumpTruck_20:

(Start: 13 @14012 has 79 MA's), (49, 14141), (58, 14186), (60, 14189), (77, 14279), (79, 14294), (93, 14351),

Gene: Erudite_22 Start: 12110, Stop: 12538, Start Num: 13

Candidate Starts for Erudite_22:

(Start: 13 @12110 has 79 MA's), (42, 12215), (48, 12236), (51, 12248), (57, 12272), (79, 12392), (84, 12413),

Gene: Erutan_21 Start: 14271, Stop: 14699, Start Num: 13

Candidate Starts for Erutan_21:

(Start: 12 @14268 has 2 MA's), (Start: 13 @14271 has 79 MA's), (49, 14400), (58, 14445), (60, 14448), (63, 14466), (67, 14481), (79, 14553), (93, 14610), (94, 14628),

Gene: FountainFog_22 Start: 11719, Stop: 12147, Start Num: 13

Candidate Starts for FountainFog_22:

(Start: 13 @11719 has 79 MA's), (48, 11845), (55, 11872), (56, 11875), (57, 11881), (82, 12016), (90, 12052), (96, 12106),

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

Candidate Starts for Fowlmouth_15:

(Start: 7 @9282 has 19 MA's), (24, 9327), (43, 9411), (59, 9453), (61, 9465), (65, 9474), (87, 9597), (101, 9681),

Gene: FreddieHg_22 Start: 11609, Stop: 12037, Start Num: 13

Candidate Starts for FreddieHg_22:

(Start: 13 @11609 has 79 MA's), (42, 11714), (48, 11735), (51, 11747), (56, 11765), (57, 11771), (69, 11828), (79, 11891), (84, 11912),

Gene: Fulcrum_22 Start: 14804, Stop: 15232, Start Num: 13

Candidate Starts for Fulcrum_22:

(Start: 12 @14801 has 2 MA's), (Start: 13 @14804 has 79 MA's), (49, 14933), (58, 14978), (60, 14981), (63, 14999), (67, 15014), (79, 15086), (93, 15143), (94, 15161),

Gene: GOATification_22 Start: 14804, Stop: 15232, Start Num: 13

Candidate Starts for GOATification_22:

(Start: 12 @14801 has 2 MA's), (Start: 13 @14804 has 79 MA's), (49, 14933), (58, 14978), (60, 14981), (63, 14999), (67, 15014), (79, 15086), (93, 15143), (94, 15161),

Gene: Genamy16_20 Start: 12378, Stop: 12806, Start Num: 13

Candidate Starts for Genamy16_20:

(Start: 12 @12375 has 2 MA's), (Start: 13 @12378 has 79 MA's), (49, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (79, 12660), (93, 12717), (94, 12735),

Gene: Gibbin_22 Start: 14864, Stop: 15292, Start Num: 13

Candidate Starts for Gibbin_22:

(Start: 12 @14861 has 2 MA's), (Start: 13 @14864 has 79 MA's), (49, 14993), (58, 15038), (60, 15041), (63, 15059), (67, 15074), (79, 15146), (93, 15203), (94, 15221),

Gene: Gilda_23 Start: 12392, Stop: 12820, Start Num: 13

Candidate Starts for Gilda_23:

(Start: 13 @12392 has 79 MA's), (48, 12518), (55, 12545), (56, 12548), (57, 12554), (82, 12689), (90, 12725),

Gene: Giuseppe_21 Start: 13540, Stop: 13959, Start Num: 14

Candidate Starts for Giuseppe_21:

(Start: 14 @13540 has 20 MA's), (21, 13555), (32, 13594), (45, 13651), (51, 13672), (60, 13708), (64, 13729), (79, 13813), (87, 13855), (101, 13939),

Gene: Gretellyn_21 Start: 15138, Stop: 15566, Start Num: 13

Candidate Starts for Gretellyn_21:

(Start: 12 @15135 has 2 MA's), (Start: 13 @15138 has 79 MA's), (49, 15267), (58, 15312), (60, 15315), (63, 15333), (67, 15348), (79, 15420), (93, 15477), (94, 15495),

Gene: Gumball_20 Start: 13498, Stop: 13917, Start Num: 14

Candidate Starts for Gumball_20:

(Start: 14 @13498 has 20 MA's), (21, 13513), (32, 13552), (45, 13609), (51, 13630), (60, 13666), (64, 13687), (79, 13771), (87, 13813), (101, 13897),

Gene: Hager_24 Start: 11963, Stop: 12391, Start Num: 13

Candidate Starts for Hager_24:

(Start: 13 @11963 has 79 MA's), (48, 12089), (55, 12116), (56, 12119), (57, 12125), (82, 12260), (84, 12266), (90, 12296), (96, 12350),

Gene: Haunter_23 Start: 11805, Stop: 12233, Start Num: 13

Candidate Starts for Haunter_23:

(Start: 13 @11805 has 79 MA's), (48, 11931), (55, 11958), (56, 11961), (57, 11967), (82, 12102), (90, 12138), (96, 12192),

Gene: Hawkeye_23 Start: 13446, Stop: 13865, Start Num: 15

Candidate Starts for Hawkeye_23:

(Start: 15 @13446 has 1 MA's), (20, 13458), (33, 13503), (45, 13557), (64, 13635), (66, 13641), (67, 13647), (80, 13722), (84, 13740), (88, 13764), (90, 13770), (92, 13776), (98, 13833), (101, 13845), (102, 13848), (104, 13857),

Gene: Helpful_22 Start: 13548, Stop: 13967, Start Num: 14

Candidate Starts for Helpful_22:

(Start: 14 @13548 has 20 MA's), (21, 13563), (32, 13602), (45, 13659), (51, 13680), (60, 13716), (64, 13737), (79, 13821), (87, 13863), (101, 13947),

Gene: Hiddenleaf_22 Start: 11593, Stop: 12021, Start Num: 13

Candidate Starts for Hiddenleaf_22:

(Start: 13 @11593 has 79 MA's), (42, 11698), (48, 11719), (51, 11731), (56, 11749), (57, 11755), (69, 11812), (79, 11875), (84, 11896),

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

Candidate Starts for Indlulamithi_18:

(Start: 7 @11372 has 19 MA's), (31, 11447), (59, 11543), (70, 11591), (81, 11654), (83, 11663),

Gene: JDawG_22 Start: 12175, Stop: 12603, Start Num: 13

Candidate Starts for JDawG_22:

(Start: 13 @12175 has 79 MA's), (42, 12280), (48, 12301), (51, 12313), (57, 12337), (79, 12457), (84, 12478),

Gene: Jalebi_21 Start: 15314, Stop: 15742, Start Num: 13

Candidate Starts for Jalebi_21:

(Start: 12 @15311 has 2 MA's), (Start: 13 @15314 has 79 MA's), (49, 15443), (58, 15488), (60, 15491), (63, 15509), (67, 15524), (79, 15596), (93, 15653), (94, 15671),

Gene: Jamemuya19_19 Start: 12378, Stop: 12806, Start Num: 13

Candidate Starts for Jamemuya19_19:

(Start: 12 @12375 has 2 MA's), (Start: 13 @12378 has 79 MA's), (49, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (79, 12660), (93, 12717), (94, 12735),

Gene: JingleBells_22 Start: 11674, Stop: 12102, Start Num: 13

Candidate Starts for JingleBells_22:

(Start: 13 @11674 has 79 MA's), (42, 11779), (48, 11800), (51, 11812), (56, 11830), (57, 11836), (69, 11893), (79, 11956), (84, 11977),

Gene: Karate_22 Start: 11813, Stop: 12241, Start Num: 13

Candidate Starts for Karate_22:

(Start: 13 @11813 has 79 MA's), (48, 11939), (55, 11966), (56, 11969), (57, 11975), (82, 12110), (90, 12146), (96, 12200),

Gene: Kate_23 Start: 12400, Stop: 12828, Start Num: 13

Candidate Starts for Kate_23:

(Start: 13 @12400 has 79 MA's), (48, 12526), (55, 12553), (56, 12556), (57, 12562), (82, 12697), (90, 12733),

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

Candidate Starts for Konstantine_25:

(Start: 5 @14562 has 11 MA's), (Start: 7 @14580 has 19 MA's), (31, 14649), (34, 14655), (57, 14751), (87, 14910), (89, 14916), (94, 14946), (101, 14994),

Gene: Kors_24 Start: 12425, Stop: 12856, Start Num: 13

Candidate Starts for Kors_24:

(Start: 12 @12422 has 2 MA's), (Start: 13 @12425 has 79 MA's), (Start: 15 @12431 has 1 MA's), (18, 12440), (28, 12473), (42, 12533), (51, 12566), (55, 12581), (56, 12584), (64, 12626), (73, 12683), (80, 12713), (84, 12731), (91, 12764), (96, 12815), (100, 12830),

Gene: Krampus_23 Start: 12398, Stop: 12826, Start Num: 13

Candidate Starts for Krampus_23:

(Start: 13 @12398 has 79 MA's), (48, 12524), (55, 12551), (56, 12554), (57, 12560), (82, 12695), (90, 12731),

Gene: Labelle_27 Start: 16745, Stop: 17146, Start Num: 11

Candidate Starts for Labelle_27:

(Start: 11 @16745 has 3 MA's), (17, 16757), (35, 16814), (46, 16859), (50, 16868), (64, 16910), (67, 16922), (75, 16973), (80, 16997), (84, 17015), (101, 17120), (105, 17141),

Gene: Lambo_21 Start: 14808, Stop: 15236, Start Num: 13

Candidate Starts for Lambo_21:

(Start: 12 @14805 has 2 MA's), (Start: 13 @14808 has 79 MA's), (49, 14937), (58, 14982), (60, 14985), (63, 15003), (67, 15018), (79, 15090), (93, 15147), (94, 15165),

Gene: LavAbarElk_19 Start: 13241, Stop: 13669, Start Num: 13

Candidate Starts for LavAbarElk_19:

(Start: 12 @13238 has 2 MA's), (Start: 13 @13241 has 79 MA's), (22, 13265), (49, 13370), (58, 13415), (60, 13418), (63, 13436), (67, 13451), (79, 13523), (93, 13580), (94, 13598),

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

Candidate Starts for Leopard_30:

(6, 19287), (Start: 7 @19290 has 19 MA's), (25, 19341), (41, 19413), (54, 19452), (67, 19506), (68, 19512), (79, 19578), (87, 19620), (89, 19626), (94, 19656),

Gene: Lila22_21 Start: 14762, Stop: 15190, Start Num: 13

Candidate Starts for Lila22_21:

(Start: 12 @14759 has 2 MA's), (Start: 13 @14762 has 79 MA's), (49, 14891), (58, 14936), (60, 14939), (63, 14957), (67, 14972), (79, 15044), (93, 15101), (94, 15119),

Gene: LilyPad_17 Start: 10585, Stop: 10992, Start Num: 10

Candidate Starts for LilyPad_17:

(Start: 10 @10585 has 8 MA's), (39, 10678), (62, 10762), (64, 10768), (71, 10816), (81, 10861), (90, 10903), (101, 10978),

Gene: LittleFella_18 Start: 12477, Stop: 12860, Start Num: 14

Candidate Starts for LittleFella_18:

(1, 12273), (Start: 14 @12477 has 20 MA's), (24, 12495), (29, 12516), (36, 12528), (39, 12546), (72, 12693), (74, 12699), (79, 12723), (85, 12756), (86, 12759), (101, 12846), (103, 12852),

Gene: LordBart_24 Start: 12341, Stop: 12772, Start Num: 13

Candidate Starts for LordBart_24:

(Start: 12 @12338 has 2 MA's), (Start: 13 @12341 has 79 MA's), (Start: 15 @12347 has 1 MA's), (18, 12356), (28, 12389), (42, 12449), (51, 12482), (55, 12497), (56, 12500), (64, 12542), (73, 12599), (80, 12629), (84, 12647), (91, 12680), (96, 12731), (100, 12746),

Gene: LuckyLeo_20 Start: 14093, Stop: 14521, Start Num: 13

Candidate Starts for LuckyLeo_20:

(Start: 13 @14093 has 79 MA's), (22, 14117), (49, 14222), (58, 14267), (67, 14303), (70, 14321), (79, 14375), (93, 14432), (94, 14450),

Gene: Madi_16 Start: 9866, Stop: 10276, Start Num: 10

Candidate Starts for Madi_16:

(Start: 10 @9866 has 8 MA's), (16, 9881), (36, 9944), (39, 9962), (53, 9998), (66, 10058), (81, 10145), (87, 10178), (99, 10253), (101, 10262),

Gene: Madruga_26 Start: 16414, Stop: 16815, Start Num: 11

Candidate Starts for Madruga_26:

(Start: 11 @16414 has 3 MA's), (19, 16429), (35, 16483), (46, 16528), (64, 16579), (67, 16591), (75, 16642), (80, 16666), (84, 16684), (101, 16789), (105, 16810),

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

Candidate Starts for Megatron06_22:

(Start: 5 @13895 has 11 MA's), (Start: 7 @13913 has 19 MA's), (31, 13982), (34, 13988), (57, 14084), (87, 14243), (89, 14249), (94, 14279), (101, 14327),

Gene: Mima20_20 Start: 14491, Stop: 14919, Start Num: 13

Candidate Starts for Mima20_20:

(Start: 12 @14488 has 2 MA's), (Start: 13 @14491 has 79 MA's), (22, 14515), (49, 14620), (58, 14665), (60, 14668), (63, 14686), (67, 14701), (79, 14773), (93, 14830), (94, 14848),

Gene: MoiGyank_23 Start: 15175, Stop: 15603, Start Num: 13

Candidate Starts for MoiGyank_23:

(Start: 12 @15172 has 2 MA's), (Start: 13 @15175 has 79 MA's), (49, 15304), (58, 15349), (60, 15352), (63, 15370), (67, 15385), (79, 15457), (93, 15514), (94, 15532),

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

Candidate Starts for MontyDev_21:

(4, 13549), (Start: 7 @13570 has 19 MA's), (Start: 11 @13585 has 3 MA's), (31, 13645), (44, 13702), (78, 13837), (90, 13900), (95, 13930),

Gene: Mopey_21 Start: 13548, Stop: 13967, Start Num: 14

Candidate Starts for Mopey_21:

(Start: 14 @13548 has 20 MA's), (21, 13563), (32, 13602), (45, 13659), (51, 13680), (60, 13716), (64, 13737), (79, 13821), (87, 13863), (101, 13947),

Gene: MortySmith_21 Start: 11572, Stop: 12000, Start Num: 13

Candidate Starts for MortySmith_21:

(Start: 13 @11572 has 79 MA's), (42, 11677), (48, 11698), (51, 11710), (57, 11734), (79, 11854), (84, 11875),

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

Candidate Starts for MrMiyagi_15:

(Start: 7 @9282 has 19 MA's), (24, 9327), (43, 9411), (59, 9453), (61, 9465), (65, 9474), (87, 9597), (101, 9681),

Gene: NarutoRun_23 Start: 12391, Stop: 12819, Start Num: 13

Candidate Starts for NarutoRun_23:

(Start: 13 @12391 has 79 MA's), (48, 12517), (55, 12544), (56, 12547), (57, 12553), (82, 12688), (90, 12724),

Gene: Neptune_23 Start: 12368, Stop: 12796, Start Num: 13

Candidate Starts for Neptune_23:

(Start: 13 @12368 has 79 MA's), (48, 12494), (55, 12521), (56, 12524), (57, 12530), (82, 12665), (90, 12701),

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

Candidate Starts for Nilo_22:

(4, 13888), (Start: 7 @13909 has 19 MA's), (Start: 11 @13924 has 3 MA's), (31, 13984), (44, 14041), (78, 14176), (90, 14239), (95, 14269),

Gene: NorManre_22 Start: 14370, Stop: 14798, Start Num: 13

Candidate Starts for NorManre_22:

(Start: 12 @14367 has 2 MA's), (Start: 13 @14370 has 79 MA's), (49, 14499), (58, 14544), (60, 14547), (63, 14565), (67, 14580), (79, 14652), (93, 14709), (94, 14727),

Gene: Nova_21 Start: 13975, Stop: 14394, Start Num: 14

Candidate Starts for Nova_21:

(Start: 14 @13975 has 20 MA's), (21, 13990), (32, 14029), (45, 14086), (51, 14107), (60, 14143), (64, 14164), (79, 14248), (87, 14290), (101, 14374),

Gene: NovaSharks_20 Start: 12378, Stop: 12806, Start Num: 13

Candidate Starts for NovaSharks_20:

(Start: 12 @12375 has 2 MA's), (Start: 13 @12378 has 79 MA's), (49, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (79, 12660), (93, 12717), (94, 12735),

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

Candidate Starts for Oaker_20:

(Start: 5 @13619 has 11 MA's), (Start: 7 @13637 has 19 MA's), (31, 13706), (34, 13712), (57, 13808), (87, 13967), (89, 13973), (94, 14003), (101, 14051),

Gene: OhDear_23 Start: 12397, Stop: 12825, Start Num: 13

Candidate Starts for OhDear_23:

(Start: 13 @12397 has 79 MA's), (48, 12523), (55, 12550), (56, 12553), (57, 12559), (82, 12694), (90, 12730),

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

Candidate Starts for Onyinye_31:

(6, 19168), (Start: 7 @19171 has 19 MA's), (25, 19222), (41, 19294), (54, 19333), (67, 19387), (68, 19393), (79, 19459), (87, 19501), (89, 19507), (94, 19537),

Gene: OtterstedtS21_21 Start: 14460, Stop: 14888, Start Num: 13

Candidate Starts for OtterstedtS21_21:

(Start: 12 @14457 has 2 MA's), (Start: 13 @14460 has 79 MA's), (49, 14589), (58, 14634), (60, 14637), (63, 14655), (67, 14670), (79, 14742), (93, 14799), (94, 14817),

Gene: OverHedge_23 Start: 12365, Stop: 12793, Start Num: 13

Candidate Starts for OverHedge_23:

(Start: 13 @12365 has 79 MA's), (48, 12491), (55, 12518), (56, 12521), (57, 12527), (82, 12662), (90, 12698),

Gene: PBI1_22 Start: 13479, Stop: 13898, Start Num: 14

Candidate Starts for PBI1_22:

(Start: 14 @13479 has 20 MA's), (21, 13494), (32, 13533), (45, 13590), (51, 13611), (60, 13647), (64, 13668), (79, 13752), (87, 13794), (101, 13878),

Gene: PLOT_22 Start: 13551, Stop: 13970, Start Num: 14

Candidate Starts for PLOT_22:

(Start: 14 @13551 has 20 MA's), (21, 13566), (32, 13605), (45, 13662), (51, 13683), (60, 13719), (64, 13740), (79, 13824), (87, 13866), (101, 13950),

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

Candidate Starts for Papyrus_21:

(4, 13550), (Start: 7 @13571 has 19 MA's), (Start: 11 @13586 has 3 MA's), (31, 13646), (44, 13703), (78, 13838), (90, 13901), (95, 13931),

Gene: ParvusTarda_21 Start: 13942, Stop: 14370, Start Num: 13

Candidate Starts for ParvusTarda_21:

(Start: 12 @13939 has 2 MA's), (Start: 13 @13942 has 79 MA's), (49, 14071), (58, 14116), (60, 14119), (63, 14137), (67, 14152), (79, 14224), (93, 14281), (94, 14299),

Gene: Patience_28 Start: 17304, Stop: 17705, Start Num: 11

Candidate Starts for Patience_28:

(Start: 11 @17304 has 3 MA's), (35, 17373), (46, 17418), (50, 17427), (64, 17469), (67, 17481), (75, 17532), (80, 17556), (84, 17574), (101, 17679), (105, 17700),

Gene: Patos_22 Start: 14370, Stop: 14798, Start Num: 13

Candidate Starts for Patos_22:

(Start: 12 @14367 has 2 MA's), (Start: 13 @14370 has 79 MA's), (49, 14499), (58, 14544), (60, 14547), (63, 14565), (67, 14580), (79, 14652), (93, 14709), (94, 14727),

Gene: Penelope2018_21 Start: 13548, Stop: 13967, Start Num: 14

Candidate Starts for Penelope2018_21:

(Start: 14 @13548 has 20 MA's), (21, 13563), (32, 13602), (45, 13659), (51, 13680), (60, 13716), (64, 13737), (79, 13821), (87, 13863), (101, 13947),

Gene: Phalaborwa_21 Start: 13581, Stop: 14000, Start Num: 14

Candidate Starts for Phalaborwa_21:

(Start: 14 @13581 has 20 MA's), (21, 13596), (32, 13635), (37, 13656), (51, 13713), (60, 13749), (67, 13782), (81, 13863), (87, 13896), (95, 13935), (101, 13980),

Gene: Pharpay_23 Start: 12413, Stop: 12841, Start Num: 13

Candidate Starts for Pharpay_23:

(Start: 13 @12413 has 79 MA's), (48, 12539), (55, 12566), (56, 12569), (57, 12575), (82, 12710), (90, 12746),

Gene: Phreeze_20 Start: 13360, Stop: 13818, Start Num: 5

Candidate Starts for Phreeze_20:

(Start: 5 @13360 has 11 MA's), (Start: 7 @13378 has 19 MA's), (31, 13447), (34, 13453), (57, 13549), (87, 13708), (89, 13714), (94, 13744), (101, 13792),

Gene: PhunaPhoke_23 Start: 12386, Stop: 12814, Start Num: 13

Candidate Starts for PhunaPhoke_23:

(Start: 13 @12386 has 79 MA's), (48, 12512), (55, 12539), (56, 12542), (57, 12548), (82, 12683), (90, 12719),

Gene: Potty_23 Start: 12391, Stop: 12819, Start Num: 13

Candidate Starts for Potty_23:

(Start: 13 @12391 has 79 MA's), (48, 12517), (55, 12544), (56, 12547), (57, 12553), (82, 12688), (90, 12724),

Gene: Poultress_22 Start: 12164, Stop: 12592, Start Num: 13

Candidate Starts for Poultress_22:

(Start: 13 @12164 has 79 MA's), (48, 12290), (55, 12317), (56, 12320), (57, 12326), (82, 12461), (90, 12497),

Gene: Prager_21 Start: 13560, Stop: 13979, Start Num: 14

Candidate Starts for Prager_21:

(Start: 14 @13560 has 20 MA's), (21, 13575), (32, 13614), (45, 13671), (51, 13692), (60, 13728), (64, 13749), (79, 13833), (87, 13875), (101, 13959),

Gene: Predator_24 Start: 14885, Stop: 15343, Start Num: 5

Candidate Starts for Predator_24:

(Start: 5 @14885 has 11 MA's), (Start: 7 @14903 has 19 MA's), (8, 14909), (30, 14969), (34, 14978), (57, 15074), (63, 15104), (78, 15179), (83, 15209), (89, 15239), (90, 15242), (94, 15269), (101, 15317),

Gene: Puissant_21 Start: 13816, Stop: 14274, Start Num: 5

Candidate Starts for Puissant_21:

(Start: 5 @13816 has 11 MA's), (Start: 7 @13834 has 19 MA's), (16, 13858), (23, 13873), (31, 13903), (34, 13909), (57, 14005), (70, 14068), (89, 14170), (94, 14200), (101, 14248),

Gene: Pywacket_20 Start: 15299, Stop: 15727, Start Num: 13

Candidate Starts for Pywacket_20:

(Start: 12 @15296 has 2 MA's), (Start: 13 @15299 has 79 MA's), (49, 15428), (58, 15473), (60, 15476), (63, 15494), (67, 15509), (79, 15581), (93, 15638), (94, 15656),

Gene: Rachella_23 Start: 12394, Stop: 12822, Start Num: 13

Candidate Starts for Rachella_23:

(Start: 13 @12394 has 79 MA's), (48, 12520), (55, 12547), (56, 12550), (57, 12556), (82, 12691), (90, 12727),

Gene: Ranch_21 Start: 13308, Stop: 13736, Start Num: 13

Candidate Starts for Ranch_21:

(Start: 12 @13305 has 2 MA's), (Start: 13 @13308 has 79 MA's), (49, 13437), (58, 13482), (60, 13485), (63, 13503), (67, 13518), (79, 13590), (93, 13647), (94, 13665),

Gene: RazorC_19 Start: 12378, Stop: 12806, Start Num: 13

Candidate Starts for RazorC_19:

(Start: 12 @12375 has 2 MA's), (Start: 13 @12378 has 79 MA's), (49, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (79, 12660), (93, 12717), (94, 12735),

Gene: Riduram_19 Start: 12348, Stop: 12776, Start Num: 13

Candidate Starts for Riduram_19:

(Start: 12 @12345 has 2 MA's), (Start: 13 @12348 has 79 MA's), (49, 12477), (58, 12522), (60, 12525), (63, 12543), (67, 12558), (79, 12630), (93, 12687), (94, 12705),

Gene: Rie18_23 Start: 11745, Stop: 12173, Start Num: 13

Candidate Starts for Rie18_23:

(Start: 13 @11745 has 79 MA's), (48, 11871), (55, 11898), (56, 11901), (57, 11907), (82, 12042), (84, 12048), (90, 12078), (96, 12132),

Gene: RikSengupta_24 Start: 12459, Stop: 12893, Start Num: 12

Candidate Starts for RikSengupta_24:

(Start: 12 @12459 has 2 MA's), (Start: 13 @12462 has 79 MA's), (Start: 15 @12468 has 1 MA's), (18, 12477), (28, 12510), (42, 12570), (51, 12603), (55, 12618), (56, 12621), (64, 12663), (73, 12720), (80, 12750), (84, 12768), (91, 12801), (96, 12852), (100, 12867),

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

Candidate Starts for Riparian_21:

(4, 13349), (Start: 7 @13370 has 19 MA's), (Start: 11 @13385 has 3 MA's), (31, 13445), (44, 13502), (78, 13637), (90, 13700), (95, 13730),

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

Candidate Starts for Rope_21:

(4, 13541), (Start: 7 @13562 has 19 MA's), (Start: 11 @13577 has 3 MA's), (31, 13637), (44, 13694), (78, 13829), (90, 13892), (95, 13922),

Gene: Rota_20 Start: 14266, Stop: 14694, Start Num: 13

Candidate Starts for Rota_20:

(Start: 12 @14263 has 2 MA's), (Start: 13 @14266 has 79 MA's), (49, 14395), (58, 14440), (60, 14443), (63, 14461), (67, 14476), (79, 14548), (93, 14605), (94, 14623),

Gene: Rukungu_21 Start: 15007, Stop: 15435, Start Num: 13

Candidate Starts for Rukungu_21:

(Start: 12 @15004 has 2 MA's), (Start: 13 @15007 has 79 MA's), (49, 15136), (58, 15181), (60, 15184), (63, 15202), (67, 15217), (79, 15289), (93, 15346), (94, 15364),

Gene: Rumi_20 Start: 12378, Stop: 12806, Start Num: 13

Candidate Starts for Rumi_20:

(Start: 12 @12375 has 2 MA's), (Start: 13 @12378 has 79 MA's), (49, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (79, 12660), (93, 12717), (94, 12735),

Gene: Sadboi_21 Start: 15138, Stop: 15566, Start Num: 13

Candidate Starts for Sadboi_21:

(Start: 12 @15135 has 2 MA's), (Start: 13 @15138 has 79 MA's), (49, 15267), (58, 15312), (60, 15315), (63, 15333), (67, 15348), (79, 15420), (93, 15477), (94, 15495),

Gene: Sampudon_21 Start: 15314, Stop: 15742, Start Num: 13

Candidate Starts for Sampudon_21:

(Start: 12 @15311 has 2 MA's), (Start: 13 @15314 has 79 MA's), (49, 15443), (58, 15488), (60, 15491), (63, 15509), (67, 15524), (79, 15596), (93, 15653), (94, 15671),

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

Candidate Starts for Send513_21:

(4, 13891), (Start: 7 @13912 has 19 MA's), (Start: 11 @13927 has 3 MA's), (31, 13987), (44, 14044), (78, 14179), (90, 14242), (95, 14272),

Gene: Sienna_16 Start: 9866, Stop: 10276, Start Num: 10

Candidate Starts for Sienna_16:

(Start: 10 @9866 has 8 MA's), (16, 9881), (36, 9944), (39, 9962), (53, 9998), (66, 10058), (81, 10145), (87, 10178), (99, 10253), (101, 10262),

Gene: SilentWarrior_22 Start: 11601, Stop: 12029, Start Num: 13

Candidate Starts for SilentWarrior_22:

(Start: 13 @11601 has 79 MA's), (38, 11682), (42, 11706), (48, 11727), (51, 11739), (56, 11757), (57, 11763), (69, 11820), (79, 11883), (84, 11904),

Gene: SirHarley_20 Start: 13480, Stop: 13899, Start Num: 14

Candidate Starts for SirHarley_20:

(Start: 14 @13480 has 20 MA's), (21, 13495), (32, 13534), (45, 13591), (51, 13612), (60, 13648), (64, 13669), (79, 13753), (87, 13795), (101, 13879),

Gene: Snakehole_24 Start: 11690, Stop: 12118, Start Num: 13

Candidate Starts for Snakehole_24:

(Start: 13 @11690 has 79 MA's), (42, 11795), (48, 11816), (51, 11828), (56, 11846), (57, 11852), (69, 11909), (79, 11972), (84, 11993),

Gene: Sparcetus_24 Start: 12338, Stop: 12772, Start Num: 12

Candidate Starts for Sparcetus_24:

(Start: 12 @12338 has 2 MA's), (Start: 13 @12341 has 79 MA's), (Start: 15 @12347 has 1 MA's), (18, 12356), (28, 12389), (42, 12449), (51, 12482), (55, 12497), (56, 12500), (64, 12542), (73, 12599), (80, 12629), (84, 12647), (91, 12680), (96, 12731), (100, 12746),

Gene: Stormer_19 Start: 12378, Stop: 12806, Start Num: 13

Candidate Starts for Stormer_19:

(Start: 12 @12375 has 2 MA's), (Start: 13 @12378 has 79 MA's), (49, 12507), (58, 12552), (60, 12555), (63, 12573), (67, 12588), (79, 12660), (93, 12717), (94, 12735),

Gene: SuperSonics_27 Start: 16471, Stop: 16872, Start Num: 11

Candidate Starts for SuperSonics_27:

(Start: 11 @16471 has 3 MA's), (17, 16483), (35, 16540), (46, 16585), (50, 16594), (64, 16636), (67, 16648), (75, 16699), (80, 16723), (84, 16741), (101, 16846), (105, 16867),

Gene: SuperheroCarly_21 Start: 13410, Stop: 13829, Start Num: 14

Candidate Starts for SuperheroCarly_21:

(Start: 14 @13410 has 20 MA's), (21, 13425), (32, 13464), (45, 13521), (51, 13542), (60, 13578), (64, 13599), (79, 13683), (87, 13725), (101, 13809),

Gene: Suzy_17 Start: 11094, Stop: 11504, Start Num: 10

Candidate Starts for Suzy_17:

(Start: 10 @11094 has 8 MA's), (16, 11109), (36, 11172), (39, 11190), (48, 11214), (66, 11286), (71, 11328), (74, 11340), (87, 11406), (99, 11481), (101, 11490),

Gene: Tedro_23 Start: 11864, Stop: 12292, Start Num: 13

Candidate Starts for Tedro_23:

(Start: 13 @11864 has 79 MA's), (48, 11990), (55, 12017), (56, 12020), (57, 12026), (82, 12161), (90, 12197),

Gene: Terapin_16 Start: 9866, Stop: 10276, Start Num: 10

Candidate Starts for Terapin_16:

(Start: 10 @9866 has 8 MA's), (16, 9881), (36, 9944), (39, 9962), (53, 9998), (66, 10058), (81, 10145), (87, 10178), (99, 10253), (101, 10262),

Gene: Thoth_21 Start: 13545, Stop: 13964, Start Num: 14

Candidate Starts for Thoth_21:

(Start: 14 @13545 has 20 MA's), (21, 13560), (32, 13599), (45, 13656), (51, 13677), (60, 13713), (64, 13734), (79, 13818), (87, 13860), (101, 13944),

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

Candidate Starts for Thumb_20:

(Start: 5 @13361 has 11 MA's), (Start: 7 @13379 has 19 MA's), (31, 13448), (34, 13454), (57, 13550), (87, 13709), (89, 13715), (94, 13745), (101, 13793),

Gene: Tillicus_21 Start: 13687, Stop: 14115, Start Num: 13

Candidate Starts for Tillicus_21:

(Start: 13 @13687 has 79 MA's), (22, 13711), (49, 13816), (58, 13861), (67, 13897), (70, 13915), (79, 13969), (93, 14026), (94, 14044),

Gene: TinyMiny_24 Start: 12360, Stop: 12791, Start Num: 13

Candidate Starts for TinyMiny_24:

(Start: 12 @12357 has 2 MA's), (Start: 13 @12360 has 79 MA's), (Start: 15 @12366 has 1 MA's), (18, 12375), (28, 12408), (42, 12468), (51, 12501), (55, 12516), (56, 12519), (64, 12561), (73, 12618), (80, 12648), (84, 12666), (91, 12699), (96, 12750), (100, 12765),

Gene: Tongui_22 Start: 11737, Stop: 12165, Start Num: 13

Candidate Starts for Tongui_22:

(Start: 13 @11737 has 79 MA's), (48, 11863), (55, 11890), (56, 11893), (57, 11899), (82, 12034), (90, 12070), (96, 12124),

Gene: Troll4_21 Start: 13549, Stop: 13968, Start Num: 14

Candidate Starts for Troll4_21:

(Start: 14 @13549 has 20 MA's), (21, 13564), (32, 13603), (45, 13660), (51, 13681), (60, 13717), (64, 13738), (79, 13822), (87, 13864), (101, 13948),

Gene: Visconti_21 Start: 13558, Stop: 13977, Start Num: 14

Candidate Starts for Visconti_21:

(Start: 14 @13558 has 20 MA's), (21, 13573), (32, 13612), (45, 13669), (51, 13690), (60, 13726), (64, 13747), (79, 13831), (87, 13873), (101, 13957),

Gene: WaldoWhy_22 Start: 13554, Stop: 13973, Start Num: 14

Candidate Starts for WaldoWhy_22:

(Start: 14 @13554 has 20 MA's), (21, 13569), (32, 13608), (45, 13665), (51, 13686), (60, 13722), (64, 13743), (79, 13827), (87, 13869), (101, 13953),

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

Candidate Starts for Weiss13_21:

(4, 13581), (Start: 7 @13602 has 19 MA's), (Start: 11 @13617 has 3 MA's), (44, 13734), (78, 13869), (90, 13932), (95, 13962),

Gene: Wojtek_20 Start: 14015, Stop: 14443, Start Num: 13

Candidate Starts for Wojtek_20:

(Start: 12 @14012 has 2 MA's), (Start: 13 @14015 has 79 MA's), (49, 14144), (58, 14189), (60, 14192), (63, 14210), (67, 14225), (79, 14297), (93, 14354), (94, 14372),

Gene: Wollypog_11 Start: 8956, Stop: 9348, Start Num: 27

Candidate Starts for Wollypog_11:

(2, 8746), (3, 8866), (Start: 27 @8956 has 1 MA's), (40, 9025), (51, 9061), (53, 9064), (67, 9133), (69, 9139), (81, 9211), (97, 9313),

Gene: Xenia2_21 Start: 14054, Stop: 14482, Start Num: 13

Candidate Starts for Xenia2_21:

(Start: 13 @14054 has 79 MA's), (49, 14183), (58, 14228), (60, 14231), (77, 14321), (79, 14336), (93, 14393),

Gene: Yelo_21 Start: 13912, Stop: 14340, Start Num: 7

Candidate Starts for Yelo_21:

(4, 13891), (Start: 7 @13912 has 19 MA's), (Start: 11 @13927 has 3 MA's), (31, 13987), (44, 14044), (78, 14179), (90, 14242), (95, 14272),

Gene: Yikes_22 Start: 15399, Stop: 15827, Start Num: 13

Candidate Starts for Yikes_22:

(Start: 12 @15396 has 2 MA's), (Start: 13 @15399 has 79 MA's), (49, 15528), (58, 15573), (60, 15576), (63, 15594), (67, 15609), (79, 15681), (93, 15738), (94, 15756),

Gene: Zany_20 Start: 14528, Stop: 14956, Start Num: 13

Candidate Starts for Zany_20:

(Start: 12 @14525 has 2 MA's), (Start: 13 @14528 has 79 MA's), (22, 14552), (49, 14657), (58, 14702), (60, 14705), (63, 14723), (67, 14738), (79, 14810), (93, 14867), (94, 14885),

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

Candidate Starts for Zenon_22:

(4, 13893), (Start: 7 @13914 has 19 MA's), (Start: 11 @13929 has 3 MA's), (31, 13989), (44, 14046), (78, 14181), (90, 14244), (95, 14274),