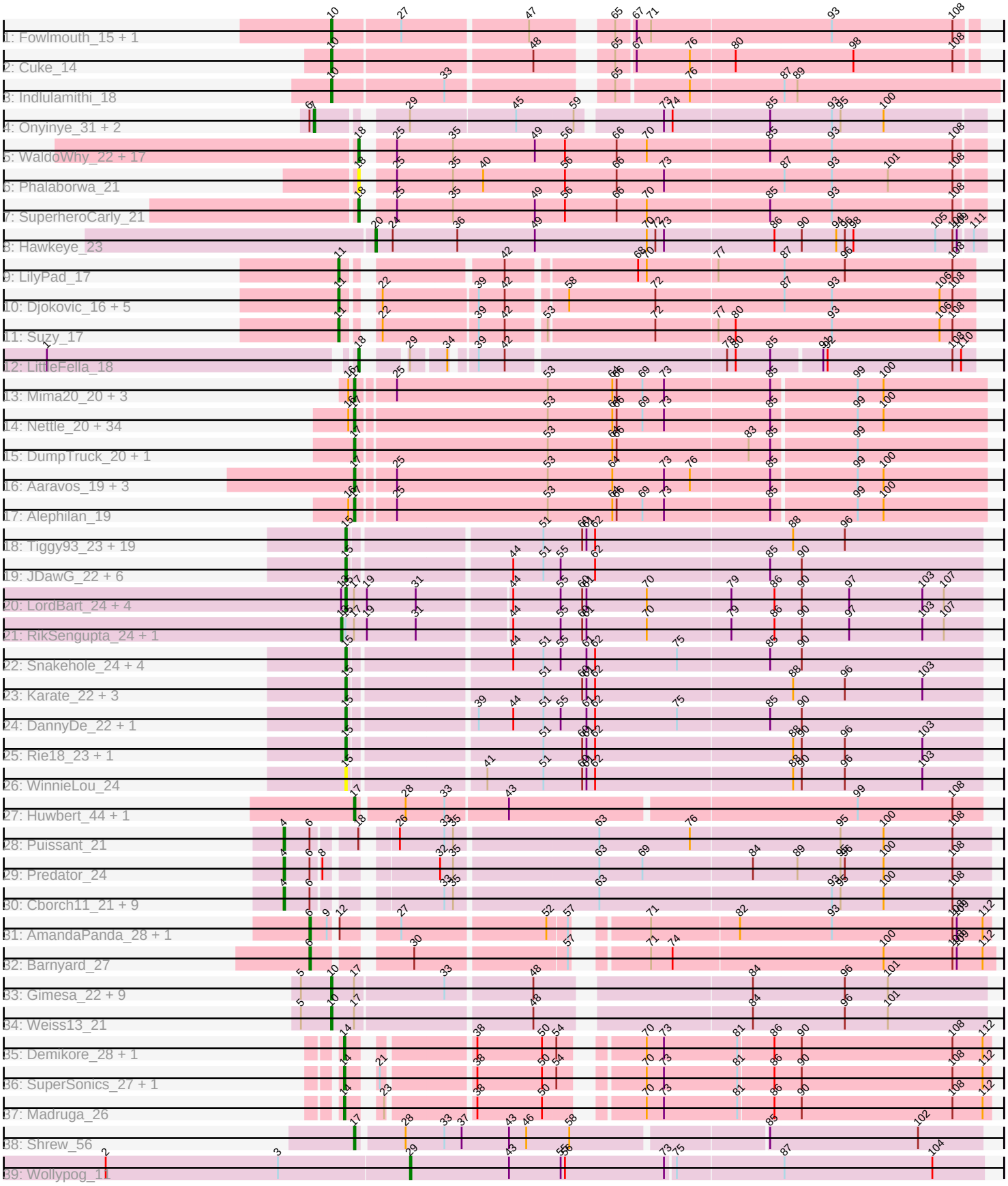
Pham 341841


1: Fowlmouth_15 + 1
2: Cuke_14
3: Indlulamithi_18
4: Onyinye_31 + 2
5: WaldoWhy_22 + 17
6: Phalaborwa_21
7: SuperheroCarly_21
8: Hawkeye_23
9: LilyPad_17
10: Djokovic_16 + 5
11: Suzy_17
12: LittleFella_18
13: Mima20_20 + 3
14: Nettle_20 + 34
15: DumpTruck_20 + 1
16: Aaravos_19 + 3
17: Alephilan_19
18: Tiggy93_23 + 19
19: JDawG_22 + 6
20: LordBart_24 + 4
21: RikSengupta_24 + 1
22: Snakehole_24 + 4
23: Karate_22 + 3
24: DannyDe_22 + 1
25: Rie18_23 + 1
26: WinnieLou_24
27: Huwbert_44 + 1
28: Puissant_21
29: Predator_24
30: Cborch11_21 + 9
31: AmandaPanda_28 + 1
32: Barnyard_27
33: Gimesa_22 + 9
34: Weiss13_21
35: Demikore_28 + 1
36: SuperSonics_27 + 1
37: Madruga_26
38: Shrew_56
39: Wollypog_11

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 341841 Report

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

Pham number 341841 has 166 members, 15 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 : Mima20_20, DaviePasture_21, Zany_20, LavAbarElk_19
• Track 14 : Nettle_20, 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, GretelLyn_21, Rumi_20, BirthdayBoy_22, Patos_22, Sadboi_21, Astralis_19, GOATification_22, Erutan_21, Ranch_21, Rukungu_21, Jamemuya19_19, Wojtek_20, Pywacket_20, RazorC_19, NovaSharks_20, NorManre_22, Jalebi_21, Rota_20, DoobyDoo_20
• Track 15 : DumpTruck_20, Xenia2_21
• Track 16 : Aaravos_19, Apeppi_19, LuckyLeo_20, Tillicus_21
• Track 17 : Alephilan_19
• Track 18 : Tiggy93_23, Krampus_23, SafetyGuy_23, Neptune_23, Pharpay_23, Gilda_23, Anakin_23, Rachella_23, Poultress_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 : WinnieLou_24
• Track 27 : Huwbert_44, Triscuit_43
• Track 28 : Puissant_21
• Track 29 : Predator_24
• Track 30 : Cborch11_21, BobtimousPrime_22, Phreeze_20, Damien_20, Beckerton_20, Oaker_20, Nish23_21, Megatron06_22, Konstantine_25, Thumb_20
• Track 31 : AmandaPanda_28, DrLupo_29
• Track 32 : Barnyard_27
• Track 33 : Gimesa_22, Send513_21, MontyDev_21, Candle_21, Nilo_22, Papyrus_21, Riparian_21, Zenon_22, Rope_21, Yelo_21
• Track 34 : Weiss13_21
• Track 35 : Demikore_28, Patience_28
• Track 36 : SuperSonics_27, Labelle_27
• Track 37 : Madruga_26
• Track 38 : Shrew_56
• Track 39 : 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 17, it was called in 43 of the 151 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Aaravos_19, Alephilan_19, Alyssamiracle_20, Apeppi_19, Astralis_19, Avian_19, BirthdayBoy_22, Charminar_19, DaviePasture_21, DoobyDoo_20, DumpTruck_20, Erutan_21, Fulcrum_22, GOATification_22, Genamy16_20, Gibbin_22, GretelLyn_21, Huwbert_44, Jalebi_21, Jamemuya19_19, Lambo_21, LavAbarElk_19, Lila22_21, LuckyLeo_20, Mima20_20, MoiGyank_23, Nettle_20, NorManre_22, NovaSharks_20, OtterstedtS21_21, ParvusTarda_21, Patos_22, Pywacket_20, Ranch_21, RazorC_19, Riduram_19, Rota_20, Rukungu_21, Rumi_20, Sadboi_21, Sampudon_21, Shrew_56, Stormer_19, Tillicus_21, Triscuit_43, Wojtek_20, Xenia2_21, Yikes_22, Zany_20,

Genes that have the "Most Annotated" start but do not call it:
• Ajin_24, Bramble_24, Candle_21, Gimesa_22, Kors_24, LordBart_24, MontyDev_21, Nilo_22, Papyrus_21, RikSengupta_24, Riparian_21, Rope_21, Send513_21, Sparcetus_24, TinyMiny_24, Weiss13_21, Yelo_21, Zenon_22,

Genes that do not have the "Most Annotated" start:
• Adjutor_22, Aesir_22, Aikoy_30, AmandaPanda_28, Anakin_23, AnnaSerena_23, Annapurna_22, Artiphact_23, Barnyard_27, Beckerton_20, Beyoncage_16, BiteSize_16, BobtimousPrime_22, Butterscotch_21, Cborch11_21, Chill_22, Chivey_22, CoolCookie_23, Crestdrop_22, Cuke_14, Cybele_23, Damien_20, DannyDe_22, Dauntless_22, Delton_21, Demikore_28, Djokovic_16, DrLupo_29, Erudite_22, FountainFog_22, Fowlmouth_15, FreddieHg_22, Gilda_23, Giuseppe_21, Gumball_20, Hager_24, Haunter_23, Hawkeye_23, Helpful_22, Hiddenleaf_22, Indlulamithi_18, JDawG_22, JingleBells_22, Karate_22, Kate_23, Konstantine_25, Krampus_23, Labelle_27, Leopard_30, LilyPad_17, LittleFella_18, Madi_16,

Madruga_26, Megatron06_22, Mopey_21, MortySmith_21, MrMiyagi_15, NarutoRun_23, Neptune_23, Nish23_21, Nova_21, Oaker_20, OhDear_23, Onyinye_31, OverHedge_23, PBI1_22, PLot_22, Patience_28, Penelope2018_21, Phalaborwa_21, Pharpay_23, Phreeze_20, PhunaPhoke_23, Potty_23, Poultress_22, Prager_21, Predator_24, Puissant_21, Rachella_23, Rie18_23, SafetyGuy_23, Sienna_16, SilentWarrior_22, SirHarley_20, Snakehole_24, SuperSonics_27, SuperheroCarly_21, Suzy_17, Tedro_23, Terapin_16, Thoth_21, Thumb_20, Tiggy93_23, Tongui_22, Troll4_21, Visconti_21, WaldoWhy_22, WinnieLou_24, Wollypog_11,

Summary by start number:

Start 4:
• Found in 12 of 166 (7.2%) of genes in pham
• Manual Annotations of this start: 11 of 151
• 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), Nish23_21 (H1), Oaker_20 (H1), Phreeze_20 (H1), Predator_24 (H1), Puissant_21 (H1), Thumb_20 (H1),

Start 6:
• Found in 18 of 166 (10.8%) of genes in pham
• Manual Annotations of this start: 2 of 151
• Called 16.7% of time when present
• Phage (with cluster) where this start called: AmandaPanda_28 (H2), Barnyard_27 (H2), DrLupo_29 (H2),

Start 7:
• Found in 3 of 166 (1.8%) of genes in pham
• Manual Annotations of this start: 3 of 151
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Aikoy_30 (AE), Leopard_30 (AE), Onyinye_31 (AE),

Start 10:
• Found in 15 of 166 (9.0%) of genes in pham
• Manual Annotations of this start: 14 of 151
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Candle_21 (R), Cuke_14 (AC), Fowlmouth_15 (AC), Gimesa_22 (R), Indlulamithi_18 (AC), MontyDev_21 (R), MrMiyagi_15 (AC), Nilo_22 (R), Papyrus_21 (R), Riparian_21 (R), Rope_21 (R), Send513_21 (R), Weiss13_21 (R), Yelo_21 (R), Zenon_22 (R),

Start 11:
• Found in 8 of 166 (4.8%) of genes in pham
• Manual Annotations of this start: 8 of 151
• 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 13:

• Found in 7 of 166 (4.2%) of genes in pham
• Manual Annotations of this start: 2 of 151
• Called 28.6% of time when present
• Phage (with cluster) where this start called: RikSengupta_24 (EF), Sparcetus_24 (EF),

Start 14:
• Found in 5 of 166 (3.0%) of genes in pham
• Manual Annotations of this start: 4 of 151
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Demikore_28 (U), Labelle_27 (U), Madruga_26 (U), Patience_28 (U), SuperSonics_27 (U),

Start 15:
• Found in 48 of 166 (28.9%) of genes in pham
• Manual Annotations of this start: 42 of 151
• Called 95.8% of time when present
• Phage (with cluster) where this start called: Aesir_22 (EF), Ajin_24 (EF), Anakin_23 (EF), AnnaSerena_23 (EF), Annapurna_22 (EF), Artiphact_23 (EF), Bramble_24 (EF), Chivey_22 (EF), CoolCookie_23 (EF), Crestdrop_22 (EF), Cybele_23 (EF), DannyDe_22 (EF), Dauntless_22 (EF), Erudite_22 (EF), FountainFog_22 (EF), FreddieHg_22 (EF), Gilda_23 (EF), Hager_24 (EF), Haunter_23 (EF), Hiddenleaf_22 (EF), JDawG_22 (EF), JingleBells_22 (EF), Karate_22 (EF), Kate_23 (EF), Kors_24 (EF), Krampus_23 (EF), LordBart_24 (EF), MortySmith_21 (EF), NarutoRun_23 (EF), Neptune_23 (EF), OhDear_23 (EF), OverHedge_23 (EF), Pharpay_23 (EF), PhunaPhoke_23 (EF), Potty_23 (EF), Poultress_22 (EF), Rachella_23 (EF), Rie18_23 (EF), SafetyGuy_23 (EF), SilentWarrior_22 (EF), Snakehole_24 (EF), Tedro_23 (EF), Tiggy93_23 (EF), TinyMiny_24 (EF), Tongui_22 (EF), WinnieLou_24 (EF),

Start 17:
• Found in 67 of 166 (40.4%) of genes in pham
• Manual Annotations of this start: 43 of 151
• Called 73.1% of time when present
• Phage (with cluster) where this start called: Aaravos_19 (DV), Alephilan_19 (DV), Alyssamiracle_20 (DV), Apeppi_19 (DV), Astralis_19 (DV), Avian_19 (DV), BirthdayBoy_22 (DV), Charminar_19 (DV), DaviePasture_21 (DV), DoobyDoo_20 (DV), DumpTruck_20 (DV), Erutan_21 (DV), Fulcrum_22 (DV), GOATification_22 (DV), Genamy16_20 (DV), Gibbin_22 (DV), GretelLyn_21 (DV), Huwbert_44 (GG), Jalebi_21 (DV), Jamemuya19_19 (DV), Lambo_21 (DV), LavAbarElk_19 (DV), Lila22_21 (DV), LuckyLeo_20 (DV), Mima20_20 (DV), MoiGyank_23 (DV), Nettle_20 (DV), NorManre_22 (DV), NovaSharks_20 (DV), OtterstedtS21_21 (DV), ParvusTarda_21 (DV), Patos_22 (DV), Pywacket_20 (DV), Ranch_21 (DV), RazorC_19 (DV), Riduram_19 (DV), Rota_20 (DV), Rukungu_21 (DV), Rumi_20 (DV), Sadboi_21 (DV), Sampudon_21 (DV), Shrew_56 (singleton), Stormer_19 (DV), Tillicus_21 (DV), Triscuit_43 (GG), Wojtek_20 (DV), Xenia2_21 (DV), Yikes_22 (DV), Zany_20 (DV),

Start 18:
• Found in 22 of 166 (13.3%) of genes in pham
• Manual Annotations of this start: 20 of 151
• Called 95.5% 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 20:
• Found in 1 of 166 (0.6%) of genes in pham
• Manual Annotations of this start: 1 of 151
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Hawkeye_23 (D2),

Start 29:
• Found in 5 of 166 (3.0%) of genes in pham
• Manual Annotations of this start: 1 of 151
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Wollypog_11 (singleton),

Summary by clusters:

There are 14 clusters represented in this pham: DG2, singleton, EF, AE, H2, H1, AC, GG, R, U, DV, DG1, D2, D1,

Info for manual annotations of cluster AC:
•Start number 10 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 18 was manually annotated 19 times for cluster D1.

Info for manual annotations of cluster D2:
•Start number 20 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DG1:
•Start number 11 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:
•Start number 18 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:
•Start number 17 was manually annotated 40 times for cluster DV.

Info for manual annotations of cluster EF:
•Start number 13 was manually annotated 2 times for cluster EF.
•Start number 15 was manually annotated 42 times for cluster EF.

Info for manual annotations of cluster GG:
•Start number 17 was manually annotated 2 times for cluster GG.

Info for manual annotations of cluster H1:

•Start number 4 was manually annotated 11 times for cluster H1.

Info for manual annotations of cluster H2:
•Start number 6 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster R:
•Start number 10 was manually annotated 10 times for cluster R.

Info for manual annotations of cluster U:
•Start number 14 was manually annotated 4 times for cluster U.

Gene Information:

Gene: Aaravos_19 Start: 14043, Stop: 14471, Start Num: 17
Candidate Starts for Aaravos_19:
(Start: 17 @14043 has 43 MA's), (25, 14067), (53, 14172), (64, 14217), (73, 14253), (76, 14271), (85, 14325), (99, 14382), (100, 14400),

Gene: Adjutor_22 Start: 13488, Stop: 13907, Start Num: 18
Candidate Starts for Adjutor_22:
(Start: 18 @13488 has 20 MA's), (25, 13503), (35, 13542), (49, 13599), (56, 13620), (66, 13656), (70, 13677), (85, 13761), (93, 13803), (108, 13887),

Gene: Aesir_22 Start: 12181, Stop: 12609, Start Num: 15
Candidate Starts for Aesir_22:
(Start: 15 @12181 has 42 MA's), (44, 12286), (51, 12307), (55, 12319), (62, 12343), (85, 12463), (90, 12484),

Gene: Aikoy_30 Start: 19005, Stop: 19439, Start Num: 7
Candidate Starts for Aikoy_30:
(Start: 6 @19002 has 2 MA's), (Start: 7 @19005 has 3 MA's), (Start: 29 @19056 has 1 MA's), (45, 19128), (59, 19167), (73, 19221), (74, 19227), (85, 19293), (93, 19335), (95, 19341), (100, 19371),

Gene: Ajin_24 Start: 12379, Stop: 12810, Start Num: 15
Candidate Starts for Ajin_24:
(Start: 13 @12376 has 2 MA's), (Start: 15 @12379 has 42 MA's), (Start: 17 @12385 has 43 MA's), (19, 12394), (31, 12427), (44, 12487), (55, 12520), (60, 12535), (61, 12538), (70, 12580), (79, 12637), (86, 12667), (90, 12685), (97, 12718), (103, 12769), (107, 12784),

Gene: Alephilan_19 Start: 13971, Stop: 14399, Start Num: 17
Candidate Starts for Alephilan_19:
(16, 13968), (Start: 17 @13971 has 43 MA's), (25, 13995), (53, 14100), (64, 14145), (66, 14148), (69, 14166), (73, 14181), (85, 14253), (99, 14310), (100, 14328),

Gene: Alyssamiracle_20 Start: 12378, Stop: 12806, Start Num: 17
Candidate Starts for Alyssamiracle_20:
(16, 12375), (Start: 17 @12378 has 43 MA's), (53, 12507), (64, 12552), (66, 12555), (69, 12573), (73, 12588), (85, 12660), (99, 12717), (100, 12735),

Gene: AmandaPanda_28 Start: 15577, Stop: 15999, Start Num: 6
Candidate Starts for AmandaPanda_28:

(Start: 6 @15577 has 2 MA's), (9, 15589), (12, 15592), (27, 15622), (52, 15718), (57, 15730), (71, 15766), (82, 15826), (93, 15889), (108, 15973), (109, 15976), (112, 15994),

Gene: Anakin_23 Start: 12391, Stop: 12819, Start Num: 15
Candidate Starts for Anakin_23:
(Start: 15 @12391 has 42 MA's), (51, 12517), (60, 12544), (61, 12547), (62, 12553), (88, 12688), (96, 12724),

Gene: AnnaSerena_23 Start: 12400, Stop: 12828, Start Num: 15
Candidate Starts for AnnaSerena_23:
(Start: 15 @12400 has 42 MA's), (51, 12526), (60, 12553), (61, 12556), (62, 12562), (88, 12697), (96, 12733),

Gene: Annapurna_22 Start: 11600, Stop: 12028, Start Num: 15
Candidate Starts for Annapurna_22:
(Start: 15 @11600 has 42 MA's), (44, 11705), (51, 11726), (55, 11738), (62, 11762), (85, 11882), (90, 11903),

Gene: Apeppi_19 Start: 14093, Stop: 14521, Start Num: 17
Candidate Starts for Apeppi_19:
(Start: 17 @14093 has 43 MA's), (25, 14117), (53, 14222), (64, 14267), (73, 14303), (76, 14321), (85, 14375), (99, 14432), (100, 14450),

Gene: Artiphact_23 Start: 12392, Stop: 12820, Start Num: 15
Candidate Starts for Artiphact_23:
(Start: 15 @12392 has 42 MA's), (51, 12518), (60, 12545), (61, 12548), (62, 12554), (88, 12689), (96, 12725),

Gene: Astralis_19 Start: 12378, Stop: 12806, Start Num: 17
Candidate Starts for Astralis_19:
(16, 12375), (Start: 17 @12378 has 43 MA's), (53, 12507), (64, 12552), (66, 12555), (69, 12573), (73, 12588), (85, 12660), (99, 12717), (100, 12735),

Gene: Avian_19 Start: 12378, Stop: 12806, Start Num: 17
Candidate Starts for Avian_19:
(16, 12375), (Start: 17 @12378 has 43 MA's), (53, 12507), (64, 12552), (66, 12555), (69, 12573), (73, 12588), (85, 12660), (99, 12717), (100, 12735),

Gene: Barnyard_27 Start: 15178, Stop: 15603, Start Num: 6
Candidate Starts for Barnyard_27:
(Start: 6 @15178 has 2 MA's), (30, 15232), (57, 15331), (71, 15367), (74, 15382), (100, 15526), (108, 15574), (109, 15577), (112, 15595),

Gene: Beckerton_20 Start: 13898, Stop: 14365, Start Num: 4
Candidate Starts for Beckerton_20:
(Start: 4 @13898 has 11 MA's), (Start: 6 @13916 has 2 MA's), (33, 13985), (35, 13991), (63, 14087), (93, 14246), (95, 14252), (100, 14282), (108, 14330),

Gene: Beyoncage_16 Start: 9866, Stop: 10276, Start Num: 11
Candidate Starts for Beyoncage_16:
(Start: 11 @9866 has 8 MA's), (22, 9881), (39, 9944), (42, 9962), (58, 9998), (72, 10058), (87, 10145), (93, 10178), (106, 10253), (108, 10262),

Gene: BirthdayBoy_22 Start: 14824, Stop: 15252, Start Num: 17
Candidate Starts for BirthdayBoy_22:
(16, 14821), (Start: 17 @14824 has 43 MA's), (53, 14953), (64, 14998), (66, 15001), (69, 15019), (73, 15034), (85, 15106), (99, 15163), (100, 15181),

Gene: BiteSize_16 Start: 9866, Stop: 10276, Start Num: 11
Candidate Starts for BiteSize_16:
(Start: 11 @9866 has 8 MA's), (22, 9881), (39, 9944), (42, 9962), (58, 9998), (72, 10058), (87, 10145), (93, 10178), (106, 10253), (108, 10262),

Gene: BobtimousPrime_22 Start: 13818, Stop: 14276, Start Num: 4
Candidate Starts for BobtimousPrime_22:
(Start: 4 @13818 has 11 MA's), (Start: 6 @13836 has 2 MA's), (33, 13905), (35, 13911), (63, 14007), (93, 14166), (95, 14172), (100, 14202), (108, 14250),

Gene: Bramble_24 Start: 12344, Stop: 12775, Start Num: 15
Candidate Starts for Bramble_24:
(Start: 13 @12341 has 2 MA's), (Start: 15 @12344 has 42 MA's), (Start: 17 @12350 has 43 MA's), (19, 12359), (31, 12392), (44, 12452), (55, 12485), (60, 12500), (61, 12503), (70, 12545), (79, 12602), (86, 12632), (90, 12650), (97, 12683), (103, 12734), (107, 12749),

Gene: Butterscotch_21 Start: 13548, Stop: 13967, Start Num: 18
Candidate Starts for Butterscotch_21:
(Start: 18 @13548 has 20 MA's), (25, 13563), (35, 13602), (49, 13659), (56, 13680), (66, 13716), (70, 13737), (85, 13821), (93, 13863), (108, 13947),

Gene: Candle_21 Start: 13912, Stop: 14340, Start Num: 10
Candidate Starts for Candle_21:
(5, 13891), (Start: 10 @13912 has 14 MA's), (Start: 17 @13927 has 43 MA's), (33, 13987), (48, 14044), (84, 14179), (96, 14242), (101, 14272),

Gene: Cborch11_21 Start: 13361, Stop: 13819, Start Num: 4
Candidate Starts for Cborch11_21:
(Start: 4 @13361 has 11 MA's), (Start: 6 @13379 has 2 MA's), (33, 13448), (35, 13454), (63, 13550), (93, 13709), (95, 13715), (100, 13745), (108, 13793),

Gene: Charminar_19 Start: 12378, Stop: 12806, Start Num: 17
Candidate Starts for Charminar_19:
(16, 12375), (Start: 17 @12378 has 43 MA's), (53, 12507), (64, 12552), (66, 12555), (69, 12573), (73, 12588), (85, 12660), (99, 12717), (100, 12735),

Gene: Chill_22 Start: 13554, Stop: 13973, Start Num: 18
Candidate Starts for Chill_22:
(Start: 18 @13554 has 20 MA's), (25, 13569), (35, 13608), (49, 13665), (56, 13686), (66, 13722), (70, 13743), (85, 13827), (93, 13869), (108, 13953),

Gene: Chivey_22 Start: 11593, Stop: 12021, Start Num: 15
Candidate Starts for Chivey_22:
(Start: 15 @11593 has 42 MA's), (44, 11698), (51, 11719), (55, 11731), (61, 11749), (62, 11755), (75, 11812), (85, 11875), (90, 11896),

Gene: CoolCookie_23 Start: 12398, Stop: 12826, Start Num: 15
Candidate Starts for CoolCookie_23:

(Start: 15 @12398 has 42 MA's), (51, 12524), (60, 12551), (61, 12554), (62, 12560), (88, 12695), (96, 12731),

Gene: Crestdrop_22 Start: 11467, Stop: 11895, Start Num: 15
Candidate Starts for Crestdrop_22:
(Start: 15 @11467 has 42 MA's), (44, 11572), (51, 11593), (55, 11605), (62, 11629), (85, 11749), (90, 11770),

Gene: Cuke_14 Start: 9111, Stop: 9524, Start Num: 10
Candidate Starts for Cuke_14:
(Start: 10 @9111 has 14 MA's), (48, 9243), (65, 9282), (67, 9294), (76, 9330), (80, 9360), (98, 9441), (108, 9510),

Gene: Cybele_23 Start: 12368, Stop: 12796, Start Num: 15
Candidate Starts for Cybele_23:
(Start: 15 @12368 has 42 MA's), (51, 12494), (60, 12521), (61, 12524), (62, 12530), (88, 12665), (96, 12701),

Gene: Damien_20 Start: 13360, Stop: 13827, Start Num: 4
Candidate Starts for Damien_20:
(Start: 4 @13360 has 11 MA's), (Start: 6 @13378 has 2 MA's), (33, 13447), (35, 13453), (63, 13549), (93, 13708), (95, 13714), (100, 13744), (108, 13792),

Gene: DannyDe_22 Start: 11585, Stop: 12013, Start Num: 15
Candidate Starts for DannyDe_22:
(Start: 15 @11585 has 42 MA's), (39, 11666), (44, 11690), (51, 11711), (55, 11723), (61, 11741), (62, 11747), (75, 11804), (85, 11867), (90, 11888),

Gene: Dauntless_22 Start: 12110, Stop: 12538, Start Num: 15
Candidate Starts for Dauntless_22:
(Start: 15 @12110 has 42 MA's), (44, 12215), (51, 12236), (55, 12248), (62, 12272), (85, 12392), (90, 12413),

Gene: DaviePasture_21 Start: 14581, Stop: 15009, Start Num: 17
Candidate Starts for DaviePasture_21:
(16, 14578), (Start: 17 @14581 has 43 MA's), (25, 14605), (53, 14710), (64, 14755), (66, 14758), (69, 14776), (73, 14791), (85, 14863), (99, 14920), (100, 14938),

Gene: Delton_21 Start: 13560, Stop: 13979, Start Num: 18
Candidate Starts for Delton_21:
(Start: 18 @13560 has 20 MA's), (25, 13575), (35, 13614), (49, 13671), (56, 13692), (66, 13728), (70, 13749), (85, 13833), (93, 13875), (108, 13959),

Gene: Demikore_28 Start: 16743, Stop: 17144, Start Num: 14
Candidate Starts for Demikore_28:
(Start: 14 @16743 has 4 MA's), (38, 16812), (50, 16857), (54, 16866), (70, 16908), (73, 16920), (81, 16971), (86, 16995), (90, 17013), (108, 17118), (112, 17139),

Gene: Djokovic_16 Start: 9866, Stop: 10276, Start Num: 11
Candidate Starts for Djokovic_16:
(Start: 11 @9866 has 8 MA's), (22, 9881), (39, 9944), (42, 9962), (58, 9998), (72, 10058), (87, 10145), (93, 10178), (106, 10253), (108, 10262),

Gene: DoobyDoo_20 Start: 13758, Stop: 14186, Start Num: 17
Candidate Starts for DoobyDoo_20:
(16, 13755), (Start: 17 @13758 has 43 MA's), (53, 13887), (64, 13932), (66, 13935), (69, 13953), (73, 13968), (85, 14040), (99, 14097), (100, 14115),

Gene: DrLupo_29 Start: 15577, Stop: 15999, Start Num: 6
Candidate Starts for DrLupo_29:
(Start: 6 @15577 has 2 MA's), (9, 15589), (12, 15592), (27, 15622), (52, 15718), (57, 15730), (71, 15766), (82, 15826), (93, 15889), (108, 15973), (109, 15976), (112, 15994),

Gene: DumpTruck_20 Start: 14012, Stop: 14440, Start Num: 17
Candidate Starts for DumpTruck_20:
(Start: 17 @14012 has 43 MA's), (53, 14141), (64, 14186), (66, 14189), (83, 14279), (85, 14294), (99, 14351),

Gene: Erudite_22 Start: 12110, Stop: 12538, Start Num: 15
Candidate Starts for Erudite_22:
(Start: 15 @12110 has 42 MA's), (44, 12215), (51, 12236), (55, 12248), (62, 12272), (85, 12392), (90, 12413),

Gene: Erutan_21 Start: 14271, Stop: 14699, Start Num: 17
Candidate Starts for Erutan_21:
(16, 14268), (Start: 17 @14271 has 43 MA's), (53, 14400), (64, 14445), (66, 14448), (69, 14466), (73, 14481), (85, 14553), (99, 14610), (100, 14628),

Gene: FountainFog_22 Start: 11719, Stop: 12147, Start Num: 15
Candidate Starts for FountainFog_22:
(Start: 15 @11719 has 42 MA's), (51, 11845), (60, 11872), (61, 11875), (62, 11881), (88, 12016), (96, 12052), (103, 12106),

Gene: Fowlmouth_15 Start: 9282, Stop: 9695, Start Num: 10
Candidate Starts for Fowlmouth_15:
(Start: 10 @9282 has 14 MA's), (27, 9327), (47, 9411), (65, 9453), (67, 9465), (71, 9474), (93, 9597), (108, 9681),

Gene: FreddieHg_22 Start: 11609, Stop: 12037, Start Num: 15
Candidate Starts for FreddieHg_22:
(Start: 15 @11609 has 42 MA's), (44, 11714), (51, 11735), (55, 11747), (61, 11765), (62, 11771), (75, 11828), (85, 11891), (90, 11912),

Gene: Fulcrum_22 Start: 14804, Stop: 15232, Start Num: 17
Candidate Starts for Fulcrum_22:
(16, 14801), (Start: 17 @14804 has 43 MA's), (53, 14933), (64, 14978), (66, 14981), (69, 14999), (73, 15014), (85, 15086), (99, 15143), (100, 15161),

Gene: GOATification_22 Start: 14804, Stop: 15232, Start Num: 17
Candidate Starts for GOATification_22:
(16, 14801), (Start: 17 @14804 has 43 MA's), (53, 14933), (64, 14978), (66, 14981), (69, 14999), (73, 15014), (85, 15086), (99, 15143), (100, 15161),

Gene: Genamy16_20 Start: 12378, Stop: 12806, Start Num: 17
Candidate Starts for Genamy16_20:

(16, 12375), (Start: 17 @12378 has 43 MA's), (53, 12507), (64, 12552), (66, 12555), (69, 12573), (73, 12588), (85, 12660), (99, 12717), (100, 12735),

Gene: Gibbin_22 Start: 14864, Stop: 15292, Start Num: 17
Candidate Starts for Gibbin_22:
(16, 14861), (Start: 17 @14864 has 43 MA's), (53, 14993), (64, 15038), (66, 15041), (69, 15059), (73, 15074), (85, 15146), (99, 15203), (100, 15221),

Gene: Gilda_23 Start: 12392, Stop: 12820, Start Num: 15
Candidate Starts for Gilda_23:
(Start: 15 @12392 has 42 MA's), (51, 12518), (60, 12545), (61, 12548), (62, 12554), (88, 12689), (96, 12725),

Gene: Gimesa_22 Start: 13722, Stop: 14150, Start Num: 10
Candidate Starts for Gimesa_22:
(5, 13701), (Start: 10 @13722 has 14 MA's), (Start: 17 @13737 has 43 MA's), (33, 13797), (48, 13854), (84, 13989), (96, 14052), (101, 14082),

Gene: Giuseppe_21 Start: 13540, Stop: 13959, Start Num: 18
Candidate Starts for Giuseppe_21:
(Start: 18 @13540 has 20 MA's), (25, 13555), (35, 13594), (49, 13651), (56, 13672), (66, 13708), (70, 13729), (85, 13813), (93, 13855), (108, 13939),

Gene: GretelLyn_21 Start: 15138, Stop: 15566, Start Num: 17
Candidate Starts for GretelLyn_21:
(16, 15135), (Start: 17 @15138 has 43 MA's), (53, 15267), (64, 15312), (66, 15315), (69, 15333), (73, 15348), (85, 15420), (99, 15477), (100, 15495),

Gene: Gumball_20 Start: 13498, Stop: 13917, Start Num: 18
Candidate Starts for Gumball_20:
(Start: 18 @13498 has 20 MA's), (25, 13513), (35, 13552), (49, 13609), (56, 13630), (66, 13666), (70, 13687), (85, 13771), (93, 13813), (108, 13897),

Gene: Hager_24 Start: 11963, Stop: 12391, Start Num: 15
Candidate Starts for Hager_24:
(Start: 15 @11963 has 42 MA's), (51, 12089), (60, 12116), (61, 12119), (62, 12125), (88, 12260), (90, 12266), (96, 12296), (103, 12350),

Gene: Haunter_23 Start: 11805, Stop: 12233, Start Num: 15
Candidate Starts for Haunter_23:
(Start: 15 @11805 has 42 MA's), (51, 11931), (60, 11958), (61, 11961), (62, 11967), (88, 12102), (96, 12138), (103, 12192),

Gene: Hawkeye_23 Start: 13446, Stop: 13865, Start Num: 20
Candidate Starts for Hawkeye_23:
(Start: 20 @13446 has 1 MA's), (24, 13458), (36, 13503), (49, 13557), (70, 13635), (72, 13641), (73, 13647), (86, 13722), (90, 13740), (94, 13764), (96, 13770), (98, 13776), (105, 13833), (108, 13845), (109, 13848), (111, 13857),

Gene: Helpful_22 Start: 13548, Stop: 13967, Start Num: 18
Candidate Starts for Helpful_22:
(Start: 18 @13548 has 20 MA's), (25, 13563), (35, 13602), (49, 13659), (56, 13680), (66, 13716), (70, 13737), (85, 13821), (93, 13863), (108, 13947),

Gene: Hiddenleaf_22 Start: 11593, Stop: 12021, Start Num: 15
Candidate Starts for Hiddenleaf_22:
(Start: 15 @11593 has 42 MA's), (44, 11698), (51, 11719), (55, 11731), (61, 11749), (62, 11755), (75, 11812), (85, 11875), (90, 11896),

Gene: Huwbert_44 Start: 22718, Stop: 23137, Start Num: 17
Candidate Starts for Huwbert_44:
(Start: 17 @22718 has 43 MA's), (28, 22748), (33, 22775), (43, 22817), (99, 23051), (108, 23117),

Gene: Indlulamithi_18 Start: 11372, Stop: 11803, Start Num: 10
Candidate Starts for Indlulamithi_18:
(Start: 10 @11372 has 14 MA's), (33, 11447), (65, 11543), (76, 11591), (87, 11654), (89, 11663),

Gene: JDawG_22 Start: 12175, Stop: 12603, Start Num: 15
Candidate Starts for JDawG_22:
(Start: 15 @12175 has 42 MA's), (44, 12280), (51, 12301), (55, 12313), (62, 12337), (85, 12457), (90, 12478),

Gene: Jalebi_21 Start: 15314, Stop: 15742, Start Num: 17
Candidate Starts for Jalebi_21:
(16, 15311), (Start: 17 @15314 has 43 MA's), (53, 15443), (64, 15488), (66, 15491), (69, 15509), (73, 15524), (85, 15596), (99, 15653), (100, 15671),

Gene: Jamemuya19_19 Start: 12378, Stop: 12806, Start Num: 17
Candidate Starts for Jamemuya19_19:
(16, 12375), (Start: 17 @12378 has 43 MA's), (53, 12507), (64, 12552), (66, 12555), (69, 12573), (73, 12588), (85, 12660), (99, 12717), (100, 12735),

Gene: JingleBells_22 Start: 11674, Stop: 12102, Start Num: 15
Candidate Starts for JingleBells_22:
(Start: 15 @11674 has 42 MA's), (44, 11779), (51, 11800), (55, 11812), (61, 11830), (62, 11836), (75, 11893), (85, 11956), (90, 11977),

Gene: Karate_22 Start: 11813, Stop: 12241, Start Num: 15
Candidate Starts for Karate_22:
(Start: 15 @11813 has 42 MA's), (51, 11939), (60, 11966), (61, 11969), (62, 11975), (88, 12110), (96, 12146), (103, 12200),

Gene: Kate_23 Start: 12400, Stop: 12828, Start Num: 15
Candidate Starts for Kate_23:
(Start: 15 @12400 has 42 MA's), (51, 12526), (60, 12553), (61, 12556), (62, 12562), (88, 12697), (96, 12733),

Gene: Konstantine_25 Start: 14562, Stop: 15029, Start Num: 4
Candidate Starts for Konstantine_25:
(Start: 4 @14562 has 11 MA's), (Start: 6 @14580 has 2 MA's), (33, 14649), (35, 14655), (63, 14751), (93, 14910), (95, 14916), (100, 14946), (108, 14994),

Gene: Kors_24 Start: 12425, Stop: 12856, Start Num: 15
Candidate Starts for Kors_24:
(Start: 13 @12422 has 2 MA's), (Start: 15 @12425 has 42 MA's), (Start: 17 @12431 has 43 MA's), (19, 12440), (31, 12473), (44, 12533), (55, 12566), (60, 12581), (61, 12584), (70, 12626), (79, 12683), (86,

12713), (90, 12731), (97, 12764), (103, 12815), (107, 12830),

Gene: Krampus_23 Start: 12398, Stop: 12826, Start Num: 15
Candidate Starts for Krampus_23:
(Start: 15 @12398 has 42 MA's), (51, 12524), (60, 12551), (61, 12554), (62, 12560), (88, 12695), (96, 12731),

Gene: Labelle_27 Start: 16745, Stop: 17146, Start Num: 14
Candidate Starts for Labelle_27:
(Start: 14 @16745 has 4 MA's), (21, 16757), (38, 16814), (50, 16859), (54, 16868), (70, 16910), (73, 16922), (81, 16973), (86, 16997), (90, 17015), (108, 17120), (112, 17141),

Gene: Lambo_21 Start: 14808, Stop: 15236, Start Num: 17
Candidate Starts for Lambo_21:
(16, 14805), (Start: 17 @14808 has 43 MA's), (53, 14937), (64, 14982), (66, 14985), (69, 15003), (73, 15018), (85, 15090), (99, 15147), (100, 15165),

Gene: LavAbarElk_19 Start: 13241, Stop: 13669, Start Num: 17
Candidate Starts for LavAbarElk_19:
(16, 13238), (Start: 17 @13241 has 43 MA's), (25, 13265), (53, 13370), (64, 13415), (66, 13418), (69, 13436), (73, 13451), (85, 13523), (99, 13580), (100, 13598),

Gene: Leopard_30 Start: 19290, Stop: 19724, Start Num: 7
Candidate Starts for Leopard_30:
(Start: 6 @19287 has 2 MA's), (Start: 7 @19290 has 3 MA's), (Start: 29 @19341 has 1 MA's), (45, 19413), (59, 19452), (73, 19506), (74, 19512), (85, 19578), (93, 19620), (95, 19626), (100, 19656),

Gene: Lila22_21 Start: 14762, Stop: 15190, Start Num: 17
Candidate Starts for Lila22_21:
(16, 14759), (Start: 17 @14762 has 43 MA's), (53, 14891), (64, 14936), (66, 14939), (69, 14957), (73, 14972), (85, 15044), (99, 15101), (100, 15119),

Gene: LilyPad_17 Start: 10585, Stop: 10992, Start Num: 11
Candidate Starts for LilyPad_17:
(Start: 11 @10585 has 8 MA's), (42, 10678), (68, 10762), (70, 10768), (77, 10816), (87, 10861), (96, 10903), (108, 10978),

Gene: LittleFella_18 Start: 12477, Stop: 12860, Start Num: 18
Candidate Starts for LittleFella_18:
(1, 12273), (Start: 18 @12477 has 20 MA's), (Start: 29 @12495 has 1 MA's), (34, 12516), (39, 12528), (42, 12546), (78, 12693), (80, 12699), (85, 12723), (91, 12756), (92, 12759), (108, 12846), (110, 12852),

Gene: LordBart_24 Start: 12341, Stop: 12772, Start Num: 15
Candidate Starts for LordBart_24:
(Start: 13 @12338 has 2 MA's), (Start: 15 @12341 has 42 MA's), (Start: 17 @12347 has 43 MA's), (19, 12356), (31, 12389), (44, 12449), (55, 12482), (60, 12497), (61, 12500), (70, 12542), (79, 12599), (86, 12629), (90, 12647), (97, 12680), (103, 12731), (107, 12746),

Gene: LuckyLeo_20 Start: 14093, Stop: 14521, Start Num: 17
Candidate Starts for LuckyLeo_20:
(Start: 17 @14093 has 43 MA's), (25, 14117), (53, 14222), (64, 14267), (73, 14303), (76, 14321), (85, 14375), (99, 14432), (100, 14450),

Gene: Madi_16 Start: 9866, Stop: 10276, Start Num: 11
Candidate Starts for Madi_16:
(Start: 11 @9866 has 8 MA's), (22, 9881), (39, 9944), (42, 9962), (58, 9998), (72, 10058), (87, 10145), (93, 10178), (106, 10253), (108, 10262),

Gene: Madruga_26 Start: 16414, Stop: 16815, Start Num: 14
Candidate Starts for Madruga_26:
(Start: 14 @16414 has 4 MA's), (23, 16429), (38, 16483), (50, 16528), (70, 16579), (73, 16591), (81, 16642), (86, 16666), (90, 16684), (108, 16789), (112, 16810),

Gene: Megatron06_22 Start: 13895, Stop: 14353, Start Num: 4
Candidate Starts for Megatron06_22:
(Start: 4 @13895 has 11 MA's), (Start: 6 @13913 has 2 MA's), (33, 13982), (35, 13988), (63, 14084), (93, 14243), (95, 14249), (100, 14279), (108, 14327),

Gene: Mima20_20 Start: 14491, Stop: 14919, Start Num: 17
Candidate Starts for Mima20_20:
(16, 14488), (Start: 17 @14491 has 43 MA's), (25, 14515), (53, 14620), (64, 14665), (66, 14668), (69, 14686), (73, 14701), (85, 14773), (99, 14830), (100, 14848),

Gene: MoiGyank_23 Start: 15175, Stop: 15603, Start Num: 17
Candidate Starts for MoiGyank_23:
(16, 15172), (Start: 17 @15175 has 43 MA's), (53, 15304), (64, 15349), (66, 15352), (69, 15370), (73, 15385), (85, 15457), (99, 15514), (100, 15532),

Gene: MontyDev_21 Start: 13570, Stop: 13998, Start Num: 10
Candidate Starts for MontyDev_21:
(5, 13549), (Start: 10 @13570 has 14 MA's), (Start: 17 @13585 has 43 MA's), (33, 13645), (48, 13702), (84, 13837), (96, 13900), (101, 13930),

Gene: Mopey_21 Start: 13548, Stop: 13967, Start Num: 18
Candidate Starts for Mopey_21:
(Start: 18 @13548 has 20 MA's), (25, 13563), (35, 13602), (49, 13659), (56, 13680), (66, 13716), (70, 13737), (85, 13821), (93, 13863), (108, 13947),

Gene: MortySmith_21 Start: 11572, Stop: 12000, Start Num: 15
Candidate Starts for MortySmith_21:
(Start: 15 @11572 has 42 MA's), (44, 11677), (51, 11698), (55, 11710), (62, 11734), (85, 11854), (90, 11875),

Gene: MrMiyagi_15 Start: 9282, Stop: 9695, Start Num: 10
Candidate Starts for MrMiyagi_15:
(Start: 10 @9282 has 14 MA's), (27, 9327), (47, 9411), (65, 9453), (67, 9465), (71, 9474), (93, 9597), (108, 9681),

Gene: NarutoRun_23 Start: 12391, Stop: 12819, Start Num: 15
Candidate Starts for NarutoRun_23:
(Start: 15 @12391 has 42 MA's), (51, 12517), (60, 12544), (61, 12547), (62, 12553), (88, 12688), (96, 12724),

Gene: Neptune_23 Start: 12368, Stop: 12796, Start Num: 15
Candidate Starts for Neptune_23:

(Start: 15 @12368 has 42 MA's), (51, 12494), (60, 12521), (61, 12524), (62, 12530), (88, 12665), (96, 12701),

Gene: Nettle_20 Start: 15038, Stop: 15466, Start Num: 17
Candidate Starts for Nettle_20:
(16, 15035), (Start: 17 @15038 has 43 MA's), (53, 15167), (64, 15212), (66, 15215), (69, 15233), (73, 15248), (85, 15320), (99, 15377), (100, 15395),

Gene: Nilo_22 Start: 13909, Stop: 14337, Start Num: 10
Candidate Starts for Nilo_22:
(5, 13888), (Start: 10 @13909 has 14 MA's), (Start: 17 @13924 has 43 MA's), (33, 13984), (48, 14041), (84, 14176), (96, 14239), (101, 14269),

Gene: Nish23_21 Start: 13361, Stop: 13819, Start Num: 4
Candidate Starts for Nish23_21:
(Start: 4 @13361 has 11 MA's), (Start: 6 @13379 has 2 MA's), (33, 13448), (35, 13454), (63, 13550), (93, 13709), (95, 13715), (100, 13745), (108, 13793),

Gene: NorManre_22 Start: 14370, Stop: 14798, Start Num: 17
Candidate Starts for NorManre_22:
(16, 14367), (Start: 17 @14370 has 43 MA's), (53, 14499), (64, 14544), (66, 14547), (69, 14565), (73, 14580), (85, 14652), (99, 14709), (100, 14727),

Gene: Nova_21 Start: 13975, Stop: 14394, Start Num: 18
Candidate Starts for Nova_21:
(Start: 18 @13975 has 20 MA's), (25, 13990), (35, 14029), (49, 14086), (56, 14107), (66, 14143), (70, 14164), (85, 14248), (93, 14290), (108, 14374),

Gene: NovaSharks_20 Start: 12378, Stop: 12806, Start Num: 17
Candidate Starts for NovaSharks_20:
(16, 12375), (Start: 17 @12378 has 43 MA's), (53, 12507), (64, 12552), (66, 12555), (69, 12573), (73, 12588), (85, 12660), (99, 12717), (100, 12735),

Gene: Oaker_20 Start: 13619, Stop: 14077, Start Num: 4
Candidate Starts for Oaker_20:
(Start: 4 @13619 has 11 MA's), (Start: 6 @13637 has 2 MA's), (33, 13706), (35, 13712), (63, 13808), (93, 13967), (95, 13973), (100, 14003), (108, 14051),

Gene: OhDear_23 Start: 12397, Stop: 12825, Start Num: 15
Candidate Starts for OhDear_23:
(Start: 15 @12397 has 42 MA's), (51, 12523), (60, 12550), (61, 12553), (62, 12559), (88, 12694), (96, 12730),

Gene: Onyinye_31 Start: 19171, Stop: 19605, Start Num: 7
Candidate Starts for Onyinye_31:
(Start: 6 @19168 has 2 MA's), (Start: 7 @19171 has 3 MA's), (Start: 29 @19222 has 1 MA's), (45, 19294), (59, 19333), (73, 19387), (74, 19393), (85, 19459), (93, 19501), (95, 19507), (100, 19537),

Gene: OtterstedtS21_21 Start: 14460, Stop: 14888, Start Num: 17
Candidate Starts for OtterstedtS21_21:
(16, 14457), (Start: 17 @14460 has 43 MA's), (53, 14589), (64, 14634), (66, 14637), (69, 14655), (73, 14670), (85, 14742), (99, 14799), (100, 14817),

Gene: OverHedge_23 Start: 12365, Stop: 12793, Start Num: 15
Candidate Starts for OverHedge_23:
(Start: 15 @12365 has 42 MA's), (51, 12491), (60, 12518), (61, 12521), (62, 12527), (88, 12662), (96, 12698),

Gene: PBI1_22 Start: 13479, Stop: 13898, Start Num: 18
Candidate Starts for PBI1_22:
(Start: 18 @13479 has 20 MA's), (25, 13494), (35, 13533), (49, 13590), (56, 13611), (66, 13647), (70, 13668), (85, 13752), (93, 13794), (108, 13878),

Gene: PLot_22 Start: 13551, Stop: 13970, Start Num: 18
Candidate Starts for PLot_22:
(Start: 18 @13551 has 20 MA's), (25, 13566), (35, 13605), (49, 13662), (56, 13683), (66, 13719), (70, 13740), (85, 13824), (93, 13866), (108, 13950),

Gene: Papyrus_21 Start: 13571, Stop: 13999, Start Num: 10
Candidate Starts for Papyrus_21:
(5, 13550), (Start: 10 @13571 has 14 MA's), (Start: 17 @13586 has 43 MA's), (33, 13646), (48, 13703), (84, 13838), (96, 13901), (101, 13931),

Gene: ParvusTarda_21 Start: 13942, Stop: 14370, Start Num: 17
Candidate Starts for ParvusTarda_21:
(16, 13939), (Start: 17 @13942 has 43 MA's), (53, 14071), (64, 14116), (66, 14119), (69, 14137), (73, 14152), (85, 14224), (99, 14281), (100, 14299),

Gene: Patience_28 Start: 17304, Stop: 17705, Start Num: 14
Candidate Starts for Patience_28:
(Start: 14 @17304 has 4 MA's), (38, 17373), (50, 17418), (54, 17427), (70, 17469), (73, 17481), (81, 17532), (86, 17556), (90, 17574), (108, 17679), (112, 17700),

Gene: Patos_22 Start: 14370, Stop: 14798, Start Num: 17
Candidate Starts for Patos_22:
(16, 14367), (Start: 17 @14370 has 43 MA's), (53, 14499), (64, 14544), (66, 14547), (69, 14565), (73, 14580), (85, 14652), (99, 14709), (100, 14727),

Gene: Penelope2018_21 Start: 13548, Stop: 13967, Start Num: 18
Candidate Starts for Penelope2018_21:
(Start: 18 @13548 has 20 MA's), (25, 13563), (35, 13602), (49, 13659), (56, 13680), (66, 13716), (70, 13737), (85, 13821), (93, 13863), (108, 13947),

Gene: Phalaborwa_21 Start: 13581, Stop: 14000, Start Num: 18
Candidate Starts for Phalaborwa_21:
(Start: 18 @13581 has 20 MA's), (25, 13596), (35, 13635), (40, 13656), (56, 13713), (66, 13749), (73, 13782), (87, 13863), (93, 13896), (101, 13935), (108, 13980),

Gene: Pharpay_23 Start: 12413, Stop: 12841, Start Num: 15
Candidate Starts for Pharpay_23:
(Start: 15 @12413 has 42 MA's), (51, 12539), (60, 12566), (61, 12569), (62, 12575), (88, 12710), (96, 12746),

Gene: Phreeze_20 Start: 13360, Stop: 13818, Start Num: 4
Candidate Starts for Phreeze_20:

(Start: 4 @13360 has 11 MA's), (Start: 6 @13378 has 2 MA's), (33, 13447), (35, 13453), (63, 13549), (93, 13708), (95, 13714), (100, 13744), (108, 13792),

Gene: PhunaPhoke_23 Start: 12386, Stop: 12814, Start Num: 15
Candidate Starts for PhunaPhoke_23:
(Start: 15 @12386 has 42 MA's), (51, 12512), (60, 12539), (61, 12542), (62, 12548), (88, 12683), (96, 12719),

Gene: Potty_23 Start: 12391, Stop: 12819, Start Num: 15
Candidate Starts for Potty_23:
(Start: 15 @12391 has 42 MA's), (51, 12517), (60, 12544), (61, 12547), (62, 12553), (88, 12688), (96, 12724),

Gene: Poultress_22 Start: 12164, Stop: 12592, Start Num: 15
Candidate Starts for Poultress_22:
(Start: 15 @12164 has 42 MA's), (51, 12290), (60, 12317), (61, 12320), (62, 12326), (88, 12461), (96, 12497),

Gene: Prager_21 Start: 13560, Stop: 13979, Start Num: 18
Candidate Starts for Prager_21:
(Start: 18 @13560 has 20 MA's), (25, 13575), (35, 13614), (49, 13671), (56, 13692), (66, 13728), (70, 13749), (85, 13833), (93, 13875), (108, 13959),

Gene: Predator_24 Start: 14885, Stop: 15343, Start Num: 4
Candidate Starts for Predator_24:
(Start: 4 @14885 has 11 MA's), (Start: 6 @14903 has 2 MA's), (8, 14909), (32, 14969), (35, 14978), (63, 15074), (69, 15104), (84, 15179), (89, 15209), (95, 15239), (96, 15242), (100, 15269), (108, 15317),

Gene: Puissant_21 Start: 13816, Stop: 14274, Start Num: 4
Candidate Starts for Puissant_21:
(Start: 4 @13816 has 11 MA's), (Start: 6 @13834 has 2 MA's), (Start: 18 @13858 has 20 MA's), (26, 13873), (33, 13903), (35, 13909), (63, 14005), (76, 14068), (95, 14170), (100, 14200), (108, 14248),

Gene: Pywacket_20 Start: 15299, Stop: 15727, Start Num: 17
Candidate Starts for Pywacket_20:
(16, 15296), (Start: 17 @15299 has 43 MA's), (53, 15428), (64, 15473), (66, 15476), (69, 15494), (73, 15509), (85, 15581), (99, 15638), (100, 15656),

Gene: Rachella_23 Start: 12394, Stop: 12822, Start Num: 15
Candidate Starts for Rachella_23:
(Start: 15 @12394 has 42 MA's), (51, 12520), (60, 12547), (61, 12550), (62, 12556), (88, 12691), (96, 12727),

Gene: Ranch_21 Start: 13308, Stop: 13736, Start Num: 17
Candidate Starts for Ranch_21:
(16, 13305), (Start: 17 @13308 has 43 MA's), (53, 13437), (64, 13482), (66, 13485), (69, 13503), (73, 13518), (85, 13590), (99, 13647), (100, 13665),

Gene: RazorC_19 Start: 12378, Stop: 12806, Start Num: 17
Candidate Starts for RazorC_19:
(16, 12375), (Start: 17 @12378 has 43 MA's), (53, 12507), (64, 12552), (66, 12555), (69, 12573), (73, 12588), (85, 12660), (99, 12717), (100, 12735),

Gene: Riduram_19 Start: 12348, Stop: 12776, Start Num: 17
Candidate Starts for Riduram_19:
(16, 12345), (Start: 17 @12348 has 43 MA's), (53, 12477), (64, 12522), (66, 12525), (69, 12543), (73, 12558), (85, 12630), (99, 12687), (100, 12705),

Gene: Rie18_23 Start: 11745, Stop: 12173, Start Num: 15
Candidate Starts for Rie18_23:
(Start: 15 @11745 has 42 MA's), (51, 11871), (60, 11898), (61, 11901), (62, 11907), (88, 12042), (90, 12048), (96, 12078), (103, 12132),

Gene: RikSengupta_24 Start: 12459, Stop: 12893, Start Num: 13
Candidate Starts for RikSengupta_24:
(Start: 13 @12459 has 2 MA's), (Start: 15 @12462 has 42 MA's), (Start: 17 @12468 has 43 MA's), (19, 12477), (31, 12510), (44, 12570), (55, 12603), (60, 12618), (61, 12621), (70, 12663), (79, 12720), (86, 12750), (90, 12768), (97, 12801), (103, 12852), (107, 12867),

Gene: Riparian_21 Start: 13370, Stop: 13798, Start Num: 10
Candidate Starts for Riparian_21:
(5, 13349), (Start: 10 @13370 has 14 MA's), (Start: 17 @13385 has 43 MA's), (33, 13445), (48, 13502), (84, 13637), (96, 13700), (101, 13730),

Gene: Rope_21 Start: 13562, Stop: 13990, Start Num: 10
Candidate Starts for Rope_21:
(5, 13541), (Start: 10 @13562 has 14 MA's), (Start: 17 @13577 has 43 MA's), (33, 13637), (48, 13694), (84, 13829), (96, 13892), (101, 13922),

Gene: Rota_20 Start: 14266, Stop: 14694, Start Num: 17
Candidate Starts for Rota_20:
(16, 14263), (Start: 17 @14266 has 43 MA's), (53, 14395), (64, 14440), (66, 14443), (69, 14461), (73, 14476), (85, 14548), (99, 14605), (100, 14623),

Gene: Rukungu_21 Start: 15007, Stop: 15435, Start Num: 17
Candidate Starts for Rukungu_21:
(16, 15004), (Start: 17 @15007 has 43 MA's), (53, 15136), (64, 15181), (66, 15184), (69, 15202), (73, 15217), (85, 15289), (99, 15346), (100, 15364),

Gene: Rumi_20 Start: 12378, Stop: 12806, Start Num: 17
Candidate Starts for Rumi_20:
(16, 12375), (Start: 17 @12378 has 43 MA's), (53, 12507), (64, 12552), (66, 12555), (69, 12573), (73, 12588), (85, 12660), (99, 12717), (100, 12735),

Gene: Sadboi_21 Start: 15138, Stop: 15566, Start Num: 17
Candidate Starts for Sadboi_21:
(16, 15135), (Start: 17 @15138 has 43 MA's), (53, 15267), (64, 15312), (66, 15315), (69, 15333), (73, 15348), (85, 15420), (99, 15477), (100, 15495),

Gene: SafetyGuy_23 Start: 12397, Stop: 12825, Start Num: 15
Candidate Starts for SafetyGuy_23:
(Start: 15 @12397 has 42 MA's), (51, 12523), (60, 12550), (61, 12553), (62, 12559), (88, 12694), (96, 12730),

Gene: Sampudon_21 Start: 15314, Stop: 15742, Start Num: 17

Candidate Starts for Sampudon_21:
(16, 15311), (Start: 17 @15314 has 43 MA's), (53, 15443), (64, 15488), (66, 15491), (69, 15509), (73, 15524), (85, 15596), (99, 15653), (100, 15671),

Gene: Send513_21 Start: 13912, Stop: 14340, Start Num: 10
Candidate Starts for Send513_21:
(5, 13891), (Start: 10 @13912 has 14 MA's), (Start: 17 @13927 has 43 MA's), (33, 13987), (48, 14044), (84, 14179), (96, 14242), (101, 14272),

Gene: Shrew_56 Start: 27170, Stop: 27589, Start Num: 17
Candidate Starts for Shrew_56:
(Start: 17 @27170 has 43 MA's), (28, 27200), (33, 27227), (37, 27239), (43, 27272), (46, 27284), (58, 27314), (85, 27443), (102, 27545),

Gene: Sienna_16 Start: 9866, Stop: 10276, Start Num: 11
Candidate Starts for Sienna_16:
(Start: 11 @9866 has 8 MA's), (22, 9881), (39, 9944), (42, 9962), (58, 9998), (72, 10058), (87, 10145), (93, 10178), (106, 10253), (108, 10262),

Gene: SilentWarrior_22 Start: 11601, Stop: 12029, Start Num: 15
Candidate Starts for SilentWarrior_22:
(Start: 15 @11601 has 42 MA's), (39, 11682), (44, 11706), (51, 11727), (55, 11739), (61, 11757), (62, 11763), (75, 11820), (85, 11883), (90, 11904),

Gene: SirHarley_20 Start: 13480, Stop: 13899, Start Num: 18
Candidate Starts for SirHarley_20:
(Start: 18 @13480 has 20 MA's), (25, 13495), (35, 13534), (49, 13591), (56, 13612), (66, 13648), (70, 13669), (85, 13753), (93, 13795), (108, 13879),

Gene: Snakehole_24 Start: 11690, Stop: 12118, Start Num: 15
Candidate Starts for Snakehole_24:
(Start: 15 @11690 has 42 MA's), (44, 11795), (51, 11816), (55, 11828), (61, 11846), (62, 11852), (75, 11909), (85, 11972), (90, 11993),

Gene: Sparcetus_24 Start: 12338, Stop: 12772, Start Num: 13
Candidate Starts for Sparcetus_24:
(Start: 13 @12338 has 2 MA's), (Start: 15 @12341 has 42 MA's), (Start: 17 @12347 has 43 MA's), (19, 12356), (31, 12389), (44, 12449), (55, 12482), (60, 12497), (61, 12500), (70, 12542), (79, 12599), (86, 12629), (90, 12647), (97, 12680), (103, 12731), (107, 12746),

Gene: Stormer_19 Start: 12378, Stop: 12806, Start Num: 17
Candidate Starts for Stormer_19:
(16, 12375), (Start: 17 @12378 has 43 MA's), (53, 12507), (64, 12552), (66, 12555), (69, 12573), (73, 12588), (85, 12660), (99, 12717), (100, 12735),

Gene: SuperSonics_27 Start: 16471, Stop: 16872, Start Num: 14
Candidate Starts for SuperSonics_27:
(Start: 14 @16471 has 4 MA's), (21, 16483), (38, 16540), (50, 16585), (54, 16594), (70, 16636), (73, 16648), (81, 16699), (86, 16723), (90, 16741), (108, 16846), (112, 16867),

Gene: SuperheroCarly_21 Start: 13410, Stop: 13829, Start Num: 18
Candidate Starts for SuperheroCarly_21:

(Start: 18 @13410 has 20 MA's), (25, 13425), (35, 13464), (49, 13521), (56, 13542), (66, 13578), (70, 13599), (85, 13683), (93, 13725), (108, 13809),

Gene: Suzy_17 Start: 11094, Stop: 11504, Start Num: 11
Candidate Starts for Suzy_17:
(Start: 11 @11094 has 8 MA's), (22, 11109), (39, 11172), (42, 11190), (53, 11214), (72, 11286), (77, 11328), (80, 11340), (93, 11406), (106, 11481), (108, 11490),

Gene: Tedro_23 Start: 11864, Stop: 12292, Start Num: 15
Candidate Starts for Tedro_23:
(Start: 15 @11864 has 42 MA's), (51, 11990), (60, 12017), (61, 12020), (62, 12026), (88, 12161), (96, 12197),

Gene: Terapin_16 Start: 9866, Stop: 10276, Start Num: 11
Candidate Starts for Terapin_16:
(Start: 11 @9866 has 8 MA's), (22, 9881), (39, 9944), (42, 9962), (58, 9998), (72, 10058), (87, 10145), (93, 10178), (106, 10253), (108, 10262),

Gene: Thoth_21 Start: 13545, Stop: 13964, Start Num: 18
Candidate Starts for Thoth_21:
(Start: 18 @13545 has 20 MA's), (25, 13560), (35, 13599), (49, 13656), (56, 13677), (66, 13713), (70, 13734), (85, 13818), (93, 13860), (108, 13944),

Gene: Thumb_20 Start: 13361, Stop: 13819, Start Num: 4
Candidate Starts for Thumb_20:
(Start: 4 @13361 has 11 MA's), (Start: 6 @13379 has 2 MA's), (33, 13448), (35, 13454), (63, 13550), (93, 13709), (95, 13715), (100, 13745), (108, 13793),

Gene: Tiggy93_23 Start: 12397, Stop: 12825, Start Num: 15
Candidate Starts for Tiggy93_23:
(Start: 15 @12397 has 42 MA's), (51, 12523), (60, 12550), (61, 12553), (62, 12559), (88, 12694), (96, 12730),

Gene: Tillicus_21 Start: 13687, Stop: 14115, Start Num: 17
Candidate Starts for Tillicus_21:
(Start: 17 @13687 has 43 MA's), (25, 13711), (53, 13816), (64, 13861), (73, 13897), (76, 13915), (85, 13969), (99, 14026), (100, 14044),

Gene: TinyMiny_24 Start: 12360, Stop: 12791, Start Num: 15
Candidate Starts for TinyMiny_24:
(Start: 13 @12357 has 2 MA's), (Start: 15 @12360 has 42 MA's), (Start: 17 @12366 has 43 MA's), (19, 12375), (31, 12408), (44, 12468), (55, 12501), (60, 12516), (61, 12519), (70, 12561), (79, 12618), (86, 12648), (90, 12666), (97, 12699), (103, 12750), (107, 12765),

Gene: Tongui_22 Start: 11737, Stop: 12165, Start Num: 15
Candidate Starts for Tongui_22:
(Start: 15 @11737 has 42 MA's), (51, 11863), (60, 11890), (61, 11893), (62, 11899), (88, 12034), (96, 12070), (103, 12124),

Gene: Triscuit_43 Start: 22633, Stop: 23052, Start Num: 17
Candidate Starts for Triscuit_43:
(Start: 17 @22633 has 43 MA's), (28, 22663), (33, 22690), (43, 22732), (99, 22966), (108, 23032),

Gene: Troll4_21 Start: 13549, Stop: 13968, Start Num: 18
Candidate Starts for Troll4_21:
(Start: 18 @13549 has 20 MA's), (25, 13564), (35, 13603), (49, 13660), (56, 13681), (66, 13717), (70, 13738), (85, 13822), (93, 13864), (108, 13948),

Gene: Visconti_21 Start: 13558, Stop: 13977, Start Num: 18
Candidate Starts for Visconti_21:
(Start: 18 @13558 has 20 MA's), (25, 13573), (35, 13612), (49, 13669), (56, 13690), (66, 13726), (70, 13747), (85, 13831), (93, 13873), (108, 13957),

Gene: WaldoWhy_22 Start: 13554, Stop: 13973, Start Num: 18
Candidate Starts for WaldoWhy_22:
(Start: 18 @13554 has 20 MA's), (25, 13569), (35, 13608), (49, 13665), (56, 13686), (66, 13722), (70, 13743), (85, 13827), (93, 13869), (108, 13953),

Gene: Weiss13_21 Start: 13602, Stop: 14030, Start Num: 10
Candidate Starts for Weiss13_21:
(5, 13581), (Start: 10 @13602 has 14 MA's), (Start: 17 @13617 has 43 MA's), (48, 13734), (84, 13869), (96, 13932), (101, 13962),

Gene: WinnieLou_24 Start: 12032, Stop: 12460, Start Num: 15
Candidate Starts for WinnieLou_24:
(Start: 15 @12032 has 42 MA's), (41, 12119), (51, 12158), (60, 12185), (61, 12188), (62, 12194), (88, 12329), (90, 12335), (96, 12365), (103, 12419),

Gene: Wojtek_20 Start: 14015, Stop: 14443, Start Num: 17
Candidate Starts for Wojtek_20:
(16, 14012), (Start: 17 @14015 has 43 MA's), (53, 14144), (64, 14189), (66, 14192), (69, 14210), (73, 14225), (85, 14297), (99, 14354), (100, 14372),

Gene: Wollypog_11 Start: 8956, Stop: 9348, Start Num: 29
Candidate Starts for Wollypog_11:
(2, 8746), (3, 8866), (Start: 29 @8956 has 1 MA's), (43, 9025), (55, 9061), (56, 9064), (73, 9133), (75, 9139), (87, 9211), (104, 9313),

Gene: Xenia2_21 Start: 14054, Stop: 14482, Start Num: 17
Candidate Starts for Xenia2_21:
(Start: 17 @14054 has 43 MA's), (53, 14183), (64, 14228), (66, 14231), (83, 14321), (85, 14336), (99, 14393),

Gene: Yelo_21 Start: 13912, Stop: 14340, Start Num: 10
Candidate Starts for Yelo_21:
(5, 13891), (Start: 10 @13912 has 14 MA's), (Start: 17 @13927 has 43 MA's), (33, 13987), (48, 14044), (84, 14179), (96, 14242), (101, 14272),

Gene: Yikes_22 Start: 15399, Stop: 15827, Start Num: 17
Candidate Starts for Yikes_22:
(16, 15396), (Start: 17 @15399 has 43 MA's), (53, 15528), (64, 15573), (66, 15576), (69, 15594), (73, 15609), (85, 15681), (99, 15738), (100, 15756),

Gene: Zany_20 Start: 14528, Stop: 14956, Start Num: 17
Candidate Starts for Zany_20:

(16, 14525), (Start: 17 @14528 has 43 MA's), (25, 14552), (53, 14657), (64, 14702), (66, 14705), (69, 14723), (73, 14738), (85, 14810), (99, 14867), (100, 14885),

Gene: Zenon_22 Start: 13914, Stop: 14342, Start Num: 10
Candidate Starts for Zenon_22:
(5, 13893), (Start: 10 @13914 has 14 MA's), (Start: 17 @13929 has 43 MA's), (33, 13989), (48, 14046), (84, 14181), (96, 14244), (101, 14274),