

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 224287 Report

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

Pham number 224287 has 218 members, 28 are drafts.

Phages represented in each track:

- Track 1 : Indlulamithi_69
- Track 2 : Fowlmouth_78
- Track 3 : Cuke_77
- Track 4 : MrMiyagi_77
- Track 5 : Leopard_75, Aikoy_76
- Track 6 : Onyinye_76
- Track 7 : Dryad_68
- Track 8 : Rooney_64, Gibson_64
- Track 9 : Yara_60
- Track 10 : PHTown_64, Lizz_64, ShakeNBake_64
- Track 11 : Greenbelt_96
- Track 12 : Wentworth_64
- Track 13 : Wilkos_66
- Track 14 : MacGully_73
- Track 15 : GTE5_54
- Track 16 : Dalilpop_69
- Track 17 : Flapper_68
- Track 18 : GRU1_54
- Track 19 : Turuncu_68
- Track 20 : Bonum_69, Kabluna_68
- Track 21 : Phomeo_64, Jifall16_64, KidneyBean_65
- Track 22 : GTE8_54
- Track 23 : Outis_66, StarStruck_66
- Track 24 : Commandaria_66
- Track 25 : MerCougar_67
- Track 26 : NosilaM_67
- Track 27 : NatB6_65, Emianna_65, Kurt_65, NovumRegina_65, GrootJr_67
- Track 28 : Buggaboo_67, SuperSulley_67
- Track 29 : Wheezy_65
- Track 30 : Tracker_65, Arti_64, Foxboro_66
- Track 31 : RedRaider_72
- Track 32 : Float294_66, Skysand_67
- Track 33 : Lollipop1437_69, Ennea_72, Patio_67
- Track 34 : IDyn_64
- Track 35 : WhoseManz_65
- Track 36 : Yndexa_66, Sukkupi_66, BiPauneto_68
- Track 37 : HubbaBubba_60, NadineRae_65

- Track 38 : Marietta_66
- Track 39 : Scuba_75
- Track 40 : Pleakley_74, Fury_74
- Track 41 : CoffeeBean_64, Maselop_64, Apiary_64, Braxoaddie_64, Polyuyuki_64
- Track 42 : GuyFagieri_63
- Track 43 : Troll4_59, Thoth_59, BigMama_57, Prager_59, Helpful_62, Penelope2018_59, Visconti_60, Adjutor_58, PBI1_56, PLOT_59, Delton_60, Giuseppe_60, WaldoWhy_61, Gumball_59, Butterscotch_58, SirHarley_61, KandZ_58, Mopey_60, Chill_61, Nova_58
- Track 44 : Erk16_58
- Track 45 : Phalaborwa_62
- Track 46 : Hawkeye_66
- Track 47 : BiteSize_56, Terapin_57, Beyonccage_56, Sienna_56, Djokovic_56, Madi_56
- Track 48 : Suzy_56
- Track 49 : LilyPad_58
- Track 50 : LittleFella_63
- Track 51 : GretelLyn_67, Sadboi_68, Yikes_69, Zany_65
- Track 52 : Gibbin_69, Patos_71, Ranch_67, NorManre_71, Lambo_65, ParvusTarda_66, Lila22_68
- Track 53 : RazorC_67, Genamy16_70, Alyssamiracle_70, Jamemuya19_67, NovaSharks_69, Astralis_68, Avian_66, Stormer_67, Rumi_68
- Track 54 : BirthdayBoy_69, GOATification_67, Fulcrum_67, OtterstedtS21_67
- Track 55 : Mima20_68, DoobyDoo_66, LavAbarElk_67, Alephilan_68
- Track 56 : Apeppi_62, LuckyLeo_64
- Track 57 : Erutan_67
- Track 58 : Wojtek_63
- Track 59 : Jalebi_66, MoiGyank_70, Sampudon_67
- Track 60 : DaviePasture_67
- Track 61 : DumpTruck_66
- Track 62 : Xenia2_66
- Track 63 : Tillicus_63
- Track 64 : Karate_44
- Track 65 : Hiddenleaf_45, DannyDe_45, Chivey_45, FreddieHg_45, Annapurna_46
- Track 66 : Snakehole_45
- Track 67 : MortySmith_43, Erudite_44, Dauntless_44
- Track 68 : Kors_50
- Track 69 : Sparcetus_49, LordBart_49, Bramble_50
- Track 70 : Tongui_46
- Track 71 : AnnaSerena_45, Pharpay_45, Kate_46, NarutoRun_45, Cybele_45, Gilda_45, Anakin_45, CoolCookie_45, Rachella_45, Krampus_45, Neptune_45, PhunaPhoke_45, Potty_45, OverHedge_45, Artiphact_45
- Track 72 : JDawG_44, Aesir_44
- Track 73 : RikSengupta_49, TinyMiny_49
- Track 74 : Crestdrop_45
- Track 75 : JingleBells_45
- Track 76 : Tedro_45
- Track 77 : Ajin_49
- Track 78 : SilentWarrior_45
- Track 79 : Poultruss_44
- Track 80 : Haunter_45
- Track 81 : Hager_46
- Track 82 : Rie18_45

- Track 83 : PotatoChip_54, Zion_54, PeteyPab_53
- Track 84 : Darwin_56
- Track 85 : C3PO_52, Cruella_52
- Track 86 : Kimchi1738_53, Stickynote_54
- Track 87 : Oaker_72, Phreeze_71, Thumb_73
- Track 88 : Megatron06_73
- Track 89 : Konstantine_76
- Track 90 : Damien_72
- Track 91 : Puissant_73
- Track 92 : Predator_71
- Track 93 : Cborch11_74
- Track 94 : Beckerton_71
- Track 95 : DrLupo_79
- Track 96 : Barnyard_75
- Track 97 : Nilo_72, Papyrus_70, Rope_70, Yelo_69, Riparian_72, Candle_68, Weiss13_70, MontyDev_72
- Track 98 : Zenon_72, Send513_70
- Track 99 : Madrugá_83, Patience_85, Labelle_84
- Track 100 : Wollypog_48
- Track 101 : P1201_70
- Track 102 : ChewyVIII_77

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

The start number called the most often in the published annotations is 34, it was called in 50 of the 190 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aesir_44, Ajin_49, Anakin_45, AnnaSerena_45, Annapurna_46, Apiary_64, Artiphact_45, Bramble_50, Braxoaddie_64, C3PO_52, Chivey_45, CoffeeBean_64, CoolCookie_45, Crestdrop_45, Cruella_52, Cybele_45, DannyDe_45, Darwin_56, Dauntless_44, Erudite_44, FreddieHg_45, Gilda_45, GuyFagieri_63, Hager_46, Haunter_45, Hiddenleaf_45, JDawG_44, JingleBells_45, Karate_44, Kate_46, Kimchi1738_53, Kors_50, Krampus_45, LordBart_49, MacGully_73, Maselop_64, MortySmith_43, NarutoRun_45, Neptune_45, OverHedge_45, PeteyPab_53, Pharpay_45, PhunaPhoke_45, Polyuyuki_64, PotatoChip_54, Potty_45, Poultruss_44, Rachella_45, Rie18_45, RikSengupta_49, SilentWarrior_45, Snakehole_45, Sparcetus_49, Stickynote_54, Tedro_45, TinyMiny_49, Tongui_46, Zion_54,

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

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

- Adjutor_58, Aikoy_76, Alephlan_68, Alyssamiracle_70, Apeppi_62, Arti_64, Astralis_68, Avian_66, Barnyard_75, Beckerton_71, Beyoncage_56, BiPauneto_68, BigMama_57, BirthdayBoy_69, BiteSize_56, Bonum_69, Buggaboo_67, Butterscotch_58, Candle_68, Cborch11_74, ChewyVIII_77, Chill_61, Commandaria_66, Cuke_77, Dalilpop_69, Damien_72, DaviePasture_67, Delton_60, Djokovic_56, DoobyDoo_66, DrLupo_79, Dryad_68, DumpTruck_66, Emianna_65, Ennea_72, Erk16_58, Erutan_67, Flapper_68, Float294_66, Fowlmouth_78,

Foxboro_66, Fulcrum_67, Fury_74, GOATification_67, GRU1_54, GTE5_54, GTE8_54, Genamy16_70, Gibbin_69, Gibson_64, Giuseppe_60, Greenbelt_96, GretelLyn_67, GrootJr_67, Gumball_59, Hawkeye_66, Helpful_62, HubbaBubba_60, IDyn_64, Indlulamithi_69, Jalebi_66, Jamemuya19_67, Jifall16_64, Kabluna_68, KandZ_58, KidneyBean_65, Konstantine_76, Kurt_65, Labelle_84, Lambo_65, LavAbarElk_67, Leopard_75, Lila22_68, LilyPad_58, LittleFella_63, Lizz_64, Lollipop1437_69, LuckyLeo_64, Madi_56, Madruga_83, Marietta_66, Megatron06_73, MerCougar_67, Mima20_68, MoiGyank_70, MontyDev_72, Mopey_60, MrMiyagi_77, NadineRae_65, NatB6_65, Nilo_72, NorManre_71, NosilaM_67, NovaSharks_69, Nova_58, NovumRegina_65, Oaker_72, Onyinye_76, OtterstedtS21_67, Outis_66, P1201_70, PBI1_56, PHTown_64, PLOT_59, Papyrus_70, ParvusTarda_66, Patience_85, Patio_67, Patos_71, Penelope2018_59, Phalaborwa_62, Phomeo_64, Phreeze_71, Pleakley_74, Prager_59, Predator_71, Puissant_73, Ranch_67, RazorC_67, RedRaider_72, Riparian_72, Rooney_64, Rope_70, Rumi_68, Sadboi_68, Sampudon_67, Scuba_75, Send513_70, ShakeNBake_64, Sienna_56, SirHarley_61, Skysand_67, StarStruck_66, Stormer_67, Sukkupi_66, SuperSulley_67, Suzy_56, Terapin_57, Thoth_59, Thumb_73, Tillicus_63, Tracker_65, Troll4_59, Turuncu_68, Visconti_60, WaldoWhy_61, Weiss13_70, Wentworth_64, Wheezy_65, WhoseManz_65, Wilkos_66, Wojtek_63, Wollypog_48, Xenia2_66, Yara_60, Yelo_69, Yikes_69, Yndexa_66, Zany_65, Zenon_72,

Summary by start number:

Start 22:

- Found in 2 of 218 (0.9%) of genes in pham
- Manual Annotations of this start: 2 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fowlmouth_78 (AC), MrMiyagi_77 (AC),

Start 24:

- Found in 14 of 218 (6.4%) of genes in pham
- Manual Annotations of this start: 11 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dalilpop_69 (CR1), Ennea_72 (CR3), Flapper_68 (CR1), Float294_66 (CR3), Fury_74 (CR5), GRU1_54 (CR1), GTE5_54 (CR1), Lollipop1437_69 (CR3), Patio_67 (CR3), Pleakley_74 (CR5), RedRaider_72 (CR3), Scuba_75 (CR5), Skysand_67 (CR3), Turuncu_68 (CR1),

Start 28:

- Found in 1 of 218 (0.5%) of genes in pham
- Manual Annotations of this start: 1 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Commandaria_66 (CR2),

Start 29:

- Found in 10 of 218 (4.6%) of genes in pham
- Manual Annotations of this start: 9 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Candle_68 (R), MontyDev_72 (R), Nilo_72 (R), Papyrus_70 (R), Riparian_72 (R), Rope_70 (R), Send513_70 (R), Weiss13_70 (R), Yelo_69 (R), Zenon_72 (R),

Start 30:

- Found in 29 of 218 (13.3%) of genes in pham
- Manual Annotations of this start: 27 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arti_64 (CR2), BiPauneto_68 (CR4), Bonum_69 (CR2), Buggaboo_67 (CR2), Cuke_77 (AC), Emianna_65 (CR2), Foxboro_66 (CR2), GTE8_54 (CR2), GrootJr_67 (CR2), HubbaBubba_60 (CR4), IDyn_64 (CR4), Indlulamithi_69 (AC), Jifall16_64 (CR2), Kabluna_68 (CR2), KidneyBean_65 (CR2), Kurt_65 (CR2), Marietta_66 (CR4), MerCougar_67 (CR2), NadineRae_65 (CR4), NatB6_65 (CR2), NosilaM_67 (CR2), NovumRegina_65 (CR2), Phomeo_64 (CR2), Sukkupi_66 (CR4), SuperSulley_67 (CR2), Tracker_65 (CR2), Wheezy_65 (CR2), WhoseManz_65 (CR4), Yndexa_66 (CR4),

Start 31:

- Found in 3 of 218 (1.4%) of genes in pham
- Manual Annotations of this start: 2 of 190
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Aikoy_76 (AE), Leopard_75 (AE),

Start 32:

- Found in 10 of 218 (4.6%) of genes in pham
- Manual Annotations of this start: 8 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dryad_68 (BN), Gibson_64 (BN), Greenbelt_96 (BN), Lizz_64 (BN), PHTowN_64 (BN), Rooney_64 (BN), ShakeNBake_64 (BN), Wentworth_64 (BN), Wilkos_66 (BN), Yara_60 (BN),

Start 33:

- Found in 15 of 218 (6.9%) of genes in pham
- Manual Annotations of this start: 14 of 190
- Called 93.3% of time when present
- Phage (with cluster) where this start called: Beyoncage_56 (DG1), BiteSize_56 (DG1), Djokovic_56 (DG1), Labelle_84 (U), LilyPad_58 (DG1), LittleFella_63 (DG2), Madi_56 (DG1), Madrugá_83 (U), Outis_66 (CR2), Patience_85 (U), Sienna_56 (DG1), StarStruck_66 (CR2), Suzy_56 (DG1), Terapin_57 (DG1),

Start 34:

- Found in 58 of 218 (26.6%) of genes in pham
- Manual Annotations of this start: 50 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aesir_44 (EF), Ajin_49 (EF), Anakin_45 (EF), AnnaSerena_45 (EF), Annapurna_46 (EF), Apiary_64 (CR6), Artiphact_45 (EF), Bramble_50 (EF), Braxoaddie_64 (CR6), C3PO_52 (EN), Chivey_45 (EF), CoffeeBean_64 (CR6), CoolCookie_45 (EF), Crestdrop_45 (EF), Cruella_52 (EN), Cybele_45 (EF), DannyDe_45 (EF), Darwin_56 (EN), Dauntless_44 (EF), Erudite_44 (EF), FreddieHg_45 (EF), Gilda_45 (EF), GuyFagieri_63 (CR6), Hager_46 (EF), Haunter_45 (EF), Hiddenleaf_45 (EF), JDawG_44 (EF), JingleBells_45 (EF), Karate_44 (EF), Kate_46 (EF), Kimchi1738_53 (EN), Kors_50 (EF), Krampus_45 (EF), LordBart_49 (EF), MacGully_73 (CR), Maselop_64 (CR6), MortySmith_43 (EF), NarutoRun_45 (EF), Neptune_45 (EF), OverHedge_45 (EF), PeteyPab_53 (EN), Pharpay_45 (EF), PhunaPhoke_45 (EF), Polyuyuki_64 (CR6), PotatoChip_54 (EN), Potty_45 (EF), Poultruss_44 (EF), Rachella_45 (EF), Rie18_45 (EF), RikSengupta_49 (EF), SilentWarrior_45 (EF), Snakehole_45 (EF), Sparcetus_49

(EF), Stickynote_54 (EN), Tedro_45 (EF), TinyMiny_49 (EF), Tongui_46 (EF), Zion_54 (EN),

Start 35:

- Found in 50 of 218 (22.9%) of genes in pham
- Manual Annotations of this start: 39 of 190
- Called 98.0% of time when present
- Phage (with cluster) where this start called: Alephilan_68 (DV), Alyssamiracle_70 (DV), Apeppi_62 (DV), Astralis_68 (DV), Avian_66 (DV), Beckerton_71 (H1), BirthdayBoy_69 (DV), Cborch11_74 (H1), Damien_72 (H1), DaviePasture_67 (DV), DoobyDoo_66 (DV), DumpTruck_66 (DV), Erutan_67 (DV), Fulcrum_67 (DV), GOATification_67 (DV), Genamy16_70 (DV), Gibbin_69 (DV), GretelLyn_67 (DV), Jalebi_66 (DV), Jamemuya19_67 (DV), Konstantine_76 (H1), Lambo_65 (DV), LavAbarElk_67 (DV), Lila22_68 (DV), LuckyLeo_64 (DV), Megatron06_73 (H1), Mima20_68 (DV), MoiGyank_70 (DV), NorManre_71 (DV), NovaSharks_69 (DV), Oaker_72 (H1), OtterstedtS21_67 (DV), ParvusTarda_66 (DV), Patos_71 (DV), Phreeze_71 (H1), Predator_71 (H1), Puissant_73 (H1), Ranch_67 (DV), RazorC_67 (DV), Rumi_68 (DV), Sadboi_68 (DV), Sampudon_67 (DV), Stormer_67 (DV), Thumb_73 (H1), Tillicus_63 (DV), Wojtek_63 (DV), Xenia2_66 (DV), Yikes_69 (DV), Zany_65 (DV),

Start 36:

- Found in 2 of 218 (0.9%) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: P1201_70 (singleton),

Start 37:

- Found in 2 of 218 (0.9%) of genes in pham
- Manual Annotations of this start: 2 of 190
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Barnyard_75 (H2), DrLupo_79 (H2),

Start 39:

- Found in 24 of 218 (11.0%) of genes in pham
- Manual Annotations of this start: 21 of 190
- Called 91.7% of time when present
- Phage (with cluster) where this start called: Adjutor_58 (D1), BigMama_57 (D1), Butterscotch_58 (D1), Chill_61 (D1), Delton_60 (D1), Erk16_58 (D1), Giuseppe_60 (D1), Gumball_59 (D1), Helpful_62 (D1), KandZ_58 (D1), Mopey_60 (D1), Nova_58 (D1), PBI1_56 (D1), PLOT_59 (D1), Penelope2018_59 (D1), Phalaborwa_62 (D1), Prager_59 (D1), SirHarley_61 (D1), Thoth_59 (D1), Troll4_59 (D1), Visconti_60 (D1), WaldoWhy_61 (D1),

Start 40:

- Found in 8 of 218 (3.7%) of genes in pham
- Manual Annotations of this start: 4 of 190
- Called 50.0% of time when present
- Phage (with cluster) where this start called: ChewyVIII_77 (singleton), Hawkeye_66 (D2), Onyinye_76 (AE), Wollypog_48 (singleton),

Summary by clusters:

There are 22 clusters represented in this pham: singleton, BN, DV, AC, EN, AE, EF, DG2, R, U, CR, CR2, CR3, CR1, CR6, CR4, CR5, H2, H1, DG1, D2, D1,

Info for manual annotations of cluster AC:

- Start number 22 was manually annotated 2 times for cluster AC.
- Start number 30 was manually annotated 2 times for cluster AC.

Info for manual annotations of cluster AE:

- Start number 31 was manually annotated 2 times for cluster AE.
- Start number 40 was manually annotated 1 time for cluster AE.

Info for manual annotations of cluster BN:

- Start number 32 was manually annotated 8 times for cluster BN.

Info for manual annotations of cluster CR:

- Start number 34 was manually annotated 1 time for cluster CR.

Info for manual annotations of cluster CR1:

- Start number 24 was manually annotated 3 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 28 was manually annotated 1 time for cluster CR2.
- Start number 30 was manually annotated 17 times for cluster CR2.
- Start number 33 was manually annotated 2 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 24 was manually annotated 6 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 30 was manually annotated 8 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 24 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CR6:

- Start number 34 was manually annotated 6 times for cluster CR6.

Info for manual annotations of cluster D1:

- Start number 39 was manually annotated 21 times for cluster D1.

Info for manual annotations of cluster D2:

- Start number 40 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DG1:

- Start number 33 was manually annotated 8 times for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 33 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 35 was manually annotated 30 times for cluster DV.

Info for manual annotations of cluster EF:

- Start number 34 was manually annotated 35 times for cluster EF.

Info for manual annotations of cluster EN:

- Start number 34 was manually annotated 8 times for cluster EN.

Info for manual annotations of cluster H1:

- Start number 35 was manually annotated 9 times for cluster H1.

Info for manual annotations of cluster H2:

- Start number 37 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster R:

- Start number 29 was manually annotated 9 times for cluster R.

Info for manual annotations of cluster U:

- Start number 33 was manually annotated 3 times for cluster U.

Gene Information:

Gene: Adjutor_58 Start: 44429, Stop: 45289, Start Num: 39

Candidate Starts for Adjutor_58:

(21, 44357), (Start: 39 @44429 has 21 MA's), (47, 44474), (50, 44486), (52, 44504), (53, 44516), (55, 44540), (56, 44543), (83, 44696), (86, 44717), (88, 44726), (91, 44732), (107, 44822), (108, 44825), (111, 44834), (117, 44855), (139, 44966), (142, 44978), (145, 44996), (164, 45047), (167, 45056), (173, 45086), (174, 45089),

Gene: Aesir_44 Start: 29791, Stop: 30636, Start Num: 34

Candidate Starts for Aesir_44:

(1, 29230), (5, 29326), (6, 29365), (13, 29491), (14, 29527), (Start: 34 @29791 has 50 MA's), (48, 29845), (53, 29881), (55, 29908), (63, 29953), (64, 29956), (70, 30001), (100, 30157), (107, 30193), (110, 30202), (111, 30205), (138, 30334), (142, 30349), (176, 30454), (185, 30496),

Gene: Aikoy_76 Start: 51990, Stop: 52910, Start Num: 31

Candidate Starts for Aikoy_76:

(Start: 31 @51990 has 2 MA's), (Start: 40 @52005 has 4 MA's), (52, 52077), (53, 52089), (55, 52113), (56, 52116), (62, 52146), (71, 52209), (84, 52266), (86, 52284), (88, 52293), (91, 52299), (98, 52329), (131, 52488), (133, 52497), (134, 52500), (142, 52545), (145, 52563), (164, 52611), (175, 52659), (181, 52698), (197, 52803),

Gene: Ajin_49 Start: 31113, Stop: 31955, Start Num: 34

Candidate Starts for Ajin_49:

(Start: 34 @31113 has 50 MA's), (62, 31260), (63, 31272), (64, 31275), (96, 31437), (100, 31473), (107, 31509), (124, 31572), (127, 31581), (138, 31650), (142, 31665), (185, 31812),

Gene: Alephilan_68 Start: 45485, Stop: 46561, Start Num: 35

Candidate Starts for Alephilan_68:

(Start: 35 @45485 has 39 MA's), (59, 45617), (67, 45665), (83, 45746), (85, 45758), (86, 45767), (87, 45776), (116, 45899), (120, 45920), (128, 45947), (142, 46028), (145, 46046), (151, 46067), (171, 46145), (187, 46229), (205, 46394), (215, 46532),

Gene: Alyssamiracle_70 Start: 44487, Stop: 45557, Start Num: 35

Candidate Starts for Alyssamiracle_70:

(Start: 35 @44487 has 39 MA's), (54, 44583), (59, 44619), (67, 44667), (85, 44760), (86, 44769), (87, 44778), (116, 44901), (120, 44922), (128, 44949), (142, 45030), (145, 45048), (151, 45069), (171, 45147), (187, 45231), (215, 45528),

Gene: Anakin_45 Start: 30144, Stop: 30992, Start Num: 34

Candidate Starts for Anakin_45:

(6, 29718), (10, 29748), (14, 29880), (Start: 34 @30144 has 50 MA's), (48, 30198), (53, 30234), (55, 30261), (63, 30306), (64, 30309), (70, 30354), (100, 30510), (107, 30546), (110, 30555), (111, 30558), (138, 30687), (142, 30702), (176, 30807), (185, 30849),

Gene: AnnaSerena_45 Start: 30179, Stop: 31027, Start Num: 34

Candidate Starts for AnnaSerena_45:

(6, 29753), (10, 29783), (14, 29915), (Start: 34 @30179 has 50 MA's), (48, 30233), (53, 30269), (55, 30296), (63, 30341), (64, 30344), (70, 30389), (100, 30545), (107, 30581), (110, 30590), (111, 30593), (138, 30722), (142, 30737), (176, 30842), (185, 30884),

Gene: Annapurna_46 Start: 29420, Stop: 30265, Start Num: 34

Candidate Starts for Annapurna_46:

(1, 28859), (5, 28955), (6, 28994), (7, 29000), (10, 29024), (13, 29120), (14, 29156), (Start: 34 @29420 has 50 MA's), (48, 29474), (53, 29510), (55, 29537), (63, 29582), (64, 29585), (70, 29630), (100, 29786), (107, 29822), (110, 29831), (111, 29834), (138, 29963), (142, 29978), (176, 30083), (185, 30125),

Gene: Apeppi_62 Start: 44646, Stop: 45731, Start Num: 35

Candidate Starts for Apeppi_62:

(Start: 35 @44646 has 39 MA's), (53, 44739), (59, 44778), (67, 44826), (86, 44928), (87, 44937), (116, 45060), (120, 45081), (124, 45096), (128, 45108), (142, 45189), (145, 45207), (151, 45228), (158, 45249), (171, 45306), (187, 45390), (214, 45690),

Gene: Apiary_64 Start: 48400, Stop: 47549, Start Num: 34

Candidate Starts for Apiary_64:

(Start: 34 @48400 has 50 MA's), (48, 48340), (67, 48220), (69, 48208), (86, 48106), (88, 48097), (94, 48079), (97, 48067), (107, 47995), (142, 47839), (145, 47821), (151, 47815), (179, 47692), (188, 47656), (194, 47635),

Gene: Arti_64 Start: 50810, Stop: 49992, Start Num: 30

Candidate Starts for Arti_64:

(23, 50837), (Start: 30 @50810 has 27 MA's), (48, 50738), (82, 50516), (109, 50375), (112, 50366), (125, 50315), (132, 50279), (142, 50225), (151, 50207), (156, 50192),

Gene: Artiphact_45 Start: 30168, Stop: 31016, Start Num: 34

Candidate Starts for Artiphact_45:

(6, 29742), (10, 29772), (14, 29904), (Start: 34 @30168 has 50 MA's), (48, 30222), (53, 30258), (55, 30285), (63, 30330), (64, 30333), (70, 30378), (100, 30534), (107, 30570), (110, 30579), (111, 30582), (138, 30711), (142, 30726), (176, 30831), (185, 30873),

Gene: Astralis_68 Start: 44066, Stop: 45136, Start Num: 35

Candidate Starts for Astralis_68:

(Start: 35 @44066 has 39 MA's), (54, 44162), (59, 44198), (67, 44246), (85, 44339), (86, 44348), (87, 44357), (116, 44480), (120, 44501), (128, 44528), (142, 44609), (145, 44627), (151, 44648), (171, 44726), (187, 44810), (215, 45107),

Gene: Avian_66 Start: 44215, Stop: 45285, Start Num: 35

Candidate Starts for Avian_66:

(Start: 35 @44215 has 39 MA's), (54, 44311), (59, 44347), (67, 44395), (85, 44488), (86, 44497), (87, 44506), (116, 44629), (120, 44650), (128, 44677), (142, 44758), (145, 44776), (151, 44797), (171, 44875), (187, 44959), (215, 45256),

Gene: Barnyard_75 Start: 51526, Stop: 52548, Start Num: 37

Candidate Starts for Barnyard_75:

(Start: 37 @51526 has 2 MA's), (57, 51652), (58, 51658), (62, 51682), (70, 51742), (71, 51745), (80, 51790), (86, 51835), (87, 51844), (91, 51850), (95, 51868), (108, 51949), (115, 51970), (132, 52048), (136, 52093), (142, 52111), (145, 52129), (169, 52204), (181, 52273), (185, 52294), (201, 52387), (203, 52423),

Gene: Beckerton_71 Start: 53060, Stop: 54136, Start Num: 35

Candidate Starts for Beckerton_71:

(Start: 35 @53060 has 39 MA's), (38, 53066), (48, 53114), (56, 53177), (64, 53222), (71, 53270), (78, 53300), (86, 53357), (87, 53366), (91, 53372), (111, 53474), (119, 53507), (123, 53522), (131, 53561), (136, 53600), (142, 53618), (145, 53636), (146, 53639), (149, 53648), (169, 53714), (173, 53738), (204, 53927), (213, 54074), (214, 54077), (216, 54116), (217, 54125),

Gene: Beyoncage_56 Start: 41805, Stop: 42734, Start Num: 33

Candidate Starts for Beyoncage_56:

(Start: 33 @41805 has 14 MA's), (49, 41862), (53, 41895), (79, 42045), (80, 42054), (83, 42078), (86, 42099), (91, 42114), (94, 42126), (97, 42138), (102, 42177), (104, 42192), (114, 42225), (135, 42336), (136, 42342), (142, 42360), (148, 42384), (150, 42390), (159, 42420), (164, 42444), (182, 42537), (203, 42705),

Gene: BiPauneto_68 Start: 50402, Stop: 49605, Start Num: 30

Candidate Starts for BiPauneto_68:

(17, 50501), (23, 50429), (Start: 30 @50402 has 27 MA's), (48, 50327), (75, 50153), (101, 50021), (106, 49991), (109, 49982), (112, 49973), (118, 49946), (125, 49919), (134, 49874), (139, 49841), (142, 49829), (151, 49811), (173, 49730), (191, 49652),

Gene: BigMama_57 Start: 44505, Stop: 45365, Start Num: 39

Candidate Starts for BigMama_57:

(21, 44433), (Start: 39 @44505 has 21 MA's), (47, 44550), (50, 44562), (52, 44580), (53, 44592), (55, 44616), (56, 44619), (83, 44772), (86, 44793), (88, 44802), (91, 44808), (107, 44898), (108, 44901), (111, 44910), (117, 44931), (139, 45042), (142, 45054), (145, 45072), (164, 45123), (167, 45132), (173, 45162), (174, 45165),

Gene: BirthdayBoy_69 Start: 45791, Stop: 46882, Start Num: 35

Candidate Starts for BirthdayBoy_69:

(Start: 35 @45791 has 39 MA's), (59, 45923), (67, 45971), (83, 46052), (85, 46064), (86, 46073), (87, 46082), (116, 46205), (120, 46226), (128, 46253), (142, 46334), (145, 46352), (151, 46373), (171, 46451), (187, 46535), (205, 46700), (206, 46709), (215, 46853),

Gene: BiteSize_56 Start: 41891, Stop: 42820, Start Num: 33

Candidate Starts for BiteSize_56:

(Start: 33 @41891 has 14 MA's), (49, 41948), (53, 41981), (79, 42131), (80, 42140), (83, 42164), (86, 42185), (91, 42200), (94, 42212), (97, 42224), (102, 42263), (104, 42278), (114, 42311), (135, 42422), (136, 42428), (142, 42446), (148, 42470), (150, 42476), (159, 42506), (164, 42530), (182, 42623), (203, 42791),

Gene: Bonum_69 Start: 51702, Stop: 50839, Start Num: 30

Candidate Starts for Bonum_69:

(19, 51780), (Start: 30 @51702 has 27 MA's), (62, 51540), (82, 51414), (109, 51273), (118, 51240), (125, 51213), (135, 51147), (142, 51123), (151, 51105), (168, 51051), (175, 51021), (182, 50976),

Gene: Bramble_50 Start: 31162, Stop: 32004, Start Num: 34

Candidate Starts for Bramble_50:

(Start: 34 @31162 has 50 MA's), (50, 31225), (62, 31309), (63, 31321), (64, 31324), (96, 31486), (100, 31522), (107, 31558), (124, 31621), (127, 31630), (138, 31699), (142, 31714), (185, 31861),

Gene: Braxoaddie_64 Start: 48389, Stop: 47538, Start Num: 34

Candidate Starts for Braxoaddie_64:

(Start: 34 @48389 has 50 MA's), (48, 48329), (67, 48209), (69, 48197), (86, 48095), (88, 48086), (94, 48068), (97, 48056), (107, 47984), (142, 47828), (145, 47810), (151, 47804), (179, 47681), (188, 47645), (194, 47624),

Gene: Buggaboo_67 Start: 52253, Stop: 51390, Start Num: 30

Candidate Starts for Buggaboo_67:

(19, 52331), (Start: 30 @52253 has 27 MA's), (62, 52091), (82, 51965), (109, 51824), (118, 51791), (125, 51764), (127, 51758), (135, 51698), (142, 51674), (151, 51656), (168, 51602), (175, 51572), (182, 51527),

Gene: Butterscotch_58 Start: 44489, Stop: 45349, Start Num: 39

Candidate Starts for Butterscotch_58:

(21, 44417), (Start: 39 @44489 has 21 MA's), (47, 44534), (50, 44546), (52, 44564), (53, 44576), (55, 44600), (56, 44603), (83, 44756), (86, 44777), (88, 44786), (91, 44792), (107, 44882), (108, 44885), (111, 44894), (117, 44915), (139, 45026), (142, 45038), (145, 45056), (164, 45107), (167, 45116), (173, 45146), (174, 45149),

Gene: C3PO_52 Start: 45078, Stop: 44314, Start Num: 34

Candidate Starts for C3PO_52:

(Start: 34 @45078 has 50 MA's), (67, 44886), (70, 44859), (86, 44784), (132, 44577), (142, 44523), (163, 44478), (182, 44394),

Gene: Candle_68 Start: 52987, Stop: 53817, Start Num: 29

Candidate Starts for Candle_68:

(Start: 29 @52987 has 9 MA's), (44, 53032), (49, 53062), (53, 53095), (55, 53119), (64, 53167), (68, 53188), (83, 53281), (88, 53311), (90, 53314), (93, 53326), (115, 53410), (121, 53440), (136, 53524), (139, 53530), (142, 53542), (145, 53560), (152, 53587), (153, 53590), (174, 53686), (176, 53707), (182, 53734),

Gene: Cborch11_74 Start: 52603, Stop: 53682, Start Num: 35

Candidate Starts for Cborch11_74:

(18, 52492), (Start: 35 @52603 has 39 MA's), (38, 52609), (42, 52621), (48, 52657), (64, 52765), (71, 52813), (74, 52834), (76, 52840), (86, 52900), (87, 52909), (91, 52915), (111, 53017), (119, 53050), (123, 53065), (131, 53104), (136, 53143), (142, 53161), (145, 53179), (146, 53182), (149, 53191), (169, 53257), (173, 53281), (204, 53473), (213, 53620), (214, 53623), (216, 53662), (217, 53671),

Gene: ChewyVIII_77 Start: 56830, Stop: 56066, Start Num: 40

Candidate Starts for ChewyVIII_77:

(Start: 40 @56830 has 4 MA's), (41, 56821), (48, 56782), (56, 56716), (91, 56524), (126, 56359), (129, 56335), (137, 56287), (144, 56260), (151, 56245),

Gene: Chill_61 Start: 44552, Stop: 45412, Start Num: 39

Candidate Starts for Chill_61:

(21, 44480), (Start: 39 @44552 has 21 MA's), (47, 44597), (50, 44609), (52, 44627), (53, 44639), (55, 44663), (56, 44666), (83, 44819), (86, 44840), (88, 44849), (91, 44855), (107, 44945), (108, 44948), (111, 44957), (117, 44978), (139, 45089), (142, 45101), (145, 45119), (164, 45170), (167, 45179), (173, 45209), (174, 45212),

Gene: Chivey_45 Start: 29369, Stop: 30214, Start Num: 34

Candidate Starts for Chivey_45:

(1, 28808), (5, 28904), (6, 28943), (7, 28949), (10, 28973), (13, 29069), (14, 29105), (Start: 34 @29369 has 50 MA's), (48, 29423), (53, 29459), (55, 29486), (63, 29531), (64, 29534), (70, 29579), (100, 29735), (107, 29771), (110, 29780), (111, 29783), (138, 29912), (142, 29927), (176, 30032), (185, 30074),

Gene: CoffeeBean_64 Start: 48347, Stop: 47496, Start Num: 34

Candidate Starts for CoffeeBean_64:

(Start: 34 @48347 has 50 MA's), (48, 48287), (67, 48167), (69, 48155), (86, 48053), (88, 48044), (94, 48026), (97, 48014), (107, 47942), (142, 47786), (145, 47768), (151, 47762), (179, 47639), (188, 47603), (194, 47582),

Gene: Commandaria_66 Start: 52055, Stop: 51243, Start Num: 28

Candidate Starts for Commandaria_66:

(Start: 28 @52055 has 1 MA's), (48, 51968), (55, 51908), (65, 51851), (66, 51842), (109, 51608), (112, 51599), (118, 51575), (120, 51566), (125, 51548), (142, 51458), (151, 51440), (156, 51425), (158, 51419), (164, 51395),

Gene: CoolCookie_45 Start: 30174, Stop: 31022, Start Num: 34

Candidate Starts for CoolCookie_45:

(6, 29748), (10, 29778), (14, 29910), (Start: 34 @30174 has 50 MA's), (48, 30228), (53, 30264), (55, 30291), (63, 30336), (64, 30339), (70, 30384), (100, 30540), (107, 30576), (110, 30585), (111, 30588), (138, 30717), (142, 30732), (176, 30837), (185, 30879),

Gene: Crestdrop_45 Start: 29400, Stop: 30245, Start Num: 34

Candidate Starts for Crestdrop_45:

(2, 28890), (3, 28896), (4, 28923), (6, 28974), (10, 29004), (14, 29136), (Start: 34 @29400 has 50 MA's), (48, 29454), (53, 29490), (55, 29517), (63, 29562), (64, 29565), (70, 29610), (100, 29766), (107, 29802), (110, 29811), (111, 29814), (138, 29943), (142, 29958), (176, 30063), (185, 30105),

Gene: Cruella_52 Start: 45078, Stop: 44314, Start Num: 34

Candidate Starts for Cruella_52:

(Start: 34 @45078 has 50 MA's), (67, 44886), (70, 44859), (86, 44784), (132, 44577), (142, 44523), (163, 44478), (182, 44394),

Gene: Cuke_77 Start: 46278, Stop: 47102, Start Num: 30

Candidate Starts for Cuke_77:

(Start: 30 @46278 has 27 MA's), (Start: 33 @46290 has 14 MA's), (Start: 39 @46302 has 21 MA's), (Start: 40 @46305 has 4 MA's), (53, 46389), (55, 46413), (63, 46458), (64, 46461), (77, 46539), (84, 46578), (91, 46611), (96, 46632), (97, 46635), (107, 46701), (109, 46707), (119, 46746), (123, 46761), (140, 46848), (142, 46857), (145, 46875), (161, 46914), (166, 46941), (172, 46971), (174, 46980), (177, 47004), (189, 47055),

Gene: Cybele_45 Start: 30144, Stop: 30992, Start Num: 34

Candidate Starts for Cybele_45:

(6, 29718), (10, 29748), (14, 29880), (Start: 34 @30144 has 50 MA's), (48, 30198), (53, 30234), (55, 30261), (63, 30306), (64, 30309), (70, 30354), (100, 30510), (107, 30546), (110, 30555), (111, 30558), (138, 30687), (142, 30702), (176, 30807), (185, 30849),

Gene: Dalilpop_69 Start: 52942, Stop: 52163, Start Num: 24

Candidate Starts for Dalilpop_69:

(Start: 24 @52942 has 11 MA's), (48, 52855), (106, 52516), (109, 52507), (117, 52480), (118, 52474), (125, 52447), (132, 52417), (142, 52363), (143, 52357), (151, 52345), (165, 52303), (175, 52267),

Gene: Damien_72 Start: 52565, Stop: 53644, Start Num: 35

Candidate Starts for Damien_72:

(Start: 35 @52565 has 39 MA's), (38, 52571), (42, 52583), (48, 52619), (64, 52727), (71, 52775), (74, 52796), (76, 52802), (86, 52862), (87, 52871), (91, 52877), (111, 52979), (119, 53012), (123, 53027), (131, 53066), (136, 53105), (142, 53123), (145, 53141), (146, 53144), (149, 53153), (169, 53219), (173, 53243), (204, 53435), (213, 53582), (214, 53585), (216, 53624), (217, 53633),

Gene: DannyDe_45 Start: 29375, Stop: 30220, Start Num: 34

Candidate Starts for DannyDe_45:

(1, 28814), (5, 28910), (6, 28949), (7, 28955), (10, 28979), (13, 29075), (14, 29111), (Start: 34 @29375 has 50 MA's), (48, 29429), (53, 29465), (55, 29492), (63, 29537), (64, 29540), (70, 29585), (100, 29741), (107, 29777), (110, 29786), (111, 29789), (138, 29918), (142, 29933), (176, 30038), (185, 30080),

Gene: Darwin_56 Start: 44559, Stop: 43795, Start Num: 34

Candidate Starts for Darwin_56:

(Start: 34 @44559 has 50 MA's), (70, 44340), (84, 44283), (132, 44058), (142, 44004), (163, 43959), (182, 43875),

Gene: Dauntless_44 Start: 29727, Stop: 30572, Start Num: 34

Candidate Starts for Dauntless_44:

(6, 29301), (10, 29331), (11, 29358), (13, 29427), (14, 29463), (Start: 34 @29727 has 50 MA's), (48, 29781), (53, 29817), (55, 29844), (63, 29889), (64, 29892), (70, 29937), (100, 30093), (107, 30129), (110, 30138), (111, 30141), (138, 30270), (142, 30285), (176, 30390), (185, 30432),

Gene: DaviePasture_67 Start: 45399, Stop: 46469, Start Num: 35

Candidate Starts for DaviePasture_67:

(Start: 35 @45399 has 39 MA's), (59, 45531), (67, 45579), (85, 45672), (86, 45681), (87, 45690), (116, 45813), (120, 45834), (128, 45861), (142, 45942), (145, 45960), (151, 45981), (171, 46059), (187, 46143), (199, 46221), (205, 46308), (215, 46440),

Gene: Delton_60 Start: 44887, Stop: 45747, Start Num: 39

Candidate Starts for Delton_60:

(21, 44815), (Start: 39 @44887 has 21 MA's), (47, 44932), (50, 44944), (52, 44962), (53, 44974), (55, 44998), (56, 45001), (83, 45154), (86, 45175), (88, 45184), (91, 45190), (107, 45280), (108, 45283), (111, 45292), (117, 45313), (139, 45424), (142, 45436), (145, 45454), (164, 45505), (167, 45514), (173, 45544), (174, 45547),

Gene: Djokovic_56 Start: 41804, Stop: 42733, Start Num: 33

Candidate Starts for Djokovic_56:

(Start: 33 @41804 has 14 MA's), (49, 41861), (53, 41894), (79, 42044), (80, 42053), (83, 42077), (86, 42098), (91, 42113), (94, 42125), (97, 42137), (102, 42176), (104, 42191), (114, 42224), (135, 42335), (136, 42341), (142, 42359), (148, 42383), (150, 42389), (159, 42419), (164, 42443), (182, 42536), (203, 42704),

Gene: DoobyDoo_66 Start: 44375, Stop: 45445, Start Num: 35

Candidate Starts for DoobyDoo_66:

(Start: 35 @44375 has 39 MA's), (59, 44507), (67, 44555), (83, 44636), (85, 44648), (86, 44657), (87, 44666), (116, 44789), (120, 44810), (128, 44837), (142, 44918), (145, 44936), (151, 44957), (171, 45035), (187, 45119), (205, 45284), (215, 45416),

Gene: DrLupo_79 Start: 52740, Stop: 53756, Start Num: 37

Candidate Starts for DrLupo_79:

(Start: 37 @52740 has 2 MA's), (57, 52866), (58, 52872), (62, 52896), (70, 52956), (71, 52959), (79, 52995), (80, 53004), (86, 53049), (87, 53058), (91, 53064), (95, 53082), (99, 53100), (108, 53163), (115, 53184), (132, 53262), (136, 53307), (142, 53325), (145, 53343), (147, 53349), (169, 53418), (185, 53508), (198, 53577), (212, 53739),

Gene: Dryad_68 Start: 46911, Stop: 46123, Start Num: 32

Candidate Starts for Dryad_68:

(Start: 32 @46911 has 8 MA's), (43, 46884), (48, 46857), (51, 46848), (53, 46821), (55, 46797), (56, 46794), (85, 46635), (102, 46545), (103, 46539), (113, 46500), (118, 46479), (142, 46362), (143, 46356), (155, 46338), (164, 46311), (180, 46239),

Gene: DumpTruck_66 Start: 44187, Stop: 45317, Start Num: 35

Candidate Starts for DumpTruck_66:

(Start: 35 @44187 has 39 MA's), (53, 44283), (59, 44322), (67, 44370), (83, 44451), (85, 44463), (86, 44472), (87, 44481), (120, 44625), (142, 44733), (145, 44751), (151, 44772), (159, 44796), (160, 44799), (171, 44850), (196, 44991), (207, 45147), (215, 45285),

Gene: Emianna_65 Start: 52042, Stop: 51221, Start Num: 30

Candidate Starts for Emianna_65:

(23, 52069), (Start: 30 @52042 has 27 MA's), (48, 51970), (82, 51748), (109, 51607), (112, 51598), (125, 51547), (132, 51511), (142, 51457), (151, 51439), (156, 51424), (183, 51301),

Gene: Ennea_72 Start: 53024, Stop: 52245, Start Num: 24

Candidate Starts for Ennea_72:

(Start: 24 @53024 has 11 MA's), (48, 52940), (109, 52592), (125, 52532), (132, 52496), (142, 52442), (151, 52424), (162, 52391), (165, 52382), (181, 52307), (183, 52295),

Gene: Erk16_58 Start: 44591, Stop: 45451, Start Num: 39

Candidate Starts for Erk16_58:

(Start: 39 @44591 has 21 MA's), (47, 44636), (50, 44648), (52, 44666), (53, 44678), (55, 44702), (56, 44705), (83, 44858), (86, 44879), (88, 44888), (91, 44894), (107, 44984), (108, 44987), (111, 44996), (117, 45017), (139, 45128), (142, 45140), (145, 45158), (164, 45209), (167, 45218), (173, 45248), (174, 45251),

Gene: Erudite_44 Start: 29727, Stop: 30572, Start Num: 34

Candidate Starts for Erudite_44:

(6, 29301), (10, 29331), (11, 29358), (13, 29427), (14, 29463), (Start: 34 @29727 has 50 MA's), (48, 29781), (53, 29817), (55, 29844), (63, 29889), (64, 29892), (70, 29937), (100, 30093), (107, 30129), (110, 30138), (111, 30141), (138, 30270), (142, 30285), (176, 30390), (185, 30432),

Gene: Erutan_67 Start: 45017, Stop: 46087, Start Num: 35

Candidate Starts for Erutan_67:

(Start: 35 @45017 has 39 MA's), (59, 45149), (67, 45197), (85, 45290), (86, 45299), (87, 45308), (116, 45431), (120, 45452), (128, 45479), (142, 45560), (145, 45578), (151, 45599), (171, 45677), (187,

45761), (200, 45842), (215, 46058),

Gene: Flapper_68 Start: 52133, Stop: 51354, Start Num: 24

Candidate Starts for Flapper_68:

(Start: 24 @52133 has 11 MA's), (48, 52046), (56, 51983), (106, 51707), (109, 51698), (118, 51665), (125, 51638), (132, 51608), (142, 51554), (143, 51548), (151, 51536), (153, 51530), (165, 51494), (175, 51458),

Gene: Float294_66 Start: 52739, Stop: 51960, Start Num: 24

Candidate Starts for Float294_66:

(Start: 24 @52739 has 11 MA's), (48, 52655), (60, 52580), (109, 52307), (125, 52247), (132, 52211), (142, 52157), (151, 52139), (162, 52106), (165, 52097), (181, 52022), (183, 52010),

Gene: Fowlmouth_78 Start: 48807, Stop: 49670, Start Num: 22

Candidate Starts for Fowlmouth_78:

(Start: 22 @48807 has 2 MA's), (56, 48993), (63, 49035), (64, 49038), (77, 49116), (81, 49146), (91, 49188), (94, 49200), (97, 49212), (106, 49275), (109, 49284), (119, 49323), (140, 49425), (142, 49434), (161, 49491), (172, 49548), (174, 49557), (177, 49581), (189, 49632),

Gene: Foxboro_66 Start: 52567, Stop: 51746, Start Num: 30

Candidate Starts for Foxboro_66:

(23, 52594), (Start: 30 @52567 has 27 MA's), (48, 52495), (82, 52273), (109, 52132), (112, 52123), (125, 52072), (132, 52036), (142, 51982), (151, 51964), (156, 51949),

Gene: FreddieHg_45 Start: 29385, Stop: 30230, Start Num: 34

Candidate Starts for FreddieHg_45:

(1, 28824), (5, 28920), (6, 28959), (7, 28965), (10, 28989), (13, 29085), (14, 29121), (Start: 34 @29385 has 50 MA's), (48, 29439), (53, 29475), (55, 29502), (63, 29547), (64, 29550), (70, 29595), (100, 29751), (107, 29787), (110, 29796), (111, 29799), (138, 29928), (142, 29943), (176, 30048), (185, 30090),

Gene: Fulcrum_67 Start: 45099, Stop: 46190, Start Num: 35

Candidate Starts for Fulcrum_67:

(Start: 35 @45099 has 39 MA's), (59, 45231), (67, 45279), (83, 45360), (85, 45372), (86, 45381), (87, 45390), (116, 45513), (120, 45534), (128, 45561), (142, 45642), (145, 45660), (151, 45681), (171, 45759), (187, 45843), (205, 46008), (206, 46017), (215, 46161),

Gene: Fury_74 Start: 51253, Stop: 50462, Start Num: 24

Candidate Starts for Fury_74:

(Start: 24 @51253 has 11 MA's), (48, 51157), (86, 50923), (109, 50812), (112, 50803), (117, 50785), (119, 50773), (125, 50752), (142, 50662), (151, 50644), (156, 50629), (173, 50569),

Gene: GOATification_67 Start: 45099, Stop: 46190, Start Num: 35

Candidate Starts for GOATification_67:

(Start: 35 @45099 has 39 MA's), (59, 45231), (67, 45279), (83, 45360), (85, 45372), (86, 45381), (87, 45390), (116, 45513), (120, 45534), (128, 45561), (142, 45642), (145, 45660), (151, 45681), (171, 45759), (187, 45843), (205, 46008), (206, 46017), (215, 46161),

Gene: GRU1_54 Start: 43981, Stop: 43202, Start Num: 24

Candidate Starts for GRU1_54:

(Start: 24 @43981 has 11 MA's), (48, 43894), (106, 43555), (109, 43546), (118, 43513), (125, 43486), (132, 43456), (142, 43402), (143, 43396), (151, 43384), (156, 43369), (165, 43342), (175, 43306),

Gene: GTE5_54 Start: 45013, Stop: 44234, Start Num: 24

Candidate Starts for GTE5_54:

(Start: 24 @45013 has 11 MA's), (48, 44926), (106, 44587), (109, 44578), (118, 44545), (125, 44518), (132, 44488), (142, 44434), (143, 44428), (151, 44416), (165, 44374), (175, 44338),

Gene: GTE8_54 Start: 45279, Stop: 44458, Start Num: 30

Candidate Starts for GTE8_54:

(23, 45306), (Start: 30 @45279 has 27 MA's), (48, 45207), (82, 44985), (109, 44844), (112, 44835), (125, 44784), (132, 44748), (142, 44694), (151, 44676), (156, 44661), (184, 44535),

Gene: Genamy16_70 Start: 44473, Stop: 45543, Start Num: 35

Candidate Starts for Genamy16_70:

(Start: 35 @44473 has 39 MA's), (54, 44569), (59, 44605), (67, 44653), (85, 44746), (86, 44755), (87, 44764), (116, 44887), (120, 44908), (128, 44935), (142, 45016), (145, 45034), (151, 45055), (171, 45133), (187, 45217), (215, 45514),

Gene: Gibbin_69 Start: 45904, Stop: 46995, Start Num: 35

Candidate Starts for Gibbin_69:

(Start: 35 @45904 has 39 MA's), (59, 46036), (67, 46084), (85, 46177), (86, 46186), (87, 46195), (116, 46318), (120, 46339), (128, 46366), (142, 46447), (145, 46465), (151, 46486), (171, 46564), (187, 46648), (205, 46813), (206, 46822), (215, 46966),

Gene: Gibson_64 Start: 46180, Stop: 45395, Start Num: 32

Candidate Starts for Gibson_64:

(Start: 32 @46180 has 8 MA's), (48, 46126), (51, 46117), (53, 46090), (55, 46066), (64, 46018), (84, 45913), (102, 45814), (103, 45808), (113, 45769), (118, 45748), (134, 45676), (142, 45631), (143, 45625), (155, 45607), (164, 45580), (180, 45508),

Gene: Gilda_45 Start: 30168, Stop: 31013, Start Num: 34

Candidate Starts for Gilda_45:

(6, 29742), (10, 29772), (14, 29904), (Start: 34 @30168 has 50 MA's), (48, 30222), (53, 30258), (55, 30285), (63, 30330), (64, 30333), (70, 30378), (100, 30534), (107, 30570), (110, 30579), (111, 30582), (138, 30711), (142, 30726), (176, 30831), (185, 30873),

Gene: Giuseppe_60 Start: 44457, Stop: 45317, Start Num: 39

Candidate Starts for Giuseppe_60:

(21, 44385), (Start: 39 @44457 has 21 MA's), (47, 44502), (50, 44514), (52, 44532), (53, 44544), (55, 44568), (56, 44571), (83, 44724), (86, 44745), (88, 44754), (91, 44760), (107, 44850), (108, 44853), (111, 44862), (117, 44883), (139, 44994), (142, 45006), (145, 45024), (164, 45075), (167, 45084), (173, 45114), (174, 45117),

Gene: Greenbelt_96 Start: 42280, Stop: 41495, Start Num: 32

Candidate Starts for Greenbelt_96:

(Start: 32 @42280 has 8 MA's), (48, 42226), (50, 42220), (53, 42190), (59, 42154), (113, 41869), (118, 41848), (125, 41821), (142, 41731), (143, 41725), (155, 41707), (169, 41671), (180, 41608), (186, 41581),

Gene: Gretellyn_67 Start: 45889, Stop: 46959, Start Num: 35

Candidate Starts for Gretellyn_67:

(Start: 35 @45889 has 39 MA's), (59, 46021), (67, 46069), (85, 46162), (86, 46171), (87, 46180), (116, 46303), (120, 46324), (128, 46351), (142, 46432), (145, 46450), (151, 46471), (171, 46549), (187, 46633), (205, 46798), (215, 46930),

Gene: GrootJr_67 Start: 51436, Stop: 50615, Start Num: 30

Candidate Starts for GrootJr_67:

(23, 51463), (Start: 30 @51436 has 27 MA's), (48, 51364), (82, 51142), (109, 51001), (112, 50992), (125, 50941), (132, 50905), (142, 50851), (151, 50833), (156, 50818), (183, 50695),

Gene: Gumball_59 Start: 44949, Stop: 45809, Start Num: 39

Candidate Starts for Gumball_59:

(21, 44877), (Start: 39 @44949 has 21 MA's), (47, 44994), (50, 45006), (52, 45024), (53, 45036), (55, 45060), (56, 45063), (83, 45216), (86, 45237), (88, 45246), (91, 45252), (107, 45342), (108, 45345), (111, 45354), (117, 45375), (139, 45486), (142, 45498), (145, 45516), (164, 45567), (167, 45576), (173, 45606), (174, 45609),

Gene: GuyFagieri_63 Start: 48427, Stop: 47585, Start Num: 34

Candidate Starts for GuyFagieri_63:

(26, 48457), (27, 48454), (Start: 34 @48427 has 50 MA's), (48, 48367), (67, 48247), (68, 48244), (82, 48157), (86, 48133), (88, 48124), (94, 48106), (99, 48082), (107, 48022), (112, 48007), (134, 47911), (142, 47866), (145, 47848), (154, 47833), (179, 47719), (188, 47683), (194, 47662),

Gene: Hager_46 Start: 29593, Stop: 30441, Start Num: 34

Candidate Starts for Hager_46:

(7, 29173), (8, 29188), (9, 29191), (10, 29197), (Start: 34 @29593 has 50 MA's), (46, 29635), (48, 29647), (53, 29683), (55, 29710), (63, 29755), (64, 29758), (70, 29803), (100, 29959), (107, 29995), (110, 30004), (111, 30007), (119, 30040), (138, 30136), (142, 30151), (176, 30256), (185, 30298),

Gene: Haunter_45 Start: 29551, Stop: 30396, Start Num: 34

Candidate Starts for Haunter_45:

(6, 29125), (10, 29155), (11, 29182), (13, 29251), (14, 29287), (Start: 34 @29551 has 50 MA's), (48, 29605), (53, 29641), (55, 29668), (63, 29713), (64, 29716), (70, 29761), (100, 29917), (107, 29953), (110, 29962), (111, 29965), (138, 30094), (142, 30109), (176, 30214), (178, 30220), (185, 30256),

Gene: Hawkeye_66 Start: 44818, Stop: 45684, Start Num: 40

Candidate Starts for Hawkeye_66:

(25, 44773), (Start: 35 @44806 has 39 MA's), (Start: 39 @44815 has 21 MA's), (Start: 40 @44818 has 4 MA's), (56, 44929), (61, 44962), (83, 45082), (85, 45094), (86, 45103), (88, 45112), (91, 45118), (107, 45208), (108, 45211), (111, 45220), (123, 45268), (142, 45364), (145, 45382), (164, 45436), (167, 45445), (190, 45556),

Gene: Helpful_62 Start: 44818, Stop: 45678, Start Num: 39

Candidate Starts for Helpful_62:

(21, 44746), (Start: 39 @44818 has 21 MA's), (47, 44863), (50, 44875), (52, 44893), (53, 44905), (55, 44929), (56, 44932), (83, 45085), (86, 45106), (88, 45115), (91, 45121), (107, 45211), (108, 45214), (111, 45223), (117, 45244), (139, 45355), (142, 45367), (145, 45385), (164, 45436), (167, 45445), (173, 45475), (174, 45478),

Gene: Hiddenleaf_45 Start: 29369, Stop: 30214, Start Num: 34

Candidate Starts for Hiddenleaf_45:

(1, 28808), (5, 28904), (6, 28943), (7, 28949), (10, 28973), (13, 29069), (14, 29105), (Start: 34 @29369 has 50 MA's), (48, 29423), (53, 29459), (55, 29486), (63, 29531), (64, 29534), (70, 29579), (100, 29735), (107, 29771), (110, 29780), (111, 29783), (138, 29912), (142, 29927), (176, 30032), (185, 30074),

Gene: HubbaBubba_60 Start: 46888, Stop: 46091, Start Num: 30

Candidate Starts for HubbaBubba_60:

(Start: 30 @46888 has 27 MA's), (48, 46813), (101, 46507), (106, 46477), (109, 46468), (112, 46459), (125, 46405), (134, 46360), (135, 46339), (139, 46327), (142, 46315), (151, 46297), (173, 46216), (191, 46138),

Gene: IDyn_64 Start: 48323, Stop: 47526, Start Num: 30

Candidate Starts for IDyn_64:

(23, 48350), (Start: 30 @48323 has 27 MA's), (48, 48248), (75, 48074), (101, 47942), (106, 47912), (109, 47903), (112, 47894), (125, 47840), (134, 47795), (135, 47774), (139, 47762), (142, 47750), (151, 47732), (173, 47651), (191, 47573),

Gene: Indlulamithi_69 Start: 49597, Stop: 50433, Start Num: 30

Candidate Starts for Indlulamithi_69:

(Start: 30 @49597 has 27 MA's), (Start: 40 @49612 has 4 MA's), (84, 49894), (91, 49930), (94, 49942), (96, 49951), (97, 49954), (108, 50023), (109, 50026), (118, 50059), (119, 50065), (125, 50086), (126, 50089), (135, 50152), (141, 50173), (142, 50176), (145, 50194), (151, 50212), (170, 50281), (174, 50302), (178, 50329), (189, 50377), (193, 50398),

Gene: JDawG_44 Start: 29786, Stop: 30631, Start Num: 34

Candidate Starts for JDawG_44:

(1, 29225), (5, 29321), (6, 29360), (13, 29486), (14, 29522), (Start: 34 @29786 has 50 MA's), (48, 29840), (53, 29876), (55, 29903), (63, 29948), (64, 29951), (70, 29996), (100, 30152), (107, 30188), (110, 30197), (111, 30200), (138, 30329), (142, 30344), (176, 30449), (185, 30491),

Gene: Jalebi_66 Start: 46242, Stop: 47312, Start Num: 35

Candidate Starts for Jalebi_66:

(Start: 35 @46242 has 39 MA's), (59, 46374), (67, 46422), (83, 46503), (85, 46515), (86, 46524), (87, 46533), (116, 46656), (120, 46677), (128, 46704), (142, 46785), (145, 46803), (151, 46824), (171, 46902), (187, 46986), (199, 47064), (205, 47151), (215, 47283),

Gene: Jamemuya19_67 Start: 44078, Stop: 45148, Start Num: 35

Candidate Starts for Jamemuya19_67:

(Start: 35 @44078 has 39 MA's), (54, 44174), (59, 44210), (67, 44258), (85, 44351), (86, 44360), (87, 44369), (116, 44492), (120, 44513), (128, 44540), (142, 44621), (145, 44639), (151, 44660), (171, 44738), (187, 44822), (215, 45119),

Gene: Jifall16_64 Start: 51698, Stop: 50877, Start Num: 30

Candidate Starts for Jifall16_64:

(Start: 30 @51698 has 27 MA's), (48, 51626), (82, 51404), (109, 51263), (112, 51254), (125, 51203), (132, 51167), (142, 51113), (151, 51095), (156, 51080), (183, 50957),

Gene: JingleBells_45 Start: 29520, Stop: 30365, Start Num: 34

Candidate Starts for JingleBells_45:

(6, 29094), (7, 29100), (10, 29124), (13, 29220), (14, 29256), (Start: 34 @29520 has 50 MA's), (48, 29574), (53, 29610), (55, 29637), (63, 29682), (64, 29685), (70, 29730), (100, 29886), (107, 29922), (110, 29931), (111, 29934), (138, 30063), (142, 30078), (176, 30183), (185, 30225),

Gene: Kabluna_68 Start: 51031, Stop: 50168, Start Num: 30

Candidate Starts for Kabluna_68:

(19, 51109), (Start: 30 @51031 has 27 MA's), (62, 50869), (82, 50743), (109, 50602), (118, 50569), (125, 50542), (135, 50476), (142, 50452), (151, 50434), (168, 50380), (175, 50350), (182, 50305),

Gene: KandZ_58 Start: 44615, Stop: 45475, Start Num: 39

Candidate Starts for KandZ_58:

(21, 44543), (Start: 39 @44615 has 21 MA's), (47, 44660), (50, 44672), (52, 44690), (53, 44702), (55, 44726), (56, 44729), (83, 44882), (86, 44903), (88, 44912), (91, 44918), (107, 45008), (108, 45011), (111, 45020), (117, 45041), (139, 45152), (142, 45164), (145, 45182), (164, 45233), (167, 45242), (173, 45272), (174, 45275),

Gene: Karate_44 Start: 30169, Stop: 31014, Start Num: 34

Candidate Starts for Karate_44:

(5, 29704), (6, 29743), (10, 29773), (14, 29905), (Start: 34 @30169 has 50 MA's), (48, 30223), (53, 30259), (55, 30286), (63, 30331), (64, 30334), (70, 30379), (100, 30535), (107, 30571), (110, 30580), (111, 30583), (138, 30712), (142, 30727), (176, 30832), (185, 30874),

Gene: Kate_46 Start: 30176, Stop: 31024, Start Num: 34

Candidate Starts for Kate_46:

(6, 29750), (10, 29780), (14, 29912), (Start: 34 @30176 has 50 MA's), (48, 30230), (53, 30266), (55, 30293), (63, 30338), (64, 30341), (70, 30386), (100, 30542), (107, 30578), (110, 30587), (111, 30590), (138, 30719), (142, 30734), (176, 30839), (185, 30881),

Gene: KidneyBean_65 Start: 51822, Stop: 51001, Start Num: 30

Candidate Starts for KidneyBean_65:

(Start: 30 @51822 has 27 MA's), (48, 51750), (82, 51528), (109, 51387), (112, 51378), (125, 51327), (132, 51291), (142, 51237), (151, 51219), (156, 51204), (183, 51081),

Gene: Kimchi1738_53 Start: 45055, Stop: 44291, Start Num: 34

Candidate Starts for Kimchi1738_53:

(Start: 34 @45055 has 50 MA's), (70, 44836), (132, 44554), (142, 44500), (163, 44455), (182, 44371),

Gene: Konstantine_76 Start: 53396, Stop: 54475, Start Num: 35

Candidate Starts for Konstantine_76:

(Start: 35 @53396 has 39 MA's), (42, 53414), (48, 53450), (64, 53558), (71, 53606), (74, 53627), (76, 53633), (86, 53693), (87, 53702), (91, 53708), (111, 53810), (119, 53843), (123, 53858), (131, 53897), (136, 53936), (142, 53954), (145, 53972), (146, 53975), (149, 53984), (169, 54050), (173, 54074), (204, 54266), (213, 54413), (214, 54416), (216, 54455), (217, 54464),

Gene: Kors_50 Start: 31190, Stop: 32032, Start Num: 34

Candidate Starts for Kors_50:

(Start: 34 @31190 has 50 MA's), (50, 31253), (62, 31337), (63, 31349), (64, 31352), (96, 31514), (107, 31586), (124, 31649), (127, 31658), (138, 31727), (142, 31742), (185, 31889),

Gene: Krampus_45 Start: 30176, Stop: 31024, Start Num: 34

Candidate Starts for Krampus_45:

(6, 29750), (10, 29780), (14, 29912), (Start: 34 @30176 has 50 MA's), (48, 30230), (53, 30266), (55, 30293), (63, 30338), (64, 30341), (70, 30386), (100, 30542), (107, 30578), (110, 30587), (111, 30590), (138, 30719), (142, 30734), (176, 30839), (185, 30881),

Gene: Kurt_65 Start: 52057, Stop: 51236, Start Num: 30

Candidate Starts for Kurt_65:

(23, 52084), (Start: 30 @52057 has 27 MA's), (48, 51985), (82, 51763), (109, 51622), (112, 51613), (125, 51562), (132, 51526), (142, 51472), (151, 51454), (156, 51439), (183, 51316),

Gene: Labelle_84 Start: 54626, Stop: 55684, Start Num: 33

Candidate Starts for Labelle_84:

(Start: 33 @54626 has 14 MA's), (49, 54683), (50, 54686), (53, 54716), (62, 54773), (64, 54788), (86, 54917), (92, 54941), (101, 54995), (105, 55019), (135, 55163), (136, 55169), (139, 55175), (141,

55184), (142, 55187), (145, 55205), (153, 55232), (169, 55292), (176, 55340), (187, 55388), (192, 55406), (198, 55466), (201, 55487), (208, 55595), (209, 55610),

Gene: Lambo_65 Start: 44896, Stop: 45987, Start Num: 35

Candidate Starts for Lambo_65:

(Start: 35 @44896 has 39 MA's), (59, 45028), (67, 45076), (85, 45169), (86, 45178), (87, 45187), (116, 45310), (120, 45331), (128, 45358), (142, 45439), (145, 45457), (151, 45478), (171, 45556), (187, 45640), (205, 45805), (206, 45814), (215, 45958),

Gene: LavAbarElk_67 Start: 44636, Stop: 45706, Start Num: 35

Candidate Starts for LavAbarElk_67:

(Start: 35 @44636 has 39 MA's), (59, 44768), (67, 44816), (83, 44897), (85, 44909), (86, 44918), (87, 44927), (116, 45050), (120, 45071), (128, 45098), (142, 45179), (145, 45197), (151, 45218), (171, 45296), (187, 45380), (205, 45545), (215, 45677),

Gene: Leopard_75 Start: 52296, Stop: 53216, Start Num: 31

Candidate Starts for Leopard_75:

(Start: 31 @52296 has 2 MA's), (Start: 40 @52311 has 4 MA's), (52, 52383), (53, 52395), (55, 52419), (56, 52422), (62, 52452), (71, 52515), (84, 52572), (86, 52590), (88, 52599), (91, 52605), (98, 52635), (131, 52794), (133, 52803), (134, 52806), (142, 52851), (145, 52869), (164, 52917), (175, 52965), (181, 53004), (197, 53109),

Gene: Lila22_68 Start: 45848, Stop: 46939, Start Num: 35

Candidate Starts for Lila22_68:

(Start: 35 @45848 has 39 MA's), (59, 45980), (67, 46028), (85, 46121), (86, 46130), (87, 46139), (116, 46262), (120, 46283), (128, 46310), (142, 46391), (145, 46409), (151, 46430), (171, 46508), (187, 46592), (205, 46757), (206, 46766), (215, 46910),

Gene: LilyPad_58 Start: 43001, Stop: 43912, Start Num: 33

Candidate Starts for LilyPad_58:

(Start: 33 @43001 has 14 MA's), (49, 43058), (50, 43061), (53, 43091), (79, 43241), (80, 43250), (86, 43295), (91, 43310), (94, 43322), (97, 43334), (102, 43373), (104, 43388), (109, 43406), (114, 43421), (135, 43532), (136, 43538), (142, 43556), (148, 43580), (150, 43586), (159, 43616), (177, 43709), (182, 43733), (203, 43883),

Gene: LittleFella_63 Start: 44521, Stop: 45468, Start Num: 33

Candidate Starts for LittleFella_63:

(Start: 33 @44521 has 14 MA's), (36, 44527), (55, 44644), (86, 44824), (91, 44839), (94, 44851), (124, 44992), (131, 45028), (142, 45085),

Gene: Lizz_64 Start: 46003, Stop: 45221, Start Num: 32

Candidate Starts for Lizz_64:

(Start: 32 @46003 has 8 MA's), (48, 45949), (51, 45940), (53, 45913), (55, 45889), (64, 45841), (84, 45736), (102, 45637), (103, 45631), (113, 45592), (118, 45571), (134, 45499), (142, 45454), (143, 45448), (155, 45430), (169, 45394), (180, 45331),

Gene: Lollipop1437_69 Start: 52704, Stop: 51925, Start Num: 24

Candidate Starts for Lollipop1437_69:

(Start: 24 @52704 has 11 MA's), (48, 52620), (109, 52272), (125, 52212), (132, 52176), (142, 52122), (151, 52104), (162, 52071), (165, 52062), (181, 51987), (183, 51975),

Gene: LordBart_49 Start: 31099, Stop: 31941, Start Num: 34

Candidate Starts for LordBart_49:

(Start: 34 @31099 has 50 MA's), (50, 31162), (62, 31246), (63, 31258), (64, 31261), (96, 31423), (100, 31459), (107, 31495), (124, 31558), (127, 31567), (138, 31636), (142, 31651), (185, 31798),

Gene: LuckyLeo_64 Start: 44646, Stop: 45731, Start Num: 35

Candidate Starts for LuckyLeo_64:

(Start: 35 @44646 has 39 MA's), (53, 44739), (59, 44778), (67, 44826), (86, 44928), (87, 44937), (116, 45060), (120, 45081), (124, 45096), (128, 45108), (142, 45189), (145, 45207), (151, 45228), (158, 45249), (171, 45306), (187, 45390), (214, 45690),

Gene: MacGully_73 Start: 51597, Stop: 50779, Start Num: 34

Candidate Starts for MacGully_73:

(16, 51750), (20, 51672), (Start: 34 @51597 has 50 MA's), (38, 51591), (48, 51537), (67, 51411), (86, 51294), (94, 51267), (97, 51255), (101, 51216), (107, 51183), (122, 51126), (151, 51003), (164, 50958), (195, 50805),

Gene: Madi_56 Start: 41882, Stop: 42811, Start Num: 33

Candidate Starts for Madi_56:

(Start: 33 @41882 has 14 MA's), (49, 41939), (53, 41972), (79, 42122), (80, 42131), (83, 42155), (86, 42176), (91, 42191), (94, 42203), (97, 42215), (102, 42254), (104, 42269), (114, 42302), (135, 42413), (136, 42419), (142, 42437), (148, 42461), (150, 42467), (159, 42497), (164, 42521), (182, 42614), (203, 42782),

Gene: Madruga_83 Start: 54580, Stop: 55638, Start Num: 33

Candidate Starts for Madruga_83:

(Start: 33 @54580 has 14 MA's), (49, 54637), (50, 54640), (53, 54670), (62, 54727), (64, 54742), (86, 54871), (92, 54895), (101, 54949), (105, 54973), (135, 55117), (136, 55123), (139, 55129), (141, 55138), (142, 55141), (145, 55159), (153, 55186), (169, 55246), (176, 55294), (187, 55342), (192, 55360), (198, 55420), (201, 55441), (208, 55549), (209, 55564),

Gene: Marietta_66 Start: 48435, Stop: 47638, Start Num: 30

Candidate Starts for Marietta_66:

(Start: 30 @48435 has 27 MA's), (48, 48360), (75, 48186), (101, 48054), (106, 48024), (109, 48015), (112, 48006), (118, 47979), (125, 47952), (134, 47907), (139, 47874), (142, 47862), (151, 47844), (173, 47763), (191, 47685),

Gene: Maselop_64 Start: 48423, Stop: 47572, Start Num: 34

Candidate Starts for Maselop_64:

(Start: 34 @48423 has 50 MA's), (48, 48363), (67, 48243), (69, 48231), (86, 48129), (88, 48120), (94, 48102), (97, 48090), (107, 48018), (142, 47862), (145, 47844), (151, 47838), (179, 47715), (188, 47679), (194, 47658),

Gene: Megatron06_73 Start: 53142, Stop: 54218, Start Num: 35

Candidate Starts for Megatron06_73:

(Start: 35 @53142 has 39 MA's), (38, 53148), (42, 53160), (48, 53196), (64, 53304), (71, 53352), (78, 53382), (86, 53439), (87, 53448), (91, 53454), (111, 53556), (119, 53589), (123, 53604), (131, 53643), (136, 53682), (142, 53700), (145, 53718), (146, 53721), (149, 53730), (169, 53796), (173, 53820), (204, 54009), (213, 54156), (214, 54159), (216, 54198), (217, 54207),

Gene: MerCougar_67 Start: 52388, Stop: 51525, Start Num: 30

Candidate Starts for MerCougar_67:

(Start: 30 @52388 has 27 MA's), (82, 52100), (94, 52049), (109, 51959), (120, 51917), (125, 51899), (132, 51863), (135, 51833), (142, 51809), (151, 51791),

Gene: Mima20_68 Start: 45405, Stop: 46475, Start Num: 35

Candidate Starts for Mima20_68:

(Start: 35 @45405 has 39 MA's), (59, 45537), (67, 45585), (83, 45666), (85, 45678), (86, 45687), (87, 45696), (116, 45819), (120, 45840), (128, 45867), (142, 45948), (145, 45966), (151, 45987), (171, 46065), (187, 46149), (205, 46314), (215, 46446),

Gene: MoiGyank_70 Start: 46170, Stop: 47240, Start Num: 35

Candidate Starts for MoiGyank_70:

(Start: 35 @46170 has 39 MA's), (59, 46302), (67, 46350), (83, 46431), (85, 46443), (86, 46452), (87, 46461), (116, 46584), (120, 46605), (128, 46632), (142, 46713), (145, 46731), (151, 46752), (171, 46830), (187, 46914), (199, 46992), (205, 47079), (215, 47211),

Gene: MontyDev_72 Start: 52628, Stop: 53458, Start Num: 29

Candidate Starts for MontyDev_72:

(Start: 29 @52628 has 9 MA's), (44, 52673), (49, 52703), (53, 52736), (55, 52760), (64, 52808), (68, 52829), (83, 52922), (88, 52952), (90, 52955), (93, 52967), (115, 53051), (121, 53081), (136, 53165), (139, 53171), (142, 53183), (145, 53201), (152, 53228), (153, 53231), (174, 53327), (176, 53348), (182, 53375),

Gene: Mopey_60 Start: 44493, Stop: 45353, Start Num: 39

Candidate Starts for Mopey_60:

(21, 44421), (Start: 39 @44493 has 21 MA's), (47, 44538), (50, 44550), (52, 44568), (53, 44580), (55, 44604), (56, 44607), (83, 44760), (86, 44781), (88, 44790), (91, 44796), (107, 44886), (108, 44889), (111, 44898), (117, 44919), (139, 45030), (142, 45042), (145, 45060), (164, 45111), (167, 45120), (173, 45150), (174, 45153),

Gene: MortySmith_43 Start: 29204, Stop: 30049, Start Num: 34

Candidate Starts for MortySmith_43:

(6, 28778), (10, 28808), (11, 28835), (13, 28904), (14, 28940), (Start: 34 @29204 has 50 MA's), (48, 29258), (53, 29294), (55, 29321), (63, 29366), (64, 29369), (70, 29414), (100, 29570), (107, 29606), (110, 29615), (111, 29618), (138, 29747), (142, 29762), (176, 29867), (185, 29909),

Gene: MrMiyagi_77 Start: 49209, Stop: 50072, Start Num: 22

Candidate Starts for MrMiyagi_77:

(Start: 22 @49209 has 2 MA's), (56, 49395), (63, 49437), (64, 49440), (77, 49518), (81, 49548), (91, 49590), (97, 49614), (106, 49677), (109, 49686), (115, 49704), (119, 49725), (140, 49827), (142, 49836), (148, 49860), (161, 49893), (166, 49920), (172, 49950), (174, 49959), (177, 49983), (189, 50034),

Gene: NadineRae_65 Start: 48044, Stop: 47247, Start Num: 30

Candidate Starts for NadineRae_65:

(Start: 30 @48044 has 27 MA's), (48, 47969), (101, 47663), (106, 47633), (109, 47624), (112, 47615), (125, 47561), (134, 47516), (135, 47495), (139, 47483), (142, 47471), (151, 47453), (173, 47372), (191, 47294),

Gene: NarutoRun_45 Start: 30144, Stop: 30992, Start Num: 34

Candidate Starts for NarutoRun_45:

(6, 29718), (10, 29748), (14, 29880), (Start: 34 @30144 has 50 MA's), (48, 30198), (53, 30234), (55, 30261), (63, 30306), (64, 30309), (70, 30354), (100, 30510), (107, 30546), (110, 30555), (111, 30558), (138, 30687), (142, 30702), (176, 30807), (185, 30849),

Gene: NatB6_65 Start: 51126, Stop: 50305, Start Num: 30

Candidate Starts for NatB6_65:

(23, 51153), (Start: 30 @51126 has 27 MA's), (48, 51054), (82, 50832), (109, 50691), (112, 50682), (125, 50631), (132, 50595), (142, 50541), (151, 50523), (156, 50508), (183, 50385),

Gene: Neptune_45 Start: 30144, Stop: 30992, Start Num: 34

Candidate Starts for Neptune_45:

(6, 29718), (10, 29748), (14, 29880), (Start: 34 @30144 has 50 MA's), (48, 30198), (53, 30234), (55, 30261), (63, 30306), (64, 30309), (70, 30354), (100, 30510), (107, 30546), (110, 30555), (111, 30558), (138, 30687), (142, 30702), (176, 30807), (185, 30849),

Gene: Nilo_72 Start: 52985, Stop: 53815, Start Num: 29

Candidate Starts for Nilo_72:

(Start: 29 @52985 has 9 MA's), (44, 53030), (49, 53060), (53, 53093), (55, 53117), (64, 53165), (68, 53186), (83, 53279), (88, 53309), (90, 53312), (93, 53324), (115, 53408), (121, 53438), (136, 53522), (139, 53528), (142, 53540), (145, 53558), (152, 53585), (153, 53588), (174, 53684), (176, 53705), (182, 53732),

Gene: NorManre_71 Start: 46296, Stop: 47387, Start Num: 35

Candidate Starts for NorManre_71:

(Start: 35 @46296 has 39 MA's), (59, 46428), (67, 46476), (85, 46569), (86, 46578), (87, 46587), (116, 46710), (120, 46731), (128, 46758), (142, 46839), (145, 46857), (151, 46878), (171, 46956), (187, 47040), (205, 47205), (206, 47214), (215, 47358),

Gene: NosilaM_67 Start: 51702, Stop: 50839, Start Num: 30

Candidate Starts for NosilaM_67:

(Start: 30 @51702 has 27 MA's), (62, 51540), (82, 51414), (109, 51273), (118, 51240), (125, 51213), (127, 51207), (135, 51147), (142, 51123), (151, 51105), (168, 51051), (175, 51021), (182, 50976),

Gene: Nova_58 Start: 44945, Stop: 45805, Start Num: 39

Candidate Starts for Nova_58:

(21, 44873), (Start: 39 @44945 has 21 MA's), (47, 44990), (50, 45002), (52, 45020), (53, 45032), (55, 45056), (56, 45059), (83, 45212), (86, 45233), (88, 45242), (91, 45248), (107, 45338), (108, 45341), (111, 45350), (117, 45371), (139, 45482), (142, 45494), (145, 45512), (164, 45563), (167, 45572), (173, 45602), (174, 45605),

Gene: NovaSharks_69 Start: 44064, Stop: 45134, Start Num: 35

Candidate Starts for NovaSharks_69:

(Start: 35 @44064 has 39 MA's), (54, 44160), (59, 44196), (67, 44244), (85, 44337), (86, 44346), (87, 44355), (116, 44478), (120, 44499), (128, 44526), (142, 44607), (145, 44625), (151, 44646), (171, 44724), (187, 44808), (215, 45105),

Gene: NovumRegina_65 Start: 51435, Stop: 50614, Start Num: 30

Candidate Starts for NovumRegina_65:

(23, 51462), (Start: 30 @51435 has 27 MA's), (48, 51363), (82, 51141), (109, 51000), (112, 50991), (125, 50940), (132, 50904), (142, 50850), (151, 50832), (156, 50817), (183, 50694),

Gene: Oaker_72 Start: 53171, Stop: 54247, Start Num: 35

Candidate Starts for Oaker_72:

(Start: 35 @53171 has 39 MA's), (38, 53177), (48, 53225), (64, 53333), (71, 53381), (78, 53411), (86, 53468), (87, 53477), (91, 53483), (111, 53585), (119, 53618), (123, 53633), (131, 53672), (136, 53711), (142, 53729), (145, 53747), (146, 53750), (149, 53759), (169, 53825), (173, 53849), (204, 54038), (213, 54185), (214, 54188), (216, 54227), (217, 54236),

Gene: Onyinye_76 Start: 52178, Stop: 53083, Start Num: 40

Candidate Starts for Onyinye_76:

(Start: 31 @52163 has 2 MA's), (Start: 40 @52178 has 4 MA's), (52, 52250), (53, 52262), (55, 52286), (56, 52289), (62, 52319), (71, 52382), (84, 52439), (86, 52457), (88, 52466), (91, 52472), (98, 52502), (131, 52661), (133, 52670), (134, 52673), (142, 52718), (145, 52736), (164, 52784), (175, 52832), (181, 52871), (197, 52976), (202, 53024),

Gene: OtterstedtS21_67 Start: 45230, Stop: 46321, Start Num: 35

Candidate Starts for OtterstedtS21_67:

(Start: 35 @45230 has 39 MA's), (59, 45362), (67, 45410), (83, 45491), (85, 45503), (86, 45512), (87, 45521), (116, 45644), (120, 45665), (128, 45692), (142, 45773), (145, 45791), (151, 45812), (171, 45890), (187, 45974), (205, 46139), (206, 46148), (215, 46292),

Gene: Outis_66 Start: 51894, Stop: 51040, Start Num: 33

Candidate Starts for Outis_66:

(Start: 33 @51894 has 14 MA's), (82, 51615), (94, 51564), (109, 51474), (120, 51432), (125, 51414), (132, 51378), (135, 51348), (142, 51324), (151, 51306),

Gene: OverHedge_45 Start: 30134, Stop: 30982, Start Num: 34

Candidate Starts for OverHedge_45:

(6, 29708), (10, 29738), (14, 29870), (Start: 34 @30134 has 50 MA's), (48, 30188), (53, 30224), (55, 30251), (63, 30296), (64, 30299), (70, 30344), (100, 30500), (107, 30536), (110, 30545), (111, 30548), (138, 30677), (142, 30692), (176, 30797), (185, 30839),

Gene: P1201_70 Start: 52915, Stop: 52136, Start Num: 36

Candidate Starts for P1201_70:

(36, 52915), (48, 52858), (49, 52855), (72, 52684), (86, 52621), (123, 52456), (134, 52405), (142, 52360), (143, 52354), (155, 52336),

Gene: PBI1_56 Start: 44420, Stop: 45280, Start Num: 39

Candidate Starts for PBI1_56:

(21, 44348), (Start: 39 @44420 has 21 MA's), (47, 44465), (50, 44477), (52, 44495), (53, 44507), (55, 44531), (56, 44534), (83, 44687), (86, 44708), (88, 44717), (91, 44723), (107, 44813), (108, 44816), (111, 44825), (117, 44846), (139, 44957), (142, 44969), (145, 44987), (164, 45038), (167, 45047), (173, 45077), (174, 45080),

Gene: PHTowN_64 Start: 46001, Stop: 45219, Start Num: 32

Candidate Starts for PHTowN_64:

(Start: 32 @46001 has 8 MA's), (48, 45947), (51, 45938), (53, 45911), (55, 45887), (64, 45839), (84, 45734), (102, 45635), (103, 45629), (113, 45590), (118, 45569), (134, 45497), (142, 45452), (143, 45446), (155, 45428), (169, 45392), (180, 45329),

Gene: PLOT_59 Start: 44472, Stop: 45332, Start Num: 39

Candidate Starts for PLOT_59:

(21, 44400), (Start: 39 @44472 has 21 MA's), (47, 44517), (50, 44529), (52, 44547), (53, 44559), (55, 44583), (56, 44586), (83, 44739), (86, 44760), (88, 44769), (91, 44775), (107, 44865), (108, 44868), (111, 44877), (117, 44898), (139, 45009), (142, 45021), (145, 45039), (164, 45090), (167, 45099), (173, 45129), (174, 45132),

Gene: Papyrus_70 Start: 52595, Stop: 53425, Start Num: 29

Candidate Starts for Papyrus_70:

(Start: 29 @52595 has 9 MA's), (44, 52640), (49, 52670), (53, 52703), (55, 52727), (64, 52775), (68, 52796), (83, 52889), (88, 52919), (90, 52922), (93, 52934), (115, 53018), (121, 53048), (136, 53132), (139, 53138), (142, 53150), (145, 53168), (152, 53195), (153, 53198), (174, 53294), (176, 53315),

(182, 53342),

Gene: ParvusTarda_66 Start: 44602, Stop: 45693, Start Num: 35

Candidate Starts for ParvusTarda_66:

(Start: 35 @44602 has 39 MA's), (59, 44734), (67, 44782), (85, 44875), (86, 44884), (87, 44893), (116, 45016), (120, 45037), (128, 45064), (142, 45145), (145, 45163), (151, 45184), (171, 45262), (187, 45346), (205, 45511), (206, 45520), (215, 45664),

Gene: Patience_85 Start: 55493, Stop: 56551, Start Num: 33

Candidate Starts for Patience_85:

(Start: 33 @55493 has 14 MA's), (49, 55550), (50, 55553), (53, 55583), (62, 55640), (64, 55655), (86, 55784), (92, 55808), (101, 55862), (105, 55886), (135, 56030), (136, 56036), (139, 56042), (141, 56051), (142, 56054), (145, 56072), (153, 56099), (169, 56159), (176, 56207), (187, 56255), (192, 56273), (198, 56333), (201, 56354), (208, 56462), (209, 56477),

Gene: Patio_67 Start: 51761, Stop: 50982, Start Num: 24

Candidate Starts for Patio_67:

(Start: 24 @51761 has 11 MA's), (48, 51677), (109, 51329), (125, 51269), (132, 51233), (142, 51179), (151, 51161), (162, 51128), (165, 51119), (181, 51044), (183, 51032),

Gene: Patos_71 Start: 46295, Stop: 47386, Start Num: 35

Candidate Starts for Patos_71:

(Start: 35 @46295 has 39 MA's), (59, 46427), (67, 46475), (85, 46568), (86, 46577), (87, 46586), (116, 46709), (120, 46730), (128, 46757), (142, 46838), (145, 46856), (151, 46877), (171, 46955), (187, 47039), (205, 47204), (206, 47213), (215, 47357),

Gene: Penelope2018_59 Start: 44490, Stop: 45350, Start Num: 39

Candidate Starts for Penelope2018_59:

(21, 44418), (Start: 39 @44490 has 21 MA's), (47, 44535), (50, 44547), (52, 44565), (53, 44577), (55, 44601), (56, 44604), (83, 44757), (86, 44778), (88, 44787), (91, 44793), (107, 44883), (108, 44886), (111, 44895), (117, 44916), (139, 45027), (142, 45039), (145, 45057), (164, 45108), (167, 45117), (173, 45147), (174, 45150),

Gene: PeteyPab_53 Start: 45339, Stop: 44575, Start Num: 34

Candidate Starts for PeteyPab_53:

(Start: 34 @45339 has 50 MA's), (70, 45120), (86, 45045), (132, 44838), (142, 44784), (163, 44739), (182, 44655),

Gene: Phalaborwa_62 Start: 44931, Stop: 45791, Start Num: 39

Candidate Starts for Phalaborwa_62:

(21, 44859), (Start: 39 @44931 has 21 MA's), (50, 44988), (52, 45006), (53, 45018), (55, 45042), (56, 45045), (83, 45198), (86, 45219), (88, 45228), (91, 45234), (107, 45324), (108, 45327), (111, 45336), (117, 45357), (139, 45468), (142, 45480), (145, 45498), (164, 45549), (167, 45558), (174, 45591),

Gene: Pharpay_45 Start: 30189, Stop: 31037, Start Num: 34

Candidate Starts for Pharpay_45:

(6, 29763), (10, 29793), (14, 29925), (Start: 34 @30189 has 50 MA's), (48, 30243), (53, 30279), (55, 30306), (63, 30351), (64, 30354), (70, 30399), (100, 30555), (107, 30591), (110, 30600), (111, 30603), (138, 30732), (142, 30747), (176, 30852), (185, 30894),

Gene: Phomeo_64 Start: 51694, Stop: 50873, Start Num: 30

Candidate Starts for Phomeo_64:

(Start: 30 @51694 has 27 MA's), (48, 51622), (82, 51400), (109, 51259), (112, 51250), (125, 51199), (132, 51163), (142, 51109), (151, 51091), (156, 51076), (183, 50953),

Gene: Phreeze_71 Start: 52138, Stop: 53217, Start Num: 35

Candidate Starts for Phreeze_71:

(Start: 35 @52138 has 39 MA's), (38, 52144), (48, 52192), (64, 52300), (71, 52348), (78, 52378), (86, 52435), (87, 52444), (91, 52450), (111, 52552), (119, 52585), (123, 52600), (131, 52639), (136, 52678), (142, 52696), (145, 52714), (146, 52717), (149, 52726), (169, 52792), (173, 52816), (204, 53008), (213, 53155), (214, 53158), (216, 53197), (217, 53206),

Gene: PhunaPhoke_45 Start: 30162, Stop: 31010, Start Num: 34

Candidate Starts for PhunaPhoke_45:

(6, 29736), (10, 29766), (14, 29898), (Start: 34 @30162 has 50 MA's), (48, 30216), (53, 30252), (55, 30279), (63, 30324), (64, 30327), (70, 30372), (100, 30528), (107, 30564), (110, 30573), (111, 30576), (138, 30705), (142, 30720), (176, 30825), (185, 30867),

Gene: Pleakley_74 Start: 51254, Stop: 50463, Start Num: 24

Candidate Starts for Pleakley_74:

(Start: 24 @51254 has 11 MA's), (48, 51158), (86, 50924), (109, 50813), (112, 50804), (117, 50786), (119, 50774), (125, 50753), (142, 50663), (151, 50645), (156, 50630), (173, 50570),

Gene: Polyuyki_64 Start: 48412, Stop: 47561, Start Num: 34

Candidate Starts for Polyuyki_64:

(Start: 34 @48412 has 50 MA's), (48, 48352), (67, 48232), (69, 48220), (86, 48118), (88, 48109), (94, 48091), (97, 48079), (107, 48007), (142, 47851), (145, 47833), (151, 47827), (179, 47704), (188, 47668), (194, 47647),

Gene: PotatoChip_54 Start: 45341, Stop: 44577, Start Num: 34

Candidate Starts for PotatoChip_54:

(Start: 34 @45341 has 50 MA's), (70, 45122), (86, 45047), (132, 44840), (142, 44786), (163, 44741), (182, 44657),

Gene: Potty_45 Start: 30167, Stop: 31015, Start Num: 34

Candidate Starts for Potty_45:

(6, 29741), (10, 29771), (14, 29903), (Start: 34 @30167 has 50 MA's), (48, 30221), (53, 30257), (55, 30284), (63, 30329), (64, 30332), (70, 30377), (100, 30533), (107, 30569), (110, 30578), (111, 30581), (138, 30710), (142, 30725), (176, 30830), (185, 30872),

Gene: Poultruss_44 Start: 30482, Stop: 31330, Start Num: 34

Candidate Starts for Poultruss_44:

(1, 29921), (5, 30017), (6, 30056), (10, 30086), (13, 30182), (14, 30218), (Start: 34 @30482 has 50 MA's), (48, 30536), (53, 30572), (55, 30599), (63, 30644), (64, 30647), (70, 30692), (100, 30848), (107, 30884), (110, 30893), (111, 30896), (138, 31025), (142, 31040), (176, 31145), (185, 31187),

Gene: Prager_59 Start: 44509, Stop: 45369, Start Num: 39

Candidate Starts for Prager_59:

(21, 44437), (Start: 39 @44509 has 21 MA's), (47, 44554), (50, 44566), (52, 44584), (53, 44596), (55, 44620), (56, 44623), (83, 44776), (86, 44797), (88, 44806), (91, 44812), (107, 44902), (108, 44905), (111, 44914), (117, 44935), (139, 45046), (142, 45058), (145, 45076), (164, 45127), (167, 45136), (173, 45166), (174, 45169),

Gene: Predator_71 Start: 51699, Stop: 52709, Start Num: 35

Candidate Starts for Predator_71:

(Start: 35 @51699 has 39 MA's), (38, 51705), (48, 51753), (50, 51759), (64, 51861), (71, 51909), (86, 51996), (87, 52005), (91, 52011), (96, 52032), (107, 52101), (111, 52113), (118, 52140), (119, 52146), (123, 52161), (131, 52200), (136, 52239), (142, 52257), (145, 52275), (146, 52278), (166, 52350), (169, 52362), (211, 52683),

Gene: Puissant_73 Start: 52254, Stop: 53387, Start Num: 35

Candidate Starts for Puissant_73:

(Start: 35 @52254 has 39 MA's), (38, 52260), (48, 52308), (64, 52416), (71, 52464), (78, 52494), (86, 52551), (87, 52560), (91, 52566), (111, 52668), (119, 52701), (123, 52716), (131, 52755), (136, 52794), (142, 52812), (145, 52830), (146, 52833), (149, 52842), (169, 52908), (173, 52932), (210, 53289), (216, 53367),

Gene: Rachella_45 Start: 30170, Stop: 31018, Start Num: 34

Candidate Starts for Rachella_45:

(6, 29744), (10, 29774), (14, 29906), (Start: 34 @30170 has 50 MA's), (48, 30224), (53, 30260), (55, 30287), (63, 30332), (64, 30335), (70, 30380), (100, 30536), (107, 30572), (110, 30581), (111, 30584), (138, 30713), (142, 30728), (176, 30833), (185, 30875),

Gene: Ranch_67 Start: 44074, Stop: 45165, Start Num: 35

Candidate Starts for Ranch_67:

(Start: 35 @44074 has 39 MA's), (59, 44206), (67, 44254), (85, 44347), (86, 44356), (87, 44365), (116, 44488), (120, 44509), (128, 44536), (142, 44617), (145, 44635), (151, 44656), (171, 44734), (187, 44818), (205, 44983), (206, 44992), (215, 45136),

Gene: RazorC_67 Start: 44218, Stop: 45288, Start Num: 35

Candidate Starts for RazorC_67:

(Start: 35 @44218 has 39 MA's), (54, 44314), (59, 44350), (67, 44398), (85, 44491), (86, 44500), (87, 44509), (116, 44632), (120, 44653), (128, 44680), (142, 44761), (145, 44779), (151, 44800), (171, 44878), (187, 44962), (215, 45259),

Gene: RedRaider_72 Start: 54080, Stop: 53301, Start Num: 24

Candidate Starts for RedRaider_72:

(Start: 24 @54080 has 11 MA's), (48, 53996), (73, 53831), (109, 53648), (125, 53588), (132, 53552), (142, 53498), (151, 53480), (162, 53447), (165, 53438), (181, 53363), (183, 53351),

Gene: Rie18_45 Start: 29667, Stop: 30512, Start Num: 34

Candidate Starts for Rie18_45:

(8, 29262), (10, 29271), (Start: 34 @29667 has 50 MA's), (46, 29709), (48, 29721), (53, 29757), (55, 29784), (63, 29829), (64, 29832), (70, 29877), (100, 30033), (107, 30069), (110, 30078), (111, 30081), (138, 30210), (142, 30225), (176, 30330), (185, 30372),

Gene: RikSengupta_49 Start: 31227, Stop: 32069, Start Num: 34

Candidate Starts for RikSengupta_49:

(15, 30993), (Start: 34 @31227 has 50 MA's), (50, 31290), (62, 31374), (63, 31386), (64, 31389), (96, 31551), (100, 31587), (107, 31623), (124, 31686), (127, 31695), (138, 31764), (142, 31779), (185, 31926),

Gene: Riparian_72 Start: 52432, Stop: 53262, Start Num: 29

Candidate Starts for Riparian_72:

(Start: 29 @52432 has 9 MA's), (44, 52477), (49, 52507), (53, 52540), (55, 52564), (64, 52612), (68, 52633), (83, 52726), (88, 52756), (90, 52759), (93, 52771), (115, 52855), (121, 52885), (136, 52969), (139, 52975), (142, 52987), (145, 53005), (152, 53032), (153, 53035), (174, 53131), (176, 53152), (182, 53179),

Gene: Rooney_64 Start: 46156, Stop: 45371, Start Num: 32

Candidate Starts for Rooney_64:

(Start: 32 @46156 has 8 MA's), (48, 46102), (51, 46093), (53, 46066), (55, 46042), (64, 45994), (84, 45889), (102, 45790), (103, 45784), (113, 45745), (118, 45724), (134, 45652), (142, 45607), (143, 45601), (155, 45583), (164, 45556), (180, 45484),

Gene: Rope_70 Start: 52588, Stop: 53418, Start Num: 29

Candidate Starts for Rope_70:

(Start: 29 @52588 has 9 MA's), (44, 52633), (49, 52663), (53, 52696), (55, 52720), (64, 52768), (68, 52789), (83, 52882), (88, 52912), (90, 52915), (93, 52927), (115, 53011), (121, 53041), (136, 53125), (139, 53131), (142, 53143), (145, 53161), (152, 53188), (153, 53191), (174, 53287), (176, 53308), (182, 53335),

Gene: Rumi_68 Start: 43761, Stop: 44831, Start Num: 35

Candidate Starts for Rumi_68:

(Start: 35 @43761 has 39 MA's), (54, 43857), (59, 43893), (67, 43941), (85, 44034), (86, 44043), (87, 44052), (116, 44175), (120, 44196), (128, 44223), (142, 44304), (145, 44322), (151, 44343), (171, 44421), (187, 44505), (215, 44802),

Gene: Sadboi_68 Start: 45890, Stop: 46960, Start Num: 35

Candidate Starts for Sadboi_68:

(Start: 35 @45890 has 39 MA's), (59, 46022), (67, 46070), (85, 46163), (86, 46172), (87, 46181), (116, 46304), (120, 46325), (128, 46352), (142, 46433), (145, 46451), (151, 46472), (171, 46550), (187, 46634), (205, 46799), (215, 46931),

Gene: Sampudon_67 Start: 46242, Stop: 47312, Start Num: 35

Candidate Starts for Sampudon_67:

(Start: 35 @46242 has 39 MA's), (59, 46374), (67, 46422), (83, 46503), (85, 46515), (86, 46524), (87, 46533), (116, 46656), (120, 46677), (128, 46704), (142, 46785), (145, 46803), (151, 46824), (171, 46902), (187, 46986), (199, 47064), (205, 47151), (215, 47283),

Gene: Scuba_75 Start: 51339, Stop: 50548, Start Num: 24

Candidate Starts for Scuba_75:

(Start: 24 @51339 has 11 MA's), (48, 51243), (86, 51009), (109, 50898), (112, 50889), (119, 50859), (125, 50838), (142, 50748), (151, 50730), (156, 50715), (173, 50655),

Gene: Send513_70 Start: 52966, Stop: 53796, Start Num: 29

Candidate Starts for Send513_70:

(Start: 29 @52966 has 9 MA's), (44, 53011), (49, 53041), (53, 53074), (55, 53098), (64, 53146), (68, 53167), (83, 53260), (88, 53290), (90, 53293), (115, 53389), (121, 53419), (136, 53503), (139, 53509), (142, 53521), (145, 53539), (152, 53566), (153, 53569), (174, 53665), (176, 53686), (182, 53713),

Gene: ShakeNBake_64 Start: 46028, Stop: 45246, Start Num: 32

Candidate Starts for ShakeNBake_64:

(Start: 32 @46028 has 8 MA's), (48, 45974), (51, 45965), (53, 45938), (55, 45914), (64, 45866), (84, 45761), (102, 45662), (103, 45656), (113, 45617), (118, 45596), (134, 45524), (142, 45479), (143, 45473), (155, 45455), (169, 45419), (180, 45356),

Gene: Sienna_56 Start: 41882, Stop: 42811, Start Num: 33

Candidate Starts for Sienna_56:

(Start: 33 @41882 has 14 MA's), (49, 41939), (53, 41972), (79, 42122), (80, 42131), (83, 42155), (86, 42176), (91, 42191), (94, 42203), (97, 42215), (102, 42254), (104, 42269), (114, 42302), (135, 42413),

(136, 42419), (142, 42437), (148, 42461), (150, 42467), (159, 42497), (164, 42521), (182, 42614), (203, 42782),

Gene: SilentWarrior_45 Start: 29382, Stop: 30230, Start Num: 34

Candidate Starts for SilentWarrior_45:

(1, 28821), (5, 28917), (6, 28956), (10, 28986), (14, 29118), (Start: 34 @29382 has 50 MA's), (48, 29436), (53, 29472), (55, 29499), (63, 29544), (64, 29547), (70, 29592), (100, 29748), (107, 29784), (110, 29793), (111, 29796), (138, 29925), (142, 29940), (176, 30045), (185, 30087),

Gene: SirHarley_61 Start: 44932, Stop: 45792, Start Num: 39

Candidate Starts for SirHarley_61:

(21, 44860), (Start: 39 @44932 has 21 MA's), (47, 44977), (50, 44989), (52, 45007), (53, 45019), (55, 45043), (56, 45046), (83, 45199), (86, 45220), (88, 45229), (91, 45235), (107, 45325), (108, 45328), (111, 45337), (117, 45358), (139, 45469), (142, 45481), (145, 45499), (164, 45550), (167, 45559), (173, 45589), (174, 45592),

Gene: Skysand_67 Start: 52239, Stop: 51460, Start Num: 24

Candidate Starts for Skysand_67:

(Start: 24 @52239 has 11 MA's), (48, 52155), (60, 52080), (109, 51807), (125, 51747), (132, 51711), (142, 51657), (151, 51639), (162, 51606), (165, 51597), (181, 51522), (183, 51510),

Gene: Snakehole_45 Start: 29347, Stop: 30192, Start Num: 34

Candidate Starts for Snakehole_45:

(6, 28921), (7, 28927), (10, 28951), (14, 29083), (Start: 34 @29347 has 50 MA's), (48, 29401), (53, 29437), (55, 29464), (63, 29509), (64, 29512), (70, 29557), (100, 29713), (107, 29749), (110, 29758), (111, 29761), (138, 29890), (142, 29905), (176, 30010), (185, 30052),

Gene: Sparcetus_49 Start: 31104, Stop: 31946, Start Num: 34

Candidate Starts for Sparcetus_49:

(Start: 34 @31104 has 50 MA's), (50, 31167), (62, 31251), (63, 31263), (64, 31266), (96, 31428), (100, 31464), (107, 31500), (124, 31563), (127, 31572), (138, 31641), (142, 31656), (185, 31803),

Gene: StarStruck_66 Start: 51894, Stop: 51040, Start Num: 33

Candidate Starts for StarStruck_66:

(Start: 33 @51894 has 14 MA's), (82, 51615), (94, 51564), (109, 51474), (120, 51432), (125, 51414), (132, 51378), (135, 51348), (142, 51324), (151, 51306),

Gene: Stickynote_54 Start: 45345, Stop: 44581, Start Num: 34

Candidate Starts for Stickynote_54:

(Start: 34 @45345 has 50 MA's), (70, 45126), (132, 44844), (142, 44790), (163, 44745), (182, 44661),

Gene: Stormer_67 Start: 43765, Stop: 44835, Start Num: 35

Candidate Starts for Stormer_67:

(Start: 35 @43765 has 39 MA's), (54, 43861), (59, 43897), (67, 43945), (85, 44038), (86, 44047), (87, 44056), (116, 44179), (120, 44200), (128, 44227), (142, 44308), (145, 44326), (151, 44347), (171, 44425), (187, 44509), (215, 44806),

Gene: Sukkupi_66 Start: 50275, Stop: 49478, Start Num: 30

Candidate Starts for Sukkupi_66:

(17, 50374), (23, 50302), (Start: 30 @50275 has 27 MA's), (48, 50200), (75, 50026), (101, 49894), (106, 49864), (109, 49855), (112, 49846), (118, 49819), (125, 49792), (134, 49747), (139, 49714), (142, 49702), (151, 49684), (173, 49603), (191, 49525),

Gene: SuperSulley_67 Start: 52253, Stop: 51390, Start Num: 30

Candidate Starts for SuperSulley_67:

(19, 52331), (Start: 30 @52253 has 27 MA's), (62, 52091), (82, 51965), (109, 51824), (118, 51791), (125, 51764), (127, 51758), (135, 51698), (142, 51674), (151, 51656), (168, 51602), (175, 51572), (182, 51527),

Gene: Suzy_56 Start: 43075, Stop: 44001, Start Num: 33

Candidate Starts for Suzy_56:

(Start: 33 @43075 has 14 MA's), (49, 43132), (53, 43165), (79, 43315), (80, 43324), (86, 43369), (91, 43384), (94, 43396), (97, 43408), (102, 43447), (104, 43462), (114, 43495), (135, 43606), (136, 43612), (142, 43630), (148, 43654), (150, 43660), (157, 43684), (159, 43690), (164, 43714), (177, 43783), (182, 43807), (203, 43972),

Gene: Tedro_45 Start: 29601, Stop: 30446, Start Num: 34

Candidate Starts for Tedro_45:

(6, 29175), (10, 29205), (13, 29301), (14, 29337), (Start: 34 @29601 has 50 MA's), (48, 29655), (53, 29691), (55, 29718), (63, 29763), (64, 29766), (70, 29811), (100, 29967), (107, 30003), (110, 30012), (111, 30015), (138, 30144), (142, 30159), (176, 30264), (185, 30306),

Gene: Terapin_57 Start: 41806, Stop: 42735, Start Num: 33

Candidate Starts for Terapin_57:

(Start: 33 @41806 has 14 MA's), (49, 41863), (53, 41896), (79, 42046), (80, 42055), (83, 42079), (86, 42100), (91, 42115), (94, 42127), (97, 42139), (102, 42178), (104, 42193), (114, 42226), (135, 42337), (136, 42343), (142, 42361), (148, 42385), (150, 42391), (159, 42421), (164, 42445), (182, 42538), (203, 42706),

Gene: Thoth_59 Start: 44488, Stop: 45348, Start Num: 39

Candidate Starts for Thoth_59:

(21, 44416), (Start: 39 @44488 has 21 MA's), (47, 44533), (50, 44545), (52, 44563), (53, 44575), (55, 44599), (56, 44602), (83, 44755), (86, 44776), (88, 44785), (91, 44791), (107, 44881), (108, 44884), (111, 44893), (117, 44914), (139, 45025), (142, 45037), (145, 45055), (164, 45106), (167, 45115), (173, 45145), (174, 45148),

Gene: Thumb_73 Start: 52573, Stop: 53652, Start Num: 35

Candidate Starts for Thumb_73:

(Start: 35 @52573 has 39 MA's), (38, 52579), (48, 52627), (64, 52735), (71, 52783), (78, 52813), (86, 52870), (87, 52879), (91, 52885), (111, 52987), (119, 53020), (123, 53035), (131, 53074), (136, 53113), (142, 53131), (145, 53149), (146, 53152), (149, 53161), (169, 53227), (173, 53251), (204, 53443), (213, 53590), (214, 53593), (216, 53632), (217, 53641),

Gene: Tillicus_63 Start: 44587, Stop: 45672, Start Num: 35

Candidate Starts for Tillicus_63:

(Start: 35 @44587 has 39 MA's), (52, 44668), (53, 44680), (55, 44704), (59, 44719), (67, 44767), (85, 44860), (86, 44869), (87, 44878), (116, 45001), (120, 45022), (128, 45049), (142, 45130), (145, 45148), (151, 45169), (158, 45190), (171, 45247), (187, 45331),

Gene: TinyMiny_49 Start: 31125, Stop: 31967, Start Num: 34

Candidate Starts for TinyMiny_49:

(15, 30891), (Start: 34 @31125 has 50 MA's), (50, 31188), (62, 31272), (63, 31284), (64, 31287), (96, 31449), (100, 31485), (107, 31521), (124, 31584), (127, 31593), (138, 31662), (142, 31677), (185, 31824),

Gene: Tongui_46 Start: 29721, Stop: 30566, Start Num: 34

Candidate Starts for Tongui_46:

(8, 29316), (10, 29325), (12, 29382), (Start: 34 @29721 has 50 MA's), (48, 29775), (53, 29811), (55, 29838), (63, 29883), (64, 29886), (70, 29931), (100, 30087), (107, 30123), (110, 30132), (111, 30135), (138, 30264), (142, 30279), (155, 30303), (176, 30384), (185, 30426),

Gene: Tracker_65 Start: 50870, Stop: 50052, Start Num: 30

Candidate Starts for Tracker_65:

(23, 50897), (Start: 30 @50870 has 27 MA's), (48, 50798), (82, 50576), (109, 50435), (112, 50426), (125, 50375), (132, 50339), (142, 50285), (151, 50267), (156, 50252),

Gene: Troll4_59 Start: 44619, Stop: 45479, Start Num: 39

Candidate Starts for Troll4_59:

(21, 44547), (Start: 39 @44619 has 21 MA's), (47, 44664), (50, 44676), (52, 44694), (53, 44706), (55, 44730), (56, 44733), (83, 44886), (86, 44907), (88, 44916), (91, 44922), (107, 45012), (108, 45015), (111, 45024), (117, 45045), (139, 45156), (142, 45168), (145, 45186), (164, 45237), (167, 45246), (173, 45276), (174, 45279),

Gene: Turuncu_68 Start: 51816, Stop: 51037, Start Num: 24

Candidate Starts for Turuncu_68:

(Start: 24 @51816 has 11 MA's), (48, 51729), (106, 51390), (109, 51381), (118, 51348), (125, 51321), (132, 51291), (142, 51237), (143, 51231), (151, 51219), (153, 51213), (165, 51177), (175, 51141),

Gene: Visconti_60 Start: 44499, Stop: 45359, Start Num: 39

Candidate Starts for Visconti_60:

(21, 44427), (Start: 39 @44499 has 21 MA's), (47, 44544), (50, 44556), (52, 44574), (53, 44586), (55, 44610), (56, 44613), (83, 44766), (86, 44787), (88, 44796), (91, 44802), (107, 44892), (108, 44895), (111, 44904), (117, 44925), (139, 45036), (142, 45048), (145, 45066), (164, 45117), (167, 45126), (173, 45156), (174, 45159),

Gene: WaldoWhy_61 Start: 44552, Stop: 45412, Start Num: 39

Candidate Starts for WaldoWhy_61:

(21, 44480), (Start: 39 @44552 has 21 MA's), (47, 44597), (50, 44609), (52, 44627), (53, 44639), (55, 44663), (56, 44666), (83, 44819), (86, 44840), (88, 44849), (91, 44855), (107, 44945), (108, 44948), (111, 44957), (117, 44978), (139, 45089), (142, 45101), (145, 45119), (164, 45170), (167, 45179), (173, 45209), (174, 45212),

Gene: Weiss13_70 Start: 52669, Stop: 53499, Start Num: 29

Candidate Starts for Weiss13_70:

(Start: 29 @52669 has 9 MA's), (44, 52714), (49, 52744), (53, 52777), (55, 52801), (64, 52849), (68, 52870), (83, 52963), (88, 52993), (90, 52996), (93, 53008), (115, 53092), (121, 53122), (136, 53206), (139, 53212), (142, 53224), (145, 53242), (152, 53269), (153, 53272), (174, 53368), (176, 53389), (182, 53416),

Gene: Wentworth_64 Start: 46130, Stop: 45360, Start Num: 32

Candidate Starts for Wentworth_64:

(Start: 32 @46130 has 8 MA's), (45, 46088), (48, 46076), (49, 46073), (53, 46040), (64, 45968), (82, 45869), (102, 45764), (103, 45758), (113, 45719), (118, 45698), (130, 45641), (142, 45581), (143, 45575), (164, 45530), (169, 45521),

Gene: Wheezy_65 Start: 51084, Stop: 50263, Start Num: 30

Candidate Starts for Wheezy_65:

(23, 51111), (Start: 30 @51084 has 27 MA's), (48, 51012), (82, 50790), (109, 50649), (112, 50640), (125, 50589), (132, 50553), (142, 50499), (151, 50481), (156, 50466),

Gene: WhoseManz_65 Start: 48102, Stop: 47305, Start Num: 30

Candidate Starts for WhoseManz_65:

(Start: 30 @48102 has 27 MA's), (48, 48027), (101, 47721), (106, 47691), (109, 47682), (112, 47673), (118, 47646), (125, 47619), (134, 47574), (139, 47541), (142, 47529), (151, 47511), (173, 47430), (191, 47352),

Gene: Wilkos_66 Start: 46285, Stop: 45515, Start Num: 32

Candidate Starts for Wilkos_66:

(Start: 32 @46285 has 8 MA's), (43, 46258), (45, 46243), (48, 46231), (49, 46228), (53, 46195), (55, 46171), (56, 46168), (62, 46138), (82, 46024), (102, 45919), (103, 45913), (113, 45874), (118, 45853), (130, 45796), (142, 45736), (143, 45730), (169, 45676),

Gene: Wojtek_63 Start: 44323, Stop: 45414, Start Num: 35

Candidate Starts for Wojtek_63:

(Start: 35 @44323 has 39 MA's), (52, 44404), (53, 44416), (59, 44455), (67, 44503), (85, 44596), (86, 44605), (87, 44614), (116, 44737), (120, 44758), (128, 44785), (142, 44866), (145, 44884), (151, 44905), (171, 44983), (187, 45067), (199, 45145), (205, 45232),

Gene: Wollypog_48 Start: 34784, Stop: 35608, Start Num: 40

Candidate Starts for Wollypog_48:

(Start: 40 @34784 has 4 MA's), (47, 34832), (48, 34838), (49, 34841), (55, 34898), (89, 35081), (91, 35084), (106, 35174), (115, 35201), (119, 35222), (140, 35324), (142, 35333),

Gene: Xenia2_66 Start: 44090, Stop: 45202, Start Num: 35

Candidate Starts for Xenia2_66:

(Start: 35 @44090 has 39 MA's), (53, 44186), (59, 44225), (67, 44273), (83, 44354), (85, 44366), (86, 44375), (87, 44384), (120, 44528), (142, 44636), (145, 44654), (151, 44675), (159, 44699), (160, 44702), (171, 44753), (196, 44894), (215, 45170),

Gene: Yara_60 Start: 44990, Stop: 44223, Start Num: 32

Candidate Starts for Yara_60:

(Start: 32 @44990 has 8 MA's), (43, 44963), (48, 44936), (51, 44927), (53, 44900), (113, 44579), (114, 44576), (118, 44558), (125, 44531), (143, 44435), (185, 44297),

Gene: Yelo_69 Start: 53048, Stop: 53878, Start Num: 29

Candidate Starts for Yelo_69:

(Start: 29 @53048 has 9 MA's), (44, 53093), (49, 53123), (53, 53156), (55, 53180), (64, 53228), (68, 53249), (83, 53342), (88, 53372), (90, 53375), (93, 53387), (115, 53471), (121, 53501), (136, 53585), (139, 53591), (142, 53603), (145, 53621), (152, 53648), (153, 53651), (174, 53747), (176, 53768), (182, 53795),

Gene: Yikes_69 Start: 46336, Stop: 47406, Start Num: 35

Candidate Starts for Yikes_69:

(Start: 35 @46336 has 39 MA's), (59, 46468), (67, 46516), (85, 46609), (86, 46618), (87, 46627), (116, 46750), (120, 46771), (128, 46798), (142, 46879), (145, 46897), (151, 46918), (171, 46996), (187, 47080), (205, 47245), (215, 47377),

Gene: Yndexa_66 Start: 50275, Stop: 49478, Start Num: 30

Candidate Starts for Yndexa_66:

(17, 50374), (23, 50302), (Start: 30 @50275 has 27 MA's), (48, 50200), (75, 50026), (101, 49894), (106, 49864), (109, 49855), (112, 49846), (118, 49819), (125, 49792), (134, 49747), (139, 49714), (142, 49702), (151, 49684), (173, 49603), (191, 49525),

Gene: Zany_65 Start: 45737, Stop: 46807, Start Num: 35

Candidate Starts for Zany_65:

(Start: 35 @45737 has 39 MA's), (59, 45869), (67, 45917), (85, 46010), (86, 46019), (87, 46028), (116, 46151), (120, 46172), (128, 46199), (142, 46280), (145, 46298), (151, 46319), (171, 46397), (187, 46481), (205, 46646), (215, 46778),

Gene: Zenon_72 Start: 52992, Stop: 53822, Start Num: 29

Candidate Starts for Zenon_72:

(Start: 29 @52992 has 9 MA's), (44, 53037), (49, 53067), (53, 53100), (55, 53124), (64, 53172), (68, 53193), (83, 53286), (88, 53316), (90, 53319), (115, 53415), (121, 53445), (136, 53529), (139, 53535), (142, 53547), (145, 53565), (152, 53592), (153, 53595), (174, 53691), (176, 53712), (182, 53739),

Gene: Zion_54 Start: 45339, Stop: 44575, Start Num: 34

Candidate Starts for Zion_54:

(Start: 34 @45339 has 50 MA's), (70, 45120), (86, 45045), (132, 44838), (142, 44784), (163, 44739), (182, 44655),