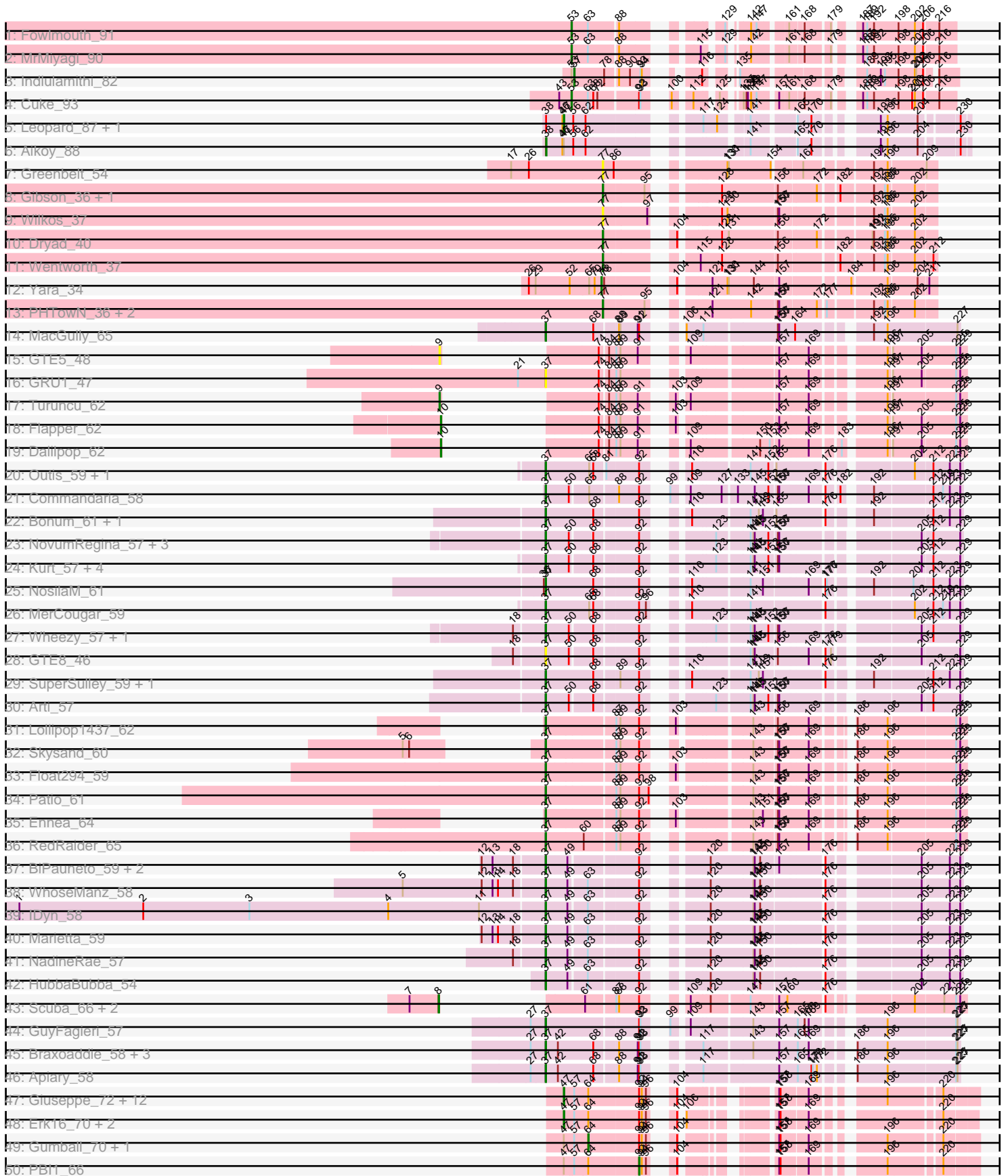
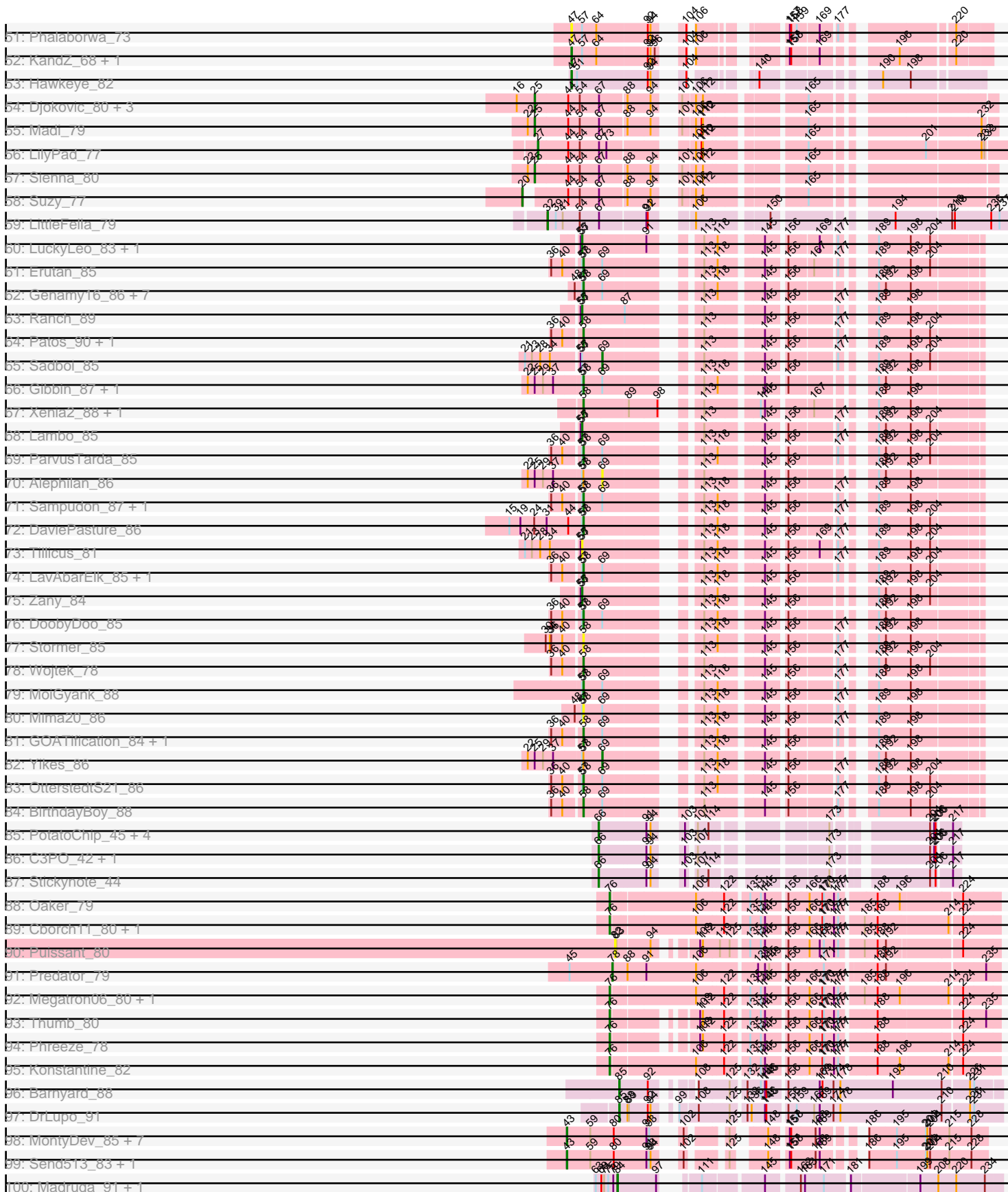


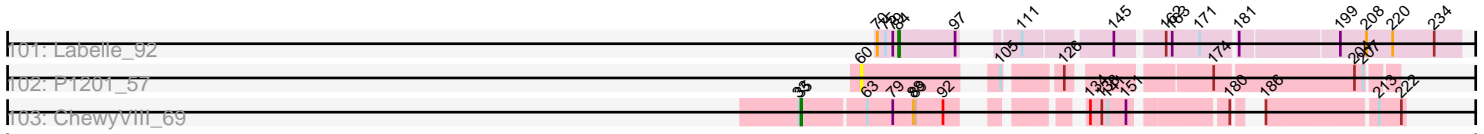
Pham 219404



Pham 219404



Pham 219404



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 219404 Report

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

Pham number 219404 has 174 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Fowlmouth_91
- Track 2 : MrMiyagi_90
- Track 3 : Indlulamithi_82
- Track 4 : Cuke_93
- Track 5 : Leopard_87, Onyinye_87
- Track 6 : Aikoy_88
- Track 7 : Greenbelt_54
- Track 8 : Gibson_36, Rooney_36
- Track 9 : Wilkos_37
- Track 10 : Dryad_40
- Track 11 : Wentworth_37
- Track 12 : Yara_34
- Track 13 : PHTowN_36, Lizz_36, ShakeNBake_36
- Track 14 : MacGully_65
- Track 15 : GTE5_48
- Track 16 : GRU1_47
- Track 17 : Turuncu_62
- Track 18 : Flapper_62
- Track 19 : Dalilpop_62
- Track 20 : Outis_59, StarStruck_59
- Track 21 : Commandaria_58
- Track 22 : Bonum_61, Kabluna_61
- Track 23 : NovumRegina_57, NatB6_57, GrootJr_59, Foxboro_58
- Track 24 : Kurt_57, KidneyBean_57, Jifall16_56, Emianna_57, Phomeo_56
- Track 25 : NosilaM_61
- Track 26 : MerCougar_59
- Track 27 : Wheezy_57, Tracker_57
- Track 28 : GTE8_46
- Track 29 : SuperSulley_59, Buggaboo_59
- Track 30 : Arti_57
- Track 31 : Lollipop1437_62
- Track 32 : Skysand_60
- Track 33 : Float294_59
- Track 34 : Patio_61
- Track 35 : Ennea_64
- Track 36 : RedRaider_65
- Track 37 : BiPauneto_59, Sukkupi_58, Yndexa_58

- Track 38 : WhoseManz_58
- Track 39 : IDyn_58
- Track 40 : Marietta_59
- Track 41 : NadineRae_57
- Track 42 : HubbaBubba_54
- Track 43 : Scuba_66, Fury_65, Pleakley_65
- Track 44 : GuyFagieri_57
- Track 45 : Braxoaddie_58, Maselop_58, CoffeeBean_58, Polyyuki_58
- Track 46 : Apiary_58
- Track 47 : Giuseppe_72, Mopey_72, Visconti_71, Adjutor_68, Penelope2018_70, Butterscotch_68, Helpful_73, Thoth_70, SirHarley_72, Delton_70, Nova_70, BigMama_68, Prager_71
- Track 48 : Erk16_70, WaldoWhy_72, Chill_72
- Track 49 : Gumball_70, Troll4_70
- Track 50 : PBI1_66
- Track 51 : Phalaborwa_73
- Track 52 : KandZ_68, PLOT_70
- Track 53 : Hawkeye_82
- Track 54 : Djokovic_80, Terapin_81, BiteSize_80, Beyoncage_80
- Track 55 : Madi_79
- Track 56 : LilyPad_77
- Track 57 : Sienna_80
- Track 58 : Suzy_77
- Track 59 : LittleFella_79
- Track 60 : LuckyLeo_83, Apeppi_81
- Track 61 : Erutan_85
- Track 62 : Genamy16_86, Rumi_84, Avian_83, Alyssamiracle_86, RazorC_84, NovaSharks_85, Jamemuya19_84, Astralis_85
- Track 63 : Ranch_89
- Track 64 : Patos_90, NorManre_90
- Track 65 : Sadboi_85
- Track 66 : Gibbin_87, Gretellyn_85
- Track 67 : Xenia2_88, DumpTruck_88
- Track 68 : Lambo_85
- Track 69 : ParvusTarda_85
- Track 70 : Alephilan_86
- Track 71 : Sampudon_87, Jalebi_85
- Track 72 : DaviePasture_86
- Track 73 : Tillicus_81
- Track 74 : LavAbarElk_85, Lila22_86
- Track 75 : Zany_84
- Track 76 : DoobyDoo_85
- Track 77 : Stormer_85
- Track 78 : Wojtek_78
- Track 79 : MoiGyank_88
- Track 80 : Mima20_86
- Track 81 : GOATification_84, Fulcrum_84
- Track 82 : Yikes_86
- Track 83 : OtterstedtS21_86
- Track 84 : BirthdayBoy_88
- Track 85 : PotatoChip_45, Darwin_46, Kimchi1738_42, PeteyPab_44, Zion_45
- Track 86 : C3PO_42, Cruella_42
- Track 87 : Stickynote_44

- Track 88 : Oaker_79
- Track 89 : Cborch11_80, Damien_79
- Track 90 : Puissant_80
- Track 91 : Predator_79
- Track 92 : Megatron06_80, Beckerton_78
- Track 93 : Thumb_80
- Track 94 : Phreeze_78
- Track 95 : Konstantine_82
- Track 96 : Barnyard_88
- Track 97 : DrLupo_91
- Track 98 : MontyDev_85, Nilo_86, Papyrus_82, Riparian_85, Candle_81, Weiss13_83, Zenon_85, Yelo_82
- Track 99 : Send513_83, Rope_83
- Track 100 : Madruga_91, Patience_93
- Track 101 : Labelle_92
- Track 102 : P1201_57
- Track 103 : ChewyVIII_69

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

The start number called the most often in the published annotations is 37, it was called in 41 of the 154 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Apiary_58, Arti_57, BiPauneto_59, Bonum_61, Braxoaddie_58, Buggaboo_59, CoffeeBean_58, Commandaria_58, Emianna_57, Ennea_64, Float294_59, Foxboro_58, GRU1_47, GTE8_46, GrootJr_59, GuyFagieri_57, HubbaBubba_54, IDyn_58, Jifall16_56, Kabluna_61, KidneyBean_57, Kurt_57, Lollipop1437_62, MacGully_65, Marietta_59, Maselop_58, MerCougar_59, NadineRae_57, NatB6_57, NosilaM_61, NovumRegina_57, Outis_59, Patio_61, Phomeo_56, Polyyuki_58, RedRaider_65, Skysand_60, StarStruck_59, Sukkupi_58, SuperSulley_59, Tracker_57, Wheezy_57, WhoseManz_58, Yndexa_58,

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

- Alephilan_86, Gibbin_87, GretelLyn_85, Yikes_86,

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

- Adjutor_68, Aikoy_88, Alyssamiracle_86, Apeppi_81, Astralis_85, Avian_83, Barnyard_88, Beckerton_78, Beyoncage_80, BigMama_68, BirthdayBoy_88, BiteSize_80, Butterscotch_68, C3PO_42, Candle_81, Cborch11_80, ChewyVIII_69, Chill_72, Cruella_42, Cuke_93, Dalilpop_62, Damien_79, Darwin_46, DaviePasture_86, Delton_70, Djokovic_80, DoobyDoo_85, DrLupo_91, Dryad_40, DumpTruck_88, Erk16_70, Erutan_85, Flapper_62, Fowlmouth_91, Fulcrum_84, Fury_65, GOATification_84, GTE5_48, Genamy16_86, Gibson_36, Giuseppe_72, Greenbelt_54, Gumball_70, Hawkeye_82, Helpful_73, Indlulamithi_82, Jalebi_85, Jamemuya19_84, KandZ_68, Kimchi1738_42, Konstantine_82, Labelle_92, Lambo_85, LavAbarElk_85, Leopard_87, Lila22_86, LilyPad_77, LittleFella_79, Lizz_36, LuckyLeo_83, Madi_79, Madruga_91, Megatron06_80, Mima20_86, MoiGyank_88, MontyDev_85, Mopey_72, MrMiyagi_90, Nilo_86, NorManre_90, NovaSharks_85, Nova_70, Oaker_79, Onyinye_87, OtterstedtS21_86, P1201_57,

PBI1_66, PHTowN_36, PLOt_70, Papyrus_82, ParvusTarda_85, Patience_93, Patos_90, Penelope2018_70, PeteyPab_44, Phalaborwa_73, Phreeze_78, Pleakley_65, PotatoChip_45, Prager_71, Predator_79, Puissant_80, Ranch_89, RazorC_84, Riparian_85, Rooney_36, Rope_83, Rumi_84, Sadboi_85, Sampudon_87, Scuba_66, Send513_83, ShakeNBake_36, Sienna_80, SirHarley_72, Stickynote_44, Stormer_85, Suzy_77, Terapin_81, Thoth_70, Thumb_80, Tillicus_81, Troll4_70, Turuncu_62, Visconti_71, WaldoWhy_72, Weiss13_83, Wentworth_37, Wilkos_37, Wojtek_78, Xenia2_88, Yara_34, Yelo_82, Zany_84, Zenon_85, Zion_45,

Summary by start number:

Start 8:

- Found in 3 of 174 (1.7%) of genes in pham
- Manual Annotations of this start: 2 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fury_65 (CR5), Pleakley_65 (CR5), Scuba_66 (CR5),

Start 9:

- Found in 2 of 174 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GTE5_48 (CR1), Turuncu_62 (CR1),

Start 10:

- Found in 2 of 174 (1.1%) of genes in pham
- Manual Annotations of this start: 2 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dalilpop_62 (CR1), Flapper_62 (CR1),

Start 20:

- Found in 1 of 174 (0.6%) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Suzy_77 (DG1),

Start 25:

- Found in 10 of 174 (5.7%) of genes in pham
- Manual Annotations of this start: 6 of 154
- Called 60.0% of time when present
- Phage (with cluster) where this start called: Beyoncage_80 (DG1), BiteSize_80 (DG1), Djokovic_80 (DG1), Madi_79 (DG1), Sienna_80 (DG1), Terapin_81 (DG1),

Start 27:

- Found in 7 of 174 (4.0%) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 14.3% of time when present
- Phage (with cluster) where this start called: LilyPad_77 (DG1),

Start 32:

- Found in 1 of 174 (0.6%) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 100.0% of time when present

- Phage (with cluster) where this start called: LittleFella_79 (DG2),

Start 35:

- Found in 1 of 174 (0.6%) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ChewyVIII_69 (singleton),

Start 37:

- Found in 48 of 174 (27.6%) of genes in pham
- Manual Annotations of this start: 41 of 154
- Called 91.7% of time when present
- Phage (with cluster) where this start called: Apiary_58 (CR6), Arti_57 (CR2), BiPauneto_59 (CR4), Bonum_61 (CR2), Braxoaddie_58 (CR6), Buggaboo_59 (CR2), CoffeeBean_58 (CR6), Commandaria_58 (CR2), Emianna_57 (CR2), Ennea_64 (CR3), Float294_59 (CR3), Foxboro_58 (CR2), GRU1_47 (CR1), GTE8_46 (CR2), GrootJr_59 (CR2), GuyFagieri_57 (CR6), HubbaBubba_54 (CR4), IDyn_58 (CR4), Jifall16_56 (CR2), Kabluna_61 (CR2), KidneyBean_57 (CR2), Kurt_57 (CR2), Lollipop1437_62 (CR3), MacGully_65 (CR), Marietta_59 (CR4), Maselop_58 (CR6), MerCougar_59 (CR2), NadineRae_57 (CR4), NatB6_57 (CR2), NosilaM_61 (CR2), NovumRegina_57 (CR2), Outis_59 (CR2), Patio_61 (CR3), Phomeo_56 (CR2), Polyyuki_58 (CR6), RedRaider_65 (CR3), Skysand_60 (CR3), StarStruck_59 (CR2), Sukkupi_58 (CR4), SuperSulley_59 (CR2), Tracker_57 (CR2), Wheezy_57 (CR2), WhoseManz_58 (CR4), Yndexa_58 (CR4),

Start 38:

- Found in 3 of 174 (1.7%) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Aikoy_88 (AE),

Start 43:

- Found in 11 of 174 (6.3%) of genes in pham
- Manual Annotations of this start: 9 of 154
- Called 90.9% of time when present
- Phage (with cluster) where this start called: Candle_81 (R), MontyDev_85 (R), Nilo_86 (R), Papyrus_82 (R), Riparian_85 (R), Rope_83 (R), Send513_83 (R), Weiss13_83 (R), Yelo_82 (R), Zenon_85 (R),

Start 47:

- Found in 26 of 174 (14.9%) of genes in pham
- Manual Annotations of this start: 21 of 154
- Called 84.6% of time when present
- Phage (with cluster) where this start called: Adjutor_68 (D1), BigMama_68 (D1), Butterscotch_68 (D1), Chill_72 (D1), Delton_70 (D1), Erk16_70 (D1), Giuseppe_72 (D1), Hawkeye_82 (D2), Helpful_73 (D1), KandZ_68 (D1), Leopard_87 (AE), Mopey_72 (D1), Nova_70 (D1), Onyinye_87 (AE), PLOT_70 (D1), Penelope2018_70 (D1), Phalaborwa_73 (D1), Prager_71 (D1), SirHarley_72 (D1), Thoth_70 (D1), Visconti_71 (D1), WaldoWhy_72 (D1),

Start 53:

- Found in 4 of 174 (2.3%) of genes in pham
- Manual Annotations of this start: 3 of 154

- Called 75.0% of time when present
- Phage (with cluster) where this start called: Cuke_93 (AC), Fowlmouth_91 (AC), MrMiyagi_90 (AC),

Start 57:

- Found in 53 of 174 (30.5%) of genes in pham
- Manual Annotations of this start: 6 of 154
- Called 13.2% of time when present
- Phage (with cluster) where this start called: Apeppi_81 (DV), Indlulamithi_82 (AC), Lambo_85 (DV), LuckyLeo_83 (DV), Ranch_89 (DV), Tillicus_81 (DV), Zany_84 (DV),

Start 58:

- Found in 32 of 174 (18.4%) of genes in pham
- Manual Annotations of this start: 23 of 154
- Called 93.8% of time when present
- Phage (with cluster) where this start called: Alyssamiracle_86 (DV), Astralis_85 (DV), Avian_83 (DV), BirthdayBoy_88 (DV), DaviePasture_86 (DV), DoobyDoo_85 (DV), DumpTruck_88 (DV), Erutan_85 (DV), Fulcrum_84 (DV), GOATification_84 (DV), Genamy16_86 (DV), Gibbin_87 (DV), GretelLyn_85 (DV), Jalebi_85 (DV), Jamemuya19_84 (DV), LavAbarElk_85 (DV), Lila22_86 (DV), Mima20_86 (DV), MoiGyank_88 (DV), NorManre_90 (DV), NovaSharks_85 (DV), OtterstedtS21_86 (DV), ParvusTarda_85 (DV), Patos_90 (DV), RazorC_84 (DV), Rumi_84 (DV), Sampudon_87 (DV), Stormer_85 (DV), Wojtek_78 (DV), Xenia2_88 (DV),

Start 60:

- Found in 2 of 174 (1.1%) 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_57 (singleton),

Start 64:

- Found in 22 of 174 (12.6%) of genes in pham
- Manual Annotations of this start: 2 of 154
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Gumball_70 (D1), Troll4_70 (D1),

Start 66:

- Found in 8 of 174 (4.6%) of genes in pham
- Manual Annotations of this start: 8 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: C3PO_42 (EN), Cruella_42 (EN), Darwin_46 (EN), Kimchi1738_42 (EN), PeteyPab_44 (EN), PotatoChip_45 (EN), Stickynote_44 (EN), Zion_45 (EN),

Start 69:

- Found in 26 of 174 (14.9%) of genes in pham
- Manual Annotations of this start: 2 of 154
- Called 11.5% of time when present
- Phage (with cluster) where this start called: Alephilan_86 (DV), Sadboi_85 (DV), Yikes_86 (DV),

Start 76:

- Found in 9 of 174 (5.2%) of genes in pham

- Manual Annotations of this start: 9 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beckerton_78 (H1), Cborch11_80 (H1), Damien_79 (H1), Konstantine_82 (H1), Megatron06_80 (H1), Oaker_79 (H1), Phreeze_78 (H1), Thumb_80 (H1), Yara_34 (BN),

Start 77:

- Found in 9 of 174 (5.2%) of genes in pham
- Manual Annotations of this start: 7 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dryad_40 (BN), Gibson_36 (BN), Greenbelt_54 (BN), Lizz_36 (BN), PHTowN_36 (BN), Rooney_36 (BN), ShakeNBake_36 (BN), Wentworth_37 (BN), Wilkos_37 (BN),

Start 78:

- Found in 3 of 174 (1.7%) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Predator_79 (H1),

Start 82:

- Found in 1 of 174 (0.6%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Puissant_80 (H1),

Start 84:

- Found in 8 of 174 (4.6%) of genes in pham
- Manual Annotations of this start: 3 of 154
- Called 37.5% of time when present
- Phage (with cluster) where this start called: Labelle_92 (U), Madruga_91 (U), Patience_93 (U),

Start 85:

- Found in 2 of 174 (1.1%) of genes in pham
- Manual Annotations of this start: 2 of 154
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Barnyard_88 (H2), DrLupo_91 (H2),

Start 92:

- Found in 74 of 174 (42.5%) of genes in pham
- Manual Annotations of this start: 1 of 154
- Called 1.4% of time when present
- Phage (with cluster) where this start called: PB11_66 (D1),

Summary by clusters:

There are 21 clusters represented in this pham: CR2, CR3, singleton, EN, CR6, CR4, CR5, H2, BN, H1, AC, CR1, DG2, R, U, CR, DV, AE, DG1, D2, D1,

Info for manual annotations of cluster AC:

- Start number 53 was manually annotated 3 times for cluster AC.
- Start number 57 was manually annotated 1 time for cluster AC.

Info for manual annotations of cluster AE:

- Start number 38 was manually annotated 1 time for cluster AE.
- Start number 47 was manually annotated 2 times for cluster AE.

Info for manual annotations of cluster BN:

- Start number 76 was manually annotated 1 time for cluster BN.
- Start number 77 was manually annotated 7 times for cluster BN.

Info for manual annotations of cluster CR:

- Start number 37 was manually annotated 1 time for cluster CR.

Info for manual annotations of cluster CR1:

- Start number 9 was manually annotated 1 time for cluster CR1.
- Start number 10 was manually annotated 2 times for cluster CR1.

Info for manual annotations of cluster CR2:

- Start number 37 was manually annotated 20 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 37 was manually annotated 6 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 37 was manually annotated 8 times for cluster CR4.

Info for manual annotations of cluster CR5:

- Start number 8 was manually annotated 2 times for cluster CR5.

Info for manual annotations of cluster CR6:

- Start number 37 was manually annotated 6 times for cluster CR6.

Info for manual annotations of cluster D1:

- Start number 47 was manually annotated 18 times for cluster D1.
- Start number 64 was manually annotated 2 times for cluster D1.
- Start number 92 was manually annotated 1 time for cluster D1.

Info for manual annotations of cluster D2:

- Start number 47 was manually annotated 1 time for cluster D2.

Info for manual annotations of cluster DG1:

- Start number 20 was manually annotated 1 time for cluster DG1.
- Start number 25 was manually annotated 6 times for cluster DG1.
- Start number 27 was manually annotated 1 time for cluster DG1.

Info for manual annotations of cluster DG2:

- Start number 32 was manually annotated 1 time for cluster DG2.

Info for manual annotations of cluster DV:

- Start number 57 was manually annotated 5 times for cluster DV.
- Start number 58 was manually annotated 23 times for cluster DV.
- Start number 69 was manually annotated 2 times for cluster DV.

Info for manual annotations of cluster EN:

- Start number 66 was manually annotated 8 times for cluster EN.

Info for manual annotations of cluster H1:

- Start number 76 was manually annotated 8 times for cluster H1.
- Start number 78 was manually annotated 1 time for cluster H1.

Info for manual annotations of cluster H2:

- Start number 85 was manually annotated 2 times for cluster H2.

Info for manual annotations of cluster R:

- Start number 43 was manually annotated 9 times for cluster R.

Info for manual annotations of cluster U:

- Start number 84 was manually annotated 3 times for cluster U.

Gene Information:

Gene: Adjutor_68 Start: 54806, Stop: 55477, Start Num: 47

Candidate Starts for Adjutor_68:

(Start: 47 @54806 has 21 MA's), (Start: 57 @54827 has 6 MA's), (Start: 64 @54857 has 2 MA's), (Start: 92 @54959 has 1 MA's), (94, 54965), (96, 54974), (104, 54998), (157, 55133), (158, 55136), (169, 55190), (196, 55307), (220, 55406),

Gene: Aikoy_88 Start: 61398, Stop: 62117, Start Num: 38

Candidate Starts for Aikoy_88:

(Start: 38 @61398 has 1 MA's), (46, 61434), (Start: 47 @61437 has 21 MA's), (56, 61455), (62, 61479), (141, 61746), (165, 61827), (170, 61857), (193, 61953), (196, 61968), (204, 62031), (230, 62100),

Gene: Alephilan_86 Start: 58613, Stop: 59248, Start Num: 69

Candidate Starts for Alephilan_86:

(22, 58460), (Start: 25 @58475 has 6 MA's), (29, 58493), (Start: 37 @58514 has 41 MA's), (Start: 57 @58571 has 6 MA's), (Start: 58 @58574 has 23 MA's), (Start: 69 @58613 has 2 MA's), (113, 58766), (145, 58874), (156, 58910), (189, 59042), (192, 59057), (198, 59108),

Gene: Alyssamiracle_86 Start: 56530, Stop: 57204, Start Num: 58

Candidate Starts for Alyssamiracle_86:

(48, 56515), (Start: 57 @56527 has 6 MA's), (Start: 58 @56530 has 23 MA's), (Start: 69 @56569 has 2 MA's), (113, 56722), (118, 56749), (145, 56830), (156, 56866), (189, 56998), (192, 57013), (198, 57064),

Gene: Apeppi_81 Start: 57772, Stop: 58446, Start Num: 57

Candidate Starts for Apeppi_81:

(55, 57769), (Start: 57 @57772 has 6 MA's), (91, 57901), (113, 57964), (118, 57991), (145, 58072), (156, 58108), (169, 58168), (177, 58198), (189, 58240), (198, 58306), (204, 58348),

Gene: Apiary_58 Start: 42343, Stop: 41603, Start Num: 37

Candidate Starts for Apiary_58:

(Start: 27 @42370 has 1 MA's), (Start: 37 @42343 has 41 MA's), (42, 42319), (68, 42244), (88, 42202), (91, 42163), (Start: 92 @42160 has 1 MA's), (93, 42157), (117, 42082), (157, 41926), (165, 41893), (170, 41863), (171, 41860), (172, 41851), (186, 41815), (196, 41749), (225, 41611), (227, 41608),

Gene: Arti_57 Start: 44353, Stop: 43622, Start Num: 37

Candidate Starts for Arti_57:

(Start: 37 @44353 has 41 MA's), (50, 44305), (68, 44263), (Start: 92 @44176 has 1 MA's), (123, 44071), (141, 44005), (143, 43999), (145, 43996), (152, 43966), (156, 43951), (157, 43948), (205, 43702), (212, 43681), (229, 43627),

Gene: Astralis_85 Start: 56109, Stop: 56783, Start Num: 58

Candidate Starts for Astralis_85:

(48, 56094), (Start: 57 @56106 has 6 MA's), (Start: 58 @56109 has 23 MA's), (Start: 69 @56148 has 2 MA's), (113, 56301), (118, 56328), (145, 56409), (156, 56445), (189, 56577), (192, 56592), (198, 56643),

Gene: Avian_83 Start: 56261, Stop: 56935, Start Num: 58

Candidate Starts for Avian_83:

(48, 56246), (Start: 57 @56258 has 6 MA's), (Start: 58 @56261 has 23 MA's), (Start: 69 @56300 has 2 MA's), (113, 56453), (118, 56480), (145, 56561), (156, 56597), (189, 56729), (192, 56744), (198, 56795),

Gene: Barnyard_88 Start: 60764, Stop: 61486, Start Num: 85

Candidate Starts for Barnyard_88:

(Start: 85 @60764 has 2 MA's), (Start: 92 @60818 has 1 MA's), (108, 60872), (125, 60935), (132, 60962), (141, 60989), (145, 60998), (146, 61001), (156, 61037), (169, 61103), (170, 61109), (174, 61133), (178, 61148), (193, 61262), (210, 61367), (226, 61421), (231, 61430),

Gene: Beckerton_78 Start: 59931, Stop: 60683, Start Num: 76

Candidate Starts for Beckerton_78:

(Start: 76 @59931 has 9 MA's), (106, 60102), (122, 60159), (135, 60204), (141, 60225), (145, 60234), (156, 60273), (166, 60315), (170, 60339), (171, 60342), (175, 60363), (177, 60369), (185, 60408), (188, 60435), (196, 60483), (214, 60582), (224, 60606),

Gene: Beyoncage_80 Start: 55697, Stop: 56518, Start Num: 25

Candidate Starts for Beyoncage_80:

(16, 55658), (Start: 25 @55697 has 6 MA's), (44, 55769), (54, 55793), (67, 55835), (88, 55889), (94, 55937), (101, 55961), (106, 55985), (112, 56000), (165, 56186),

Gene: BiPauneto_59 Start: 43866, Stop: 43126, Start Num: 37

Candidate Starts for BiPauneto_59:

(12, 43998), (13, 43974), (18, 43929), (Start: 37 @43866 has 41 MA's), (49, 43821), (Start: 92 @43689 has 1 MA's), (120, 43596), (143, 43503), (145, 43500), (150, 43488), (157, 43452), (176, 43368), (205, 43206), (223, 43152), (229, 43131),

Gene: BigMama_68 Start: 54879, Stop: 55550, Start Num: 47

Candidate Starts for BigMama_68:

(Start: 47 @54879 has 21 MA's), (Start: 57 @54900 has 6 MA's), (Start: 64 @54930 has 2 MA's), (Start: 92 @55032 has 1 MA's), (94, 55038), (96, 55047), (104, 55071), (157, 55206), (158, 55209), (169, 55263), (196, 55380), (220, 55479),

Gene: BirthdayBoy_88 Start: 58563, Stop: 59237, Start Num: 58

Candidate Starts for BirthdayBoy_88:

(36, 58503), (40, 58527), (Start: 58 @58563 has 23 MA's), (Start: 69 @58602 has 2 MA's), (113, 58755), (145, 58863), (156, 58899), (177, 58989), (189, 59031), (198, 59097), (204, 59139),

Gene: BiteSize_80 Start: 55783, Stop: 56604, Start Num: 25

Candidate Starts for BiteSize_80:

(16, 55744), (Start: 25 @55783 has 6 MA's), (44, 55855), (54, 55879), (67, 55921), (88, 55975), (94, 56023), (101, 56047), (106, 56071), (112, 56086), (165, 56272),

Gene: Bonum_61 Start: 45017, Stop: 44271, Start Num: 37

Candidate Starts for Bonum_61:

(Start: 37 @45017 has 41 MA's), (68, 44915), (Start: 92 @44828 has 1 MA's), (110, 44774), (141, 44657), (149, 44639), (151, 44630), (155, 44606), (176, 44516), (192, 44447), (212, 44330), (223, 44297), (229, 44276),

Gene: Braxoaddie_58 Start: 42332, Stop: 41592, Start Num: 37

Candidate Starts for Braxoaddie_58:

(Start: 27 @42359 has 1 MA's), (Start: 37 @42332 has 41 MA's), (42, 42308), (68, 42233), (88, 42191), (91, 42152), (Start: 92 @42149 has 1 MA's), (93, 42146), (117, 42071), (143, 41972), (157, 41915), (165, 41882), (169, 41858), (186, 41804), (196, 41738), (225, 41600), (227, 41597),

Gene: Buggaboo_59 Start: 45496, Stop: 44750, Start Num: 37

Candidate Starts for Buggaboo_59:

(Start: 37 @45496 has 41 MA's), (68, 45394), (89, 45346), (Start: 92 @45307 has 1 MA's), (110, 45253), (141, 45136), (149, 45118), (151, 45109), (176, 44995), (192, 44926), (212, 44809), (223, 44776), (229, 44755),

Gene: Butterscotch_68 Start: 54857, Stop: 55528, Start Num: 47

Candidate Starts for Butterscotch_68:

(Start: 47 @54857 has 21 MA's), (Start: 57 @54878 has 6 MA's), (Start: 64 @54908 has 2 MA's), (Start: 92 @55010 has 1 MA's), (94, 55016), (96, 55025), (104, 55049), (157, 55184), (158, 55187), (169, 55241), (196, 55358), (220, 55457),

Gene: C3PO_42 Start: 38653, Stop: 38066, Start Num: 66

Candidate Starts for C3PO_42:

(Start: 66 @38653 has 8 MA's), (91, 38557), (94, 38554), (103, 38527), (107, 38515), (173, 38287), (204, 38122), (205, 38113), (206, 38110), (217, 38083),

Gene: Candle_81 Start: 62723, Stop: 63430, Start Num: 43

Candidate Starts for Candle_81:

(Start: 43 @62723 has 9 MA's), (59, 62774), (80, 62825), (91, 62894), (93, 62900), (102, 62930), (125, 62990), (148, 63038), (157, 63068), (158, 63071), (168, 63122), (169, 63131), (186, 63185), (195, 63242), (201, 63302), (202, 63305), (204, 63311), (215, 63353), (228, 63395),

Gene: Cborch11_80 Start: 59117, Stop: 59869, Start Num: 76

Candidate Starts for Cborch11_80:

(Start: 76 @59117 has 9 MA's), (106, 59288), (122, 59345), (135, 59390), (141, 59411), (145, 59420), (156, 59459), (166, 59501), (170, 59525), (171, 59528), (175, 59549), (177, 59555), (185, 59594), (188, 59621), (214, 59768), (224, 59792),

Gene: ChewyVIII_69 Start: 49815, Stop: 49147, Start Num: 35

Candidate Starts for ChewyVIII_69:

(33, 49818), (Start: 35 @49815 has 1 MA's), (63, 49728), (79, 49692), (88, 49665), (89, 49662), (Start: 92 @49623 has 1 MA's), (134, 49506), (138, 49491), (141, 49482), (151, 49458), (180, 49344), (186, 49332), (213, 49182), (222, 49152),

Gene: Chill_72 Start: 54894, Stop: 55562, Start Num: 47

Candidate Starts for Chill_72:

(Start: 47 @54894 has 21 MA's), (Start: 57 @54915 has 6 MA's), (Start: 64 @54945 has 2 MA's), (Start: 92 @55047 has 1 MA's), (94, 55053), (96, 55062), (104, 55086), (106, 55089), (157, 55221), (158, 55224), (169, 55278), (220, 55494),

Gene: CoffeeBean_58 Start: 42290, Stop: 41550, Start Num: 37

Candidate Starts for CoffeeBean_58:

(Start: 27 @42317 has 1 MA's), (Start: 37 @42290 has 41 MA's), (42, 42266), (68, 42191), (88, 42149), (91, 42110), (Start: 92 @42107 has 1 MA's), (93, 42104), (117, 42029), (143, 41930), (157, 41873), (165, 41840), (169, 41816), (186, 41762), (196, 41696), (225, 41558), (227, 41555),

Gene: Commandaria_58 Start: 45467, Stop: 44736, Start Num: 37

Candidate Starts for Commandaria_58:

(Start: 37 @45467 has 41 MA's), (50, 45419), (65, 45386), (88, 45332), (Start: 92 @45290 has 1 MA's), (99, 45266), (109, 45239), (127, 45173), (133, 45146), (145, 45110), (152, 45080), (156, 45065), (157, 45062), (169, 45005), (176, 44978), (182, 44960), (192, 44912), (212, 44795), (219, 44777), (223, 44762), (229, 44741),

Gene: Cruella_42 Start: 38653, Stop: 38066, Start Num: 66

Candidate Starts for Cruella_42:

(Start: 66 @38653 has 8 MA's), (91, 38557), (94, 38554), (103, 38527), (107, 38515), (173, 38287), (204, 38122), (205, 38113), (206, 38110), (217, 38083),

Gene: Cuke_93 Start: 54589, Stop: 55197, Start Num: 53

Candidate Starts for Cuke_93:

(Start: 43 @54562 has 9 MA's), (Start: 53 @54589 has 3 MA's), (63, 54625), (68, 54637), (72, 54646), (Start: 92 @54724 has 1 MA's), (93, 54727), (100, 54751), (112, 54781), (125, 54817), (137, 54838), (138, 54844), (139, 54847), (142, 54853), (147, 54865), (157, 54895), (161, 54913), (168, 54934), (179, 54979), (187, 55009), (189, 55018), (192, 55030), (198, 55081), (200, 55111), (202, 55117), (206, 55135), (216, 55162),

Gene: Dalilpop_62 Start: 46648, Stop: 45902, Start Num: 10

Candidate Starts for Dalilpop_62:

(Start: 10 @46648 has 2 MA's), (74, 46537), (Start: 84 @46522 has 3 MA's), (87, 46510), (89, 46501), (91, 46465), (109, 46411), (150, 46276), (153, 46255), (157, 46240), (169, 46183), (183, 46135), (196, 46057), (197, 46051), (205, 45991), (225, 45925), (229, 45916),

Gene: Damien_79 Start: 59427, Stop: 60179, Start Num: 76

Candidate Starts for Damien_79:

(Start: 76 @59427 has 9 MA's), (106, 59598), (122, 59655), (135, 59700), (141, 59721), (145, 59730), (156, 59769), (166, 59811), (170, 59835), (171, 59838), (175, 59859), (177, 59865), (185, 59904), (188, 59931), (214, 60078), (224, 60102),

Gene: Darwin_46 Start: 38531, Stop: 37944, Start Num: 66

Candidate Starts for Darwin_46:

(Start: 66 @38531 has 8 MA's), (91, 38435), (94, 38432), (103, 38405), (107, 38393), (114, 38372), (173, 38165), (204, 38000), (205, 37991), (206, 37988), (217, 37961),

Gene: DaviePasture_86 Start: 58094, Stop: 58768, Start Num: 58

Candidate Starts for DaviePasture_86:

(15, 57935), (19, 57959), (24, 57989), (31, 58016), (44, 58061), (Start: 57 @58091 has 6 MA's), (Start: 58 @58094 has 23 MA's), (113, 58286), (118, 58313), (145, 58394), (156, 58430), (177, 58520), (189, 58562), (198, 58628), (204, 58670),

Gene: Delton_70 Start: 55255, Stop: 55926, Start Num: 47

Candidate Starts for Delton_70:

(Start: 47 @55255 has 21 MA's), (Start: 57 @55276 has 6 MA's), (Start: 64 @55306 has 2 MA's), (Start: 92 @55408 has 1 MA's), (94, 55414), (96, 55423), (104, 55447), (157, 55582), (158, 55585), (169, 55639), (196, 55756), (220, 55855),

Gene: Djokovic_80 Start: 55696, Stop: 56517, Start Num: 25

Candidate Starts for Djokovic_80:

(16, 55657), (Start: 25 @55696 has 6 MA's), (44, 55768), (54, 55792), (67, 55834), (88, 55888), (94, 55936), (101, 55960), (106, 55984), (112, 55999), (165, 56185),

Gene: DoobyDoo_85 Start: 56890, Stop: 57564, Start Num: 58

Candidate Starts for DoobyDoo_85:

(36, 56830), (40, 56854), (Start: 57 @56887 has 6 MA's), (Start: 58 @56890 has 23 MA's), (Start: 69 @56929 has 2 MA's), (113, 57082), (118, 57109), (145, 57190), (156, 57226), (189, 57358), (192, 57373), (198, 57424),

Gene: DrLupo_91 Start: 60981, Stop: 61727, Start Num: 85

Candidate Starts for DrLupo_91:

(Start: 85 @60981 has 2 MA's), (88, 60996), (89, 60999), (Start: 92 @61038 has 1 MA's), (94, 61044), (99, 61068), (108, 61104), (125, 61170), (132, 61197), (136, 61206), (145, 61233), (146, 61236), (156, 61272), (159, 61290), (167, 61326), (169, 61338), (174, 61368), (178, 61383), (210, 61602), (226, 61656), (231, 61665),

Gene: Dryad_40 Start: 31376, Stop: 30774, Start Num: 77

Candidate Starts for Dryad_40:

(Start: 77 @31376 has 7 MA's), (104, 31265), (128, 31190), (131, 31175), (156, 31073), (172, 30995), (191, 30902), (192, 30899), (195, 30875), (196, 30869), (202, 30818),

Gene: DumpTruck_88 Start: 58077, Stop: 58757, Start Num: 58

Candidate Starts for DumpTruck_88:

(Start: 58 @58077 has 23 MA's), (89, 58170), (98, 58230), (113, 58269), (141, 58368), (145, 58377), (167, 58461), (189, 58545), (198, 58611),

Gene: Emianna_57 Start: 45345, Stop: 44614, Start Num: 37

Candidate Starts for Emianna_57:

(Start: 37 @45345 has 41 MA's), (50, 45297), (68, 45255), (Start: 92 @45168 has 1 MA's), (123, 45063), (141, 44997), (143, 44991), (145, 44988), (152, 44958), (156, 44943), (157, 44940), (205, 44694), (212, 44673), (229, 44619),

Gene: Ennea_64 Start: 46346, Stop: 45609, Start Num: 37

Candidate Starts for Ennea_64:

(Start: 37 @46346 has 41 MA's), (87, 46211), (89, 46202), (Start: 92 @46163 has 1 MA's), (103, 46127), (143, 45992), (151, 45971), (156, 45944), (157, 45941), (169, 45884), (186, 45830), (196, 45764), (225, 45632), (229, 45623),

Gene: Erk16_70 Start: 54972, Stop: 55640, Start Num: 47

Candidate Starts for Erk16_70:

(Start: 47 @54972 has 21 MA's), (Start: 57 @54993 has 6 MA's), (Start: 64 @55023 has 2 MA's), (Start: 92 @55125 has 1 MA's), (94, 55131), (96, 55140), (104, 55164), (106, 55167), (157, 55299), (158, 55302), (169, 55356), (220, 55572),

Gene: Erutan_85 Start: 58028, Stop: 58702, Start Num: 58

Candidate Starts for Erutan_85:

(36, 57968), (40, 57992), (Start: 57 @58025 has 6 MA's), (Start: 58 @58028 has 23 MA's), (Start: 69 @58067 has 2 MA's), (113, 58220), (118, 58247), (145, 58328), (156, 58364), (167, 58412), (177, 58454), (189, 58496), (198, 58562), (204, 58604),

Gene: Flapper_62 Start: 46080, Stop: 45334, Start Num: 10

Candidate Starts for Flapper_62:

(Start: 10 @46080 has 2 MA's), (74, 45969), (Start: 84 @45954 has 3 MA's), (87, 45942), (89, 45933), (91, 45897), (103, 45858), (157, 45672), (169, 45615), (196, 45489), (197, 45483), (205, 45423), (225, 45357), (229, 45348),

Gene: Float294_59 Start: 45788, Stop: 45051, Start Num: 37

Candidate Starts for Float294_59:

(Start: 37 @45788 has 41 MA's), (87, 45653), (89, 45644), (Start: 92 @45605 has 1 MA's), (103, 45569), (143, 45434), (156, 45386), (157, 45383), (169, 45326), (186, 45272), (196, 45206), (225, 45074), (229, 45065),

Gene: Fowlmouth_91 Start: 56536, Stop: 57147, Start Num: 53

Candidate Starts for Fowlmouth_91:

(Start: 53 @56536 has 3 MA's), (63, 56572), (88, 56629), (129, 56776), (142, 56803), (147, 56815), (161, 56863), (168, 56884), (179, 56929), (187, 56959), (189, 56968), (192, 56980), (198, 57031), (202, 57067), (206, 57085), (216, 57112),

Gene: Foxboro_58 Start: 45851, Stop: 45120, Start Num: 37

Candidate Starts for Foxboro_58:

(Start: 37 @45851 has 41 MA's), (50, 45803), (68, 45761), (Start: 92 @45674 has 1 MA's), (123, 45569), (141, 45503), (143, 45497), (145, 45494), (152, 45464), (156, 45449), (157, 45446), (205, 45200), (212, 45179), (229, 45125),

Gene: Fulcrum_84 Start: 57717, Stop: 58391, Start Num: 58

Candidate Starts for Fulcrum_84:

(36, 57657), (40, 57681), (Start: 58 @57717 has 23 MA's), (Start: 69 @57756 has 2 MA's), (113, 57909), (118, 57936), (145, 58017), (156, 58053), (177, 58143), (189, 58185), (198, 58251),

Gene: Fury_65 Start: 44523, Stop: 43777, Start Num: 8

Candidate Starts for Fury_65:

(7, 44583), (Start: 8 @44523 has 2 MA's), (61, 44442), (87, 44385), (88, 44379), (Start: 92 @44337 has 1 MA's), (109, 44286), (120, 44244), (141, 44166), (157, 44109), (160, 44091), (176, 44025), (202, 43881), (221, 43824), (225, 43800), (229, 43791),

Gene: GOATification_84 Start: 57717, Stop: 58391, Start Num: 58

Candidate Starts for GOATification_84:

(36, 57657), (40, 57681), (Start: 58 @57717 has 23 MA's), (Start: 69 @57756 has 2 MA's), (113, 57909), (118, 57936), (145, 58017), (156, 58053), (177, 58143), (189, 58185), (198, 58251),

Gene: GRU1_47 Start: 37626, Stop: 36880, Start Num: 37

Candidate Starts for GRU1_47:

(21, 37686), (Start: 37 @37626 has 41 MA's), (74, 37515), (Start: 84 @37500 has 3 MA's), (87, 37488), (89, 37479), (157, 37218), (169, 37161), (196, 37035), (197, 37029), (205, 36969), (225, 36903), (229, 36894),

Gene: GTE5_48 Start: 38936, Stop: 38190, Start Num: 9

Candidate Starts for GTE5_48:

(Start: 9 @38936 has 1 MA's), (74, 38825), (Start: 84 @38810 has 3 MA's), (87, 38798), (89, 38789), (91, 38753), (109, 38699), (157, 38528), (169, 38471), (196, 38345), (197, 38339), (205, 38279), (225, 38213), (229, 38204),

Gene: GTE8_46 Start: 38609, Stop: 37878, Start Num: 37

Candidate Starts for GTE8_46:

(18, 38672), (Start: 37 @38609 has 41 MA's), (50, 38561), (68, 38519), (Start: 92 @38432 has 1 MA's), (141, 38261), (143, 38255), (145, 38252), (156, 38207), (169, 38147), (176, 38120), (179, 38111), (205, 37958), (229, 37883),

Gene: Genamy16_86 Start: 56519, Stop: 57193, Start Num: 58

Candidate Starts for Genamy16_86:

(48, 56504), (Start: 57 @56516 has 6 MA's), (Start: 58 @56519 has 23 MA's), (Start: 69 @56558 has 2 MA's), (113, 56711), (118, 56738), (145, 56819), (156, 56855), (189, 56987), (192, 57002), (198, 57053),

Gene: Gibbin_87 Start: 58357, Stop: 59031, Start Num: 58

Candidate Starts for Gibbin_87:

(22, 58243), (Start: 25 @58258 has 6 MA's), (29, 58276), (Start: 37 @58297 has 41 MA's), (Start: 57 @58354 has 6 MA's), (Start: 58 @58357 has 23 MA's), (Start: 69 @58396 has 2 MA's), (113, 58549), (118, 58576), (145, 58657), (156, 58693), (189, 58825), (192, 58840), (198, 58891),

Gene: Gibson_36 Start: 30882, Stop: 30280, Start Num: 77

Candidate Starts for Gibson_36:

(Start: 77 @30882 has 7 MA's), (95, 30798), (128, 30696), (156, 30579), (172, 30501), (182, 30471), (192, 30405), (195, 30381), (196, 30375), (202, 30324),

Gene: Giuseppe_72 Start: 54784, Stop: 55455, Start Num: 47

Candidate Starts for Giuseppe_72:

(Start: 47 @54784 has 21 MA's), (Start: 57 @54805 has 6 MA's), (Start: 64 @54835 has 2 MA's), (Start: 92 @54937 has 1 MA's), (94, 54943), (96, 54952), (104, 54976), (157, 55111), (158, 55114), (169, 55168), (196, 55285), (220, 55384),

Gene: Greenbelt_54 Start: 27579, Stop: 26983, Start Num: 77

Candidate Starts for Greenbelt_54:

(17, 27780), (26, 27741), (Start: 77 @27579 has 7 MA's), (86, 27558), (130, 27381), (131, 27378), (154, 27288), (167, 27234), (192, 27108), (196, 27078), (209, 27006),

Gene: Gretellyn_85 Start: 58084, Stop: 58758, Start Num: 58

Candidate Starts for Gretellyn_85:

(22, 57970), (Start: 25 @57985 has 6 MA's), (29, 58003), (Start: 37 @58024 has 41 MA's), (Start: 57 @58081 has 6 MA's), (Start: 58 @58084 has 23 MA's), (Start: 69 @58123 has 2 MA's), (113, 58276), (118, 58303), (145, 58384), (156, 58420), (189, 58552), (192, 58567), (198, 58618),

Gene: GrootJr_59 Start: 44727, Stop: 43996, Start Num: 37

Candidate Starts for GrootJr_59:

(Start: 37 @44727 has 41 MA's), (50, 44679), (68, 44637), (Start: 92 @44550 has 1 MA's), (123, 44445), (141, 44379), (143, 44373), (145, 44370), (152, 44340), (156, 44325), (157, 44322), (205, 44076), (212, 44055), (229, 44001),

Gene: Gumball_70 Start: 55377, Stop: 55997, Start Num: 64

Candidate Starts for Gumball_70:

(Start: 47 @55326 has 21 MA's), (Start: 57 @55347 has 6 MA's), (Start: 64 @55377 has 2 MA's), (Start: 92 @55479 has 1 MA's), (94, 55485), (96, 55494), (104, 55518), (157, 55653), (158, 55656), (169, 55710), (196, 55827), (220, 55926),

Gene: GuyFagieri_57 Start: 42526, Stop: 41783, Start Num: 37

Candidate Starts for GuyFagieri_57:

(Start: 27 @42553 has 1 MA's), (Start: 37 @42526 has 41 MA's), (Start: 92 @42340 has 1 MA's), (93, 42337), (99, 42316), (109, 42289), (143, 42163), (157, 42106), (165, 42073), (168, 42058), (169, 42049), (196, 41929), (225, 41791), (227, 41788),

Gene: Hawkeye_82 Start: 56674, Stop: 57330, Start Num: 47

Candidate Starts for Hawkeye_82:

(Start: 47 @56674 has 21 MA's), (51, 56686), (Start: 92 @56824 has 1 MA's), (94, 56830), (104, 56863), (140, 56950), (190, 57136), (198, 57193),

Gene: Helpful_73 Start: 55172, Stop: 55843, Start Num: 47

Candidate Starts for Helpful_73:

(Start: 47 @55172 has 21 MA's), (Start: 57 @55193 has 6 MA's), (Start: 64 @55223 has 2 MA's), (Start: 92 @55325 has 1 MA's), (94, 55331), (96, 55340), (104, 55364), (157, 55499), (158, 55502), (169, 55556), (196, 55673), (220, 55772),

Gene: HubbaBubba_54 Start: 40875, Stop: 40135, Start Num: 37

Candidate Starts for HubbaBubba_54:

(Start: 37 @40875 has 41 MA's), (49, 40830), (63, 40797), (Start: 92 @40698 has 1 MA's), (120, 40605), (143, 40512), (145, 40509), (150, 40497), (176, 40377), (205, 40215), (223, 40161), (229, 40140),

Gene: IDyn_58 Start: 42307, Stop: 41567, Start Num: 37

Candidate Starts for IDyn_58:

(1, 43456), (2, 43183), (3, 42949), (4, 42643), (11, 42445), (Start: 37 @42307 has 41 MA's), (49, 42262), (63, 42229), (Start: 92 @42130 has 1 MA's), (120, 42037), (143, 41944), (145, 41941), (150, 41929), (176, 41809), (205, 41647), (223, 41593), (229, 41572),

Gene: Indlulamithi_82 Start: 58260, Stop: 58847, Start Num: 57

Candidate Starts for Indlulamithi_82:

(Start: 53 @58254 has 3 MA's), (Start: 57 @58260 has 6 MA's), (Start: 78 @58323 has 1 MA's), (88, 58344), (90, 58368), (93, 58389), (94, 58392), (116, 58452), (135, 58485), (189, 58674), (193, 58701), (195, 58710), (198, 58737), (202, 58773), (203, 58776), (206, 58791), (216, 58806),

Gene: Jalebi_85 Start: 59002, Stop: 59676, Start Num: 58

Candidate Starts for Jalebi_85:

(36, 58942), (40, 58966), (Start: 57 @58999 has 6 MA's), (Start: 58 @59002 has 23 MA's), (Start: 69 @59041 has 2 MA's), (113, 59194), (118, 59221), (145, 59302), (156, 59338), (177, 59428), (189, 59470), (198, 59536),

Gene: Jamemuya19_84 Start: 56124, Stop: 56798, Start Num: 58

Candidate Starts for Jamemuya19_84:

(48, 56109), (Start: 57 @56121 has 6 MA's), (Start: 58 @56124 has 23 MA's), (Start: 69 @56163 has 2 MA's), (113, 56316), (118, 56343), (145, 56424), (156, 56460), (189, 56592), (192, 56607), (198, 56658),

Gene: Jifall16_56 Start: 44999, Stop: 44268, Start Num: 37

Candidate Starts for Jifall16_56:

(Start: 37 @44999 has 41 MA's), (50, 44951), (68, 44909), (Start: 92 @44822 has 1 MA's), (123, 44717), (141, 44651), (143, 44645), (145, 44642), (152, 44612), (156, 44597), (157, 44594), (205, 44348), (212, 44327), (229, 44273),

Gene: Kabluna_61 Start: 44432, Stop: 43686, Start Num: 37

Candidate Starts for Kabluna_61:

(Start: 37 @44432 has 41 MA's), (68, 44330), (Start: 92 @44243 has 1 MA's), (110, 44189), (141, 44072), (149, 44054), (151, 44045), (155, 44021), (176, 43931), (192, 43862), (212, 43745), (223, 43712), (229, 43691),

Gene: KandZ_68 Start: 55001, Stop: 55672, Start Num: 47

Candidate Starts for KandZ_68:

(Start: 47 @55001 has 21 MA's), (Start: 57 @55022 has 6 MA's), (Start: 64 @55052 has 2 MA's), (Start: 92 @55154 has 1 MA's), (94, 55160), (96, 55169), (104, 55193), (106, 55196), (157, 55328), (158, 55331), (169, 55385), (196, 55502), (220, 55601),

Gene: KidneyBean_57 Start: 45123, Stop: 44392, Start Num: 37

Candidate Starts for KidneyBean_57:

(Start: 37 @45123 has 41 MA's), (50, 45075), (68, 45033), (Start: 92 @44946 has 1 MA's), (123, 44841), (141, 44775), (143, 44769), (145, 44766), (152, 44736), (156, 44721), (157, 44718), (205, 44472), (212, 44451), (229, 44397),

Gene: Kimchi1738_42 Start: 37740, Stop: 37153, Start Num: 66

Candidate Starts for Kimchi1738_42:

(Start: 66 @37740 has 8 MA's), (91, 37644), (94, 37641), (103, 37614), (107, 37602), (114, 37581), (173, 37374), (204, 37209), (205, 37200), (206, 37197), (217, 37170),

Gene: Konstantine_82 Start: 59921, Stop: 60673, Start Num: 76

Candidate Starts for Konstantine_82:

(Start: 76 @59921 has 9 MA's), (106, 60092), (122, 60149), (135, 60194), (141, 60215), (145, 60224), (156, 60263), (166, 60305), (170, 60329), (171, 60332), (175, 60353), (177, 60359), (188, 60425), (196, 60473), (214, 60572), (224, 60596),

Gene: Kurt_57 Start: 45360, Stop: 44629, Start Num: 37

Candidate Starts for Kurt_57:

(Start: 37 @45360 has 41 MA's), (50, 45312), (68, 45270), (Start: 92 @45183 has 1 MA's), (123, 45078), (141, 45012), (143, 45006), (145, 45003), (152, 44973), (156, 44958), (157, 44955), (205, 44709), (212, 44688), (229, 44634),

Gene: Labelle_92 Start: 61441, Stop: 62139, Start Num: 84

Candidate Starts for Labelle_92:

(70, 61414), (75, 61426), (79, 61432), (Start: 84 @61441 has 3 MA's), (97, 61519), (111, 61555), (145, 61669), (162, 61732), (163, 61741), (171, 61780), (181, 61828), (199, 61966), (208, 62005), (220, 62044), (234, 62104),

Gene: Lambo_85 Start: 58114, Stop: 58788, Start Num: 57

Candidate Starts for Lambo_85:

(55, 58111), (Start: 57 @58114 has 6 MA's), (113, 58306), (145, 58414), (156, 58450), (177, 58540), (189, 58582), (192, 58597), (198, 58648), (204, 58690),

Gene: LavAbarElk_85 Start: 57175, Stop: 57849, Start Num: 58

Candidate Starts for LavAbarElk_85:

(36, 57115), (40, 57139), (Start: 57 @57172 has 6 MA's), (Start: 58 @57175 has 23 MA's), (Start: 69 @57214 has 2 MA's), (113, 57367), (118, 57394), (145, 57475), (156, 57511), (177, 57601), (189, 57643), (198, 57709), (204, 57751),

Gene: Leopard_87 Start: 61735, Stop: 62415, Start Num: 47

Candidate Starts for Leopard_87:

(Start: 38 @61696 has 1 MA's), (46, 61732), (Start: 47 @61735 has 21 MA's), (56, 61753), (62, 61777), (117, 61966), (124, 61993), (141, 62044), (165, 62125), (170, 62155), (193, 62251), (196, 62266), (204, 62329), (230, 62398),

Gene: Lila22_86 Start: 58477, Stop: 59151, Start Num: 58

Candidate Starts for Lila22_86:

(36, 58417), (40, 58441), (Start: 57 @58474 has 6 MA's), (Start: 58 @58477 has 23 MA's), (Start: 69 @58516 has 2 MA's), (113, 58669), (118, 58696), (145, 58777), (156, 58813), (177, 58903), (189, 58945), (198, 59011), (204, 59053),

Gene: LilyPad_77 Start: 54664, Stop: 55503, Start Num: 27

Candidate Starts for LilyPad_77:

(Start: 27 @54664 has 1 MA's), (44, 54727), (54, 54751), (67, 54793), (73, 54808), (106, 54943), (110, 54955), (112, 54958), (165, 55144), (201, 55339), (232, 55447), (233, 55453),

Gene: LittleFella_79 Start: 55168, Stop: 56049, Start Num: 32

Candidate Starts for LittleFella_79:

(Start: 32 @55168 has 1 MA's), (39, 55186), (41, 55201), (54, 55237), (67, 55279), (91, 55369), (Start: 92 @55372 has 1 MA's), (106, 55426), (150, 55561), (194, 55759), (216, 55870), (218, 55876), (236, 55951), (237, 55969),

Gene: Lizz_36 Start: 30696, Stop: 30094, Start Num: 77

Candidate Starts for Lizz_36:

(Start: 77 @30696 has 7 MA's), (95, 30612), (121, 30531), (142, 30447), (156, 30393), (157, 30390), (172, 30315), (177, 30303), (192, 30219), (195, 30195), (196, 30189), (202, 30138),

Gene: Lollipop1437_62 Start: 46334, Stop: 45597, Start Num: 37

Candidate Starts for Lollipop1437_62:

(Start: 37 @46334 has 41 MA's), (87, 46199), (89, 46190), (Start: 92 @46151 has 1 MA's), (103, 46115), (143, 45980), (156, 45932), (169, 45872), (186, 45818), (196, 45752), (225, 45620), (229, 45611),

Gene: LuckyLeo_83 Start: 57772, Stop: 58446, Start Num: 57

Candidate Starts for LuckyLeo_83:

(55, 57769), (Start: 57 @57772 has 6 MA's), (91, 57901), (113, 57964), (118, 57991), (145, 58072), (156, 58108), (169, 58168), (177, 58198), (189, 58240), (198, 58306), (204, 58348),

Gene: MacGully_65 Start: 44606, Stop: 43860, Start Num: 37

Candidate Starts for MacGully_65:

(Start: 37 @44606 has 41 MA's), (68, 44507), (88, 44465), (89, 44462), (91, 44426), (Start: 92 @44423 has 1 MA's), (106, 44381), (117, 44345), (156, 44192), (157, 44189), (164, 44156), (192, 44036), (196, 44006), (227, 43865),

Gene: Madi_79 Start: 55533, Stop: 56354, Start Num: 25

Candidate Starts for Madi_79:

(22, 55518), (Start: 25 @55533 has 6 MA's), (44, 55605), (54, 55629), (67, 55671), (88, 55725), (94, 55773), (101, 55797), (106, 55821), (110, 55833), (112, 55836), (165, 56022), (232, 56325),

Gene: Madruga_91 Start: 61056, Stop: 61754, Start Num: 84

Candidate Starts for Madruga_91:

(63, 61014), (68, 61026), (71, 61032), (75, 61041), (79, 61047), (Start: 84 @61056 has 3 MA's), (97, 61134), (111, 61170), (145, 61284), (162, 61347), (163, 61356), (171, 61395), (181, 61443), (199, 61581), (208, 61620), (220, 61659), (234, 61719),

Gene: Marietta_59 Start: 42201, Stop: 41461, Start Num: 37

Candidate Starts for Marietta_59:

(12, 42333), (13, 42309), (14, 42297), (18, 42264), (Start: 37 @42201 has 41 MA's), (49, 42156), (63, 42123), (Start: 92 @42024 has 1 MA's), (120, 41931), (143, 41838), (145, 41835), (150, 41823), (176, 41703), (205, 41541), (223, 41487), (229, 41466),

Gene: Maselop_58 Start: 42366, Stop: 41626, Start Num: 37

Candidate Starts for Maselop_58:

(Start: 27 @42393 has 1 MA's), (Start: 37 @42366 has 41 MA's), (42, 42342), (68, 42267), (88, 42225), (91, 42186), (Start: 92 @42183 has 1 MA's), (93, 42180), (117, 42105), (143, 42006), (157, 41949), (165, 41916), (169, 41892), (186, 41838), (196, 41772), (225, 41634), (227, 41631),

Gene: Megatron06_80 Start: 60012, Stop: 60764, Start Num: 76

Candidate Starts for Megatron06_80:

(Start: 76 @60012 has 9 MA's), (106, 60183), (122, 60240), (135, 60285), (141, 60306), (145, 60315), (156, 60354), (166, 60396), (170, 60420), (171, 60423), (175, 60444), (177, 60450), (185, 60489), (188, 60516), (196, 60564), (214, 60663), (224, 60687),

Gene: MerCougar_59 Start: 45623, Stop: 44877, Start Num: 37

Candidate Starts for MerCougar_59:

(Start: 37 @45623 has 41 MA's), (65, 45530), (68, 45521), (Start: 92 @45434 has 1 MA's), (96, 45419), (110, 45380), (141, 45263), (176, 45122), (202, 44972), (212, 44936), (219, 44918), (223, 44903), (229, 44882),

Gene: Mima20_86 Start: 57809, Stop: 58483, Start Num: 58

Candidate Starts for Mima20_86:

(48, 57794), (Start: 57 @57806 has 6 MA's), (Start: 58 @57809 has 23 MA's), (Start: 69 @57848 has 2 MA's), (113, 58001), (118, 58028), (145, 58109), (156, 58145), (177, 58235), (189, 58277), (198, 58343),

Gene: MoiGyank_88 Start: 58408, Stop: 59082, Start Num: 58

Candidate Starts for MoiGyank_88:

(Start: 57 @58405 has 6 MA's), (Start: 58 @58408 has 23 MA's), (Start: 69 @58447 has 2 MA's), (113, 58600), (118, 58627), (145, 58708), (156, 58744), (177, 58834), (189, 58876), (198, 58942),

Gene: MontyDev_85 Start: 62366, Stop: 63073, Start Num: 43

Candidate Starts for MontyDev_85:

(Start: 43 @62366 has 9 MA's), (59, 62417), (80, 62468), (91, 62537), (93, 62543), (102, 62573), (125, 62633), (148, 62681), (157, 62711), (158, 62714), (168, 62765), (169, 62774), (186, 62828), (195, 62885), (201, 62945), (202, 62948), (204, 62954), (215, 62996), (228, 63038),

Gene: Mopey_72 Start: 54810, Stop: 55481, Start Num: 47

Candidate Starts for Mopey_72:

(Start: 47 @54810 has 21 MA's), (Start: 57 @54831 has 6 MA's), (Start: 64 @54861 has 2 MA's), (Start: 92 @54963 has 1 MA's), (94, 54969), (96, 54978), (104, 55002), (157, 55137), (158, 55140), (169, 55194), (196, 55311), (220, 55410),

Gene: MrMiyagi_90 Start: 56804, Stop: 57415, Start Num: 53

Candidate Starts for MrMiyagi_90:

(Start: 53 @56804 has 3 MA's), (63, 56840), (88, 56897), (115, 57011), (129, 57044), (142, 57071), (161, 57131), (168, 57152), (179, 57197), (187, 57227), (189, 57236), (192, 57248), (198, 57299), (202, 57335), (206, 57353), (216, 57380),

Gene: NadineRae_57 Start: 41445, Stop: 40705, Start Num: 37

Candidate Starts for NadineRae_57:

(18, 41508), (Start: 37 @41445 has 41 MA's), (49, 41400), (63, 41367), (Start: 92 @41268 has 1 MA's), (120, 41175), (143, 41082), (145, 41079), (150, 41067), (176, 40947), (205, 40785), (223, 40731), (229, 40710),

Gene: NatB6_57 Start: 44417, Stop: 43686, Start Num: 37

Candidate Starts for NatB6_57:

(Start: 37 @44417 has 41 MA's), (50, 44369), (68, 44327), (Start: 92 @44240 has 1 MA's), (123, 44135), (141, 44069), (143, 44063), (145, 44060), (152, 44030), (156, 44015), (157, 44012), (205, 43766), (212, 43745), (229, 43691),

Gene: Nilo_86 Start: 62725, Stop: 63432, Start Num: 43

Candidate Starts for Nilo_86:

(Start: 43 @62725 has 9 MA's), (59, 62776), (80, 62827), (91, 62896), (93, 62902), (102, 62932), (125, 62992), (148, 63040), (157, 63070), (158, 63073), (168, 63124), (169, 63133), (186, 63187), (195, 63244), (201, 63304), (202, 63307), (204, 63313), (215, 63355), (228, 63397),

Gene: NorManre_90 Start: 59321, Stop: 59995, Start Num: 58

Candidate Starts for NorManre_90:

(36, 59261), (40, 59285), (Start: 58 @59321 has 23 MA's), (113, 59513), (145, 59621), (156, 59657), (177, 59747), (189, 59789), (198, 59855), (204, 59897),

Gene: NosilaM_61 Start: 45330, Stop: 44584, Start Num: 37

Candidate Starts for NosilaM_61:

(36, 45333), (Start: 37 @45330 has 41 MA's), (68, 45228), (Start: 92 @45141 has 1 MA's), (110, 45087), (141, 44970), (151, 44943), (169, 44856), (176, 44829), (177, 44826), (192, 44760), (201, 44682), (212, 44643), (223, 44610), (229, 44589),

Gene: Nova_70 Start: 55349, Stop: 56020, Start Num: 47

Candidate Starts for Nova_70:

(Start: 47 @55349 has 21 MA's), (Start: 57 @55370 has 6 MA's), (Start: 64 @55400 has 2 MA's), (Start: 92 @55502 has 1 MA's), (94, 55508), (96, 55517), (104, 55541), (157, 55676), (158, 55679), (169, 55733), (196, 55850), (220, 55949),

Gene: NovaSharks_85 Start: 56222, Stop: 56896, Start Num: 58

Candidate Starts for NovaSharks_85:

(48, 56207), (Start: 57 @56219 has 6 MA's), (Start: 58 @56222 has 23 MA's), (Start: 69 @56261 has 2 MA's), (113, 56414), (118, 56441), (145, 56522), (156, 56558), (189, 56690), (192, 56705), (198, 56756),

Gene: NovumRegina_57 Start: 44726, Stop: 43995, Start Num: 37

Candidate Starts for NovumRegina_57:

(Start: 37 @44726 has 41 MA's), (50, 44678), (68, 44636), (Start: 92 @44549 has 1 MA's), (123, 44444), (141, 44378), (143, 44372), (145, 44369), (152, 44339), (156, 44324), (157, 44321), (205, 44075), (212, 44054), (229, 44000),

Gene: Oaker_79 Start: 60029, Stop: 60781, Start Num: 76

Candidate Starts for Oaker_79:

(Start: 76 @60029 has 9 MA's), (106, 60200), (122, 60257), (135, 60302), (141, 60323), (145, 60332), (156, 60371), (166, 60413), (170, 60437), (171, 60440), (175, 60461), (177, 60467), (188, 60533), (196, 60581), (224, 60704),

Gene: Onyinye_87 Start: 61230, Stop: 61910, Start Num: 47

Candidate Starts for Onyinye_87:

(Start: 38 @61191 has 1 MA's), (46, 61227), (Start: 47 @61230 has 21 MA's), (56, 61248), (62, 61272), (117, 61461), (124, 61488), (141, 61539), (165, 61620), (170, 61650), (193, 61746), (196, 61761), (204, 61824), (230, 61893),

Gene: OtterstedtS21_86 Start: 58125, Stop: 58799, Start Num: 58

Candidate Starts for OtterstedtS21_86:

(36, 58068), (40, 58092), (Start: 57 @58122 has 6 MA's), (Start: 58 @58125 has 23 MA's), (Start: 69 @58164 has 2 MA's), (113, 58317), (118, 58344), (145, 58425), (156, 58461), (177, 58551), (189, 58593), (192, 58608), (198, 58659), (204, 58701),

Gene: Outis_59 Start: 45317, Stop: 44571, Start Num: 37

Candidate Starts for Outis_59:

(Start: 37 @45317 has 41 MA's), (65, 45224), (68, 45215), (81, 45194), (Start: 92 @45128 has 1 MA's), (110, 45074), (141, 44957), (152, 44918), (155, 44906), (176, 44816), (202, 44666), (212, 44630), (223, 44597), (229, 44576),

Gene: P1201_57 Start: 44915, Stop: 44262, Start Num: 60

Candidate Starts for P1201_57:

(60, 44915), (105, 44756), (126, 44690), (174, 44510), (204, 44312), (207, 44300),

Gene: PBI1_66 Start: 54941, Stop: 55459, Start Num: 92

Candidate Starts for PBI1_66:

(Start: 47 @54788 has 21 MA's), (Start: 57 @54809 has 6 MA's), (Start: 64 @54839 has 2 MA's), (Start: 92 @54941 has 1 MA's), (94, 54947), (96, 54956), (104, 54980), (157, 55115), (158, 55118), (169, 55172), (196, 55289), (220, 55388),

Gene: PHTowN_36 Start: 30694, Stop: 30092, Start Num: 77

Candidate Starts for PHTowN_36:

(Start: 77 @30694 has 7 MA's), (95, 30610), (121, 30529), (142, 30445), (156, 30391), (157, 30388), (172, 30313), (177, 30301), (192, 30217), (195, 30193), (196, 30187), (202, 30136),

Gene: PLOT_70 Start: 54810, Stop: 55481, Start Num: 47

Candidate Starts for PLOT_70:

(Start: 47 @54810 has 21 MA's), (Start: 57 @54831 has 6 MA's), (Start: 64 @54861 has 2 MA's), (Start: 92 @54963 has 1 MA's), (94, 54969), (96, 54978), (104, 55002), (106, 55005), (157, 55137), (158, 55140), (169, 55194), (196, 55311), (220, 55410),

Gene: Papyrus_82 Start: 61384, Stop: 62091, Start Num: 43

Candidate Starts for Papyrus_82:

(Start: 43 @61384 has 9 MA's), (59, 61435), (80, 61486), (91, 61555), (93, 61561), (102, 61591), (125, 61651), (148, 61699), (157, 61729), (158, 61732), (168, 61783), (169, 61792), (186, 61846), (195, 61903), (201, 61963), (202, 61966), (204, 61972), (215, 62014), (228, 62056),

Gene: ParvusTarda_85 Start: 57398, Stop: 58072, Start Num: 58

Candidate Starts for ParvusTarda_85:

(36, 57338), (40, 57362), (Start: 57 @57395 has 6 MA's), (Start: 58 @57398 has 23 MA's), (Start: 69 @57437 has 2 MA's), (113, 57590), (118, 57617), (145, 57698), (156, 57734), (177, 57824), (189, 57866), (192, 57881), (198, 57932), (204, 57974),

Gene: Patience_93 Start: 61969, Stop: 62667, Start Num: 84

Candidate Starts for Patience_93:

(63, 61927), (68, 61939), (71, 61945), (75, 61954), (79, 61960), (Start: 84 @61969 has 3 MA's), (97, 62047), (111, 62083), (145, 62197), (162, 62260), (163, 62269), (171, 62308), (181, 62356), (199, 62494), (208, 62533), (220, 62572), (234, 62632),

Gene: Patio_61 Start: 45570, Stop: 44833, Start Num: 37

Candidate Starts for Patio_61:

(Start: 37 @45570 has 41 MA's), (87, 45435), (89, 45426), (Start: 92 @45387 has 1 MA's), (98, 45366), (143, 45216), (156, 45168), (157, 45165), (169, 45108), (186, 45054), (196, 44988), (225, 44856), (229, 44847),

Gene: Patos_90 Start: 59320, Stop: 59994, Start Num: 58

Candidate Starts for Patos_90:

(36, 59260), (40, 59284), (Start: 58 @59320 has 23 MA's), (113, 59512), (145, 59620), (156, 59656), (177, 59746), (189, 59788), (198, 59854), (204, 59896),

Gene: Penelope2018_70 Start: 54844, Stop: 55515, Start Num: 47

Candidate Starts for Penelope2018_70:

(Start: 47 @54844 has 21 MA's), (Start: 57 @54865 has 6 MA's), (Start: 64 @54895 has 2 MA's), (Start: 92 @54997 has 1 MA's), (94, 55003), (96, 55012), (104, 55036), (157, 55171), (158, 55174), (169, 55228), (196, 55345), (220, 55444),

Gene: PeteyPab_44 Start: 39498, Stop: 38911, Start Num: 66

Candidate Starts for PeteyPab_44:

(Start: 66 @39498 has 8 MA's), (91, 39402), (94, 39399), (103, 39372), (107, 39360), (114, 39339), (173, 39132), (204, 38967), (205, 38958), (206, 38955), (217, 38928),

Gene: Phalaborwa_73 Start: 55437, Stop: 56108, Start Num: 47

Candidate Starts for Phalaborwa_73:

(Start: 47 @55437 has 21 MA's), (Start: 57 @55458 has 6 MA's), (Start: 64 @55488 has 2 MA's), (Start: 92 @55590 has 1 MA's), (94, 55596), (104, 55629), (106, 55632), (157, 55764), (158, 55767), (159, 55779), (169, 55821), (177, 55851), (220, 56037),

Gene: Phomeo_56 Start: 44995, Stop: 44264, Start Num: 37

Candidate Starts for Phomeo_56:

(Start: 37 @44995 has 41 MA's), (50, 44947), (68, 44905), (Start: 92 @44818 has 1 MA's), (123, 44713), (141, 44647), (143, 44641), (145, 44638), (152, 44608), (156, 44593), (157, 44590), (205, 44344), (212, 44323), (229, 44269),

Gene: Phreeze_78 Start: 58999, Stop: 59703, Start Num: 76

Candidate Starts for Phreeze_78:

(Start: 76 @58999 has 9 MA's), (109, 59131), (112, 59137), (122, 59179), (135, 59224), (141, 59245), (145, 59254), (156, 59293), (166, 59335), (170, 59359), (171, 59362), (175, 59383), (177, 59389), (188, 59455), (224, 59626),

Gene: Pleakley_65 Start: 44524, Stop: 43778, Start Num: 8

Candidate Starts for Pleakley_65:

(7, 44584), (Start: 8 @44524 has 2 MA's), (61, 44443), (87, 44386), (88, 44380), (Start: 92 @44338 has 1 MA's), (109, 44287), (120, 44245), (141, 44167), (157, 44110), (160, 44092), (176, 44026), (202, 43882), (221, 43825), (225, 43801), (229, 43792),

Gene: Polyuyki_58 Start: 42355, Stop: 41615, Start Num: 37

Candidate Starts for Polyuyki_58:

(Start: 27 @42382 has 1 MA's), (Start: 37 @42355 has 41 MA's), (42, 42331), (68, 42256), (88, 42214), (91, 42175), (Start: 92 @42172 has 1 MA's), (93, 42169), (117, 42094), (143, 41995), (157, 41938), (165, 41905), (169, 41881), (186, 41827), (196, 41761), (225, 41623), (227, 41620),

Gene: PotatoChip_45 Start: 39500, Stop: 38913, Start Num: 66

Candidate Starts for PotatoChip_45:

(Start: 66 @39500 has 8 MA's), (91, 39404), (94, 39401), (103, 39374), (107, 39362), (114, 39341), (173, 39134), (204, 38969), (205, 38960), (206, 38957), (217, 38930),

Gene: Prager_71 Start: 54904, Stop: 55575, Start Num: 47

Candidate Starts for Prager_71:

(Start: 47 @54904 has 21 MA's), (Start: 57 @54925 has 6 MA's), (Start: 64 @54955 has 2 MA's), (Start: 92 @55057 has 1 MA's), (94, 55063), (96, 55072), (104, 55096), (157, 55231), (158, 55234), (169, 55288), (196, 55405), (220, 55504),

Gene: Predator_79 Start: 59366, Stop: 60121, Start Num: 78

Candidate Starts for Predator_79:

(45, 59273), (Start: 78 @59366 has 1 MA's), (88, 59396), (91, 59435), (106, 59543), (139, 59660), (145, 59675), (149, 59684), (156, 59714), (171, 59783), (188, 59873), (192, 59891), (235, 60092),

Gene: Puissant_80 Start: 59219, Stop: 59914, Start Num: 82

Candidate Starts for Puissant_80:

(82, 59219), (83, 59222), (94, 59285), (109, 59345), (112, 59351), (119, 59384), (125, 59405), (135, 59438), (141, 59459), (145, 59468), (156, 59507), (166, 59549), (169, 59567), (171, 59576), (175, 59597), (177, 59603), (185, 59642), (188, 59669), (192, 59687), (224, 59837),

Gene: Ranch_89 Start: 57797, Stop: 58471, Start Num: 57

Candidate Starts for Ranch_89:

(55, 57794), (Start: 57 @57797 has 6 MA's), (87, 57881), (113, 57989), (145, 58097), (156, 58133), (177, 58223), (189, 58265), (198, 58331),

Gene: RazorC_84 Start: 56264, Stop: 56938, Start Num: 58

Candidate Starts for RazorC_84:

(48, 56249), (Start: 57 @56261 has 6 MA's), (Start: 58 @56264 has 23 MA's), (Start: 69 @56303 has 2 MA's), (113, 56456), (118, 56483), (145, 56564), (156, 56600), (189, 56732), (192, 56747), (198, 56798),

Gene: RedRaider_65 Start: 47592, Stop: 46855, Start Num: 37

Candidate Starts for RedRaider_65:

(Start: 37 @47592 has 41 MA's), (60, 47517), (87, 47457), (89, 47448), (Start: 92 @47409 has 1 MA's), (143, 47238), (156, 47190), (157, 47187), (169, 47130), (186, 47076), (196, 47010), (225, 46878), (229, 46869),

Gene: Riparian_85 Start: 62171, Stop: 62878, Start Num: 43

Candidate Starts for Riparian_85:

(Start: 43 @62171 has 9 MA's), (59, 62222), (80, 62273), (91, 62342), (93, 62348), (102, 62378), (125, 62438), (148, 62486), (157, 62516), (158, 62519), (168, 62570), (169, 62579), (186, 62633), (195,

62690), (201, 62750), (202, 62753), (204, 62759), (215, 62801), (228, 62843),

Gene: Rooney_36 Start: 30879, Stop: 30277, Start Num: 77

Candidate Starts for Rooney_36:

(Start: 77 @30879 has 7 MA's), (95, 30795), (128, 30693), (156, 30576), (172, 30498), (182, 30468), (192, 30402), (195, 30378), (196, 30372), (202, 30321),

Gene: Rope_83 Start: 62330, Stop: 63037, Start Num: 43

Candidate Starts for Rope_83:

(Start: 43 @62330 has 9 MA's), (59, 62381), (80, 62432), (91, 62501), (93, 62507), (94, 62510), (102, 62537), (125, 62597), (148, 62645), (157, 62675), (158, 62678), (168, 62729), (169, 62738), (186, 62792), (195, 62849), (201, 62909), (202, 62912), (204, 62918), (215, 62960), (228, 63002),

Gene: Rumi_84 Start: 55807, Stop: 56481, Start Num: 58

Candidate Starts for Rumi_84:

(48, 55792), (Start: 57 @55804 has 6 MA's), (Start: 58 @55807 has 23 MA's), (Start: 69 @55846 has 2 MA's), (113, 55999), (118, 56026), (145, 56107), (156, 56143), (189, 56275), (192, 56290), (198, 56341),

Gene: Sadboi_85 Start: 58124, Stop: 58759, Start Num: 69

Candidate Starts for Sadboi_85:

(21, 57971), (23, 57986), (28, 58004), (34, 58025), (55, 58082), (Start: 57 @58085 has 6 MA's), (Start: 69 @58124 has 2 MA's), (113, 58277), (145, 58385), (156, 58421), (177, 58511), (189, 58553), (198, 58619), (204, 58661),

Gene: Sampudon_87 Start: 59002, Stop: 59676, Start Num: 58

Candidate Starts for Sampudon_87:

(36, 58942), (40, 58966), (Start: 57 @58999 has 6 MA's), (Start: 58 @59002 has 23 MA's), (Start: 69 @59041 has 2 MA's), (113, 59194), (118, 59221), (145, 59302), (156, 59338), (177, 59428), (189, 59470), (198, 59536),

Gene: Scuba_66 Start: 44598, Stop: 43852, Start Num: 8

Candidate Starts for Scuba_66:

(7, 44658), (Start: 8 @44598 has 2 MA's), (61, 44517), (87, 44460), (88, 44454), (Start: 92 @44412 has 1 MA's), (109, 44361), (120, 44319), (141, 44241), (157, 44184), (160, 44166), (176, 44100), (202, 43956), (221, 43899), (225, 43875), (229, 43866),

Gene: Send513_83 Start: 62707, Stop: 63414, Start Num: 43

Candidate Starts for Send513_83:

(Start: 43 @62707 has 9 MA's), (59, 62758), (80, 62809), (91, 62878), (93, 62884), (94, 62887), (102, 62914), (125, 62974), (148, 63022), (157, 63052), (158, 63055), (168, 63106), (169, 63115), (186, 63169), (195, 63226), (201, 63286), (202, 63289), (204, 63295), (215, 63337), (228, 63379),

Gene: ShakeNBake_36 Start: 30712, Stop: 30110, Start Num: 77

Candidate Starts for ShakeNBake_36:

(Start: 77 @30712 has 7 MA's), (95, 30628), (121, 30547), (142, 30463), (156, 30409), (157, 30406), (172, 30331), (177, 30319), (192, 30235), (195, 30211), (196, 30205), (202, 30154),

Gene: Sienna_80 Start: 55774, Stop: 56595, Start Num: 25

Candidate Starts for Sienna_80:

(22, 55759), (Start: 25 @55774 has 6 MA's), (44, 55846), (54, 55870), (67, 55912), (88, 55966), (94, 56014), (101, 56038), (106, 56062), (112, 56077), (165, 56263),

Gene: SirHarley_72 Start: 55309, Stop: 55980, Start Num: 47

Candidate Starts for SirHarley_72:

(Start: 47 @55309 has 21 MA's), (Start: 57 @55330 has 6 MA's), (Start: 64 @55360 has 2 MA's), (Start: 92 @55462 has 1 MA's), (94, 55468), (96, 55477), (104, 55501), (157, 55636), (158, 55639), (169, 55693), (196, 55810), (220, 55909),

Gene: Skysand_60 Start: 45790, Stop: 45053, Start Num: 37

Candidate Starts for Skysand_60:

(5, 45910), (6, 45898), (Start: 37 @45790 has 41 MA's), (87, 45655), (89, 45646), (Start: 92 @45607 has 1 MA's), (143, 45436), (156, 45388), (157, 45385), (169, 45328), (186, 45274), (196, 45208), (225, 45076), (229, 45067),

Gene: StarStruck_59 Start: 45317, Stop: 44571, Start Num: 37

Candidate Starts for StarStruck_59:

(Start: 37 @45317 has 41 MA's), (65, 45224), (68, 45215), (81, 45194), (Start: 92 @45128 has 1 MA's), (110, 45074), (141, 44957), (152, 44918), (155, 44906), (176, 44816), (202, 44666), (212, 44630), (223, 44597), (229, 44576),

Gene: Stickynote_44 Start: 38920, Stop: 38333, Start Num: 66

Candidate Starts for Stickynote_44:

(Start: 66 @38920 has 8 MA's), (91, 38824), (94, 38821), (103, 38794), (107, 38782), (114, 38761), (173, 38554), (204, 38389), (206, 38377), (217, 38350),

Gene: Stormer_85 Start: 55949, Stop: 56623, Start Num: 58

Candidate Starts for Stormer_85:

(30, 55877), (34, 55886), (36, 55889), (40, 55913), (Start: 58 @55949 has 23 MA's), (113, 56141), (118, 56168), (145, 56249), (156, 56285), (177, 56375), (189, 56417), (192, 56432), (198, 56483),

Gene: Sukkupi_58 Start: 43757, Stop: 43017, Start Num: 37

Candidate Starts for Sukkupi_58:

(12, 43889), (13, 43865), (18, 43820), (Start: 37 @43757 has 41 MA's), (49, 43712), (Start: 92 @43580 has 1 MA's), (120, 43487), (143, 43394), (145, 43391), (150, 43379), (157, 43343), (176, 43259), (205, 43097), (223, 43043), (229, 43022),

Gene: SuperSulley_59 Start: 45496, Stop: 44750, Start Num: 37

Candidate Starts for SuperSulley_59:

(Start: 37 @45496 has 41 MA's), (68, 45394), (89, 45346), (Start: 92 @45307 has 1 MA's), (110, 45253), (141, 45136), (149, 45118), (151, 45109), (176, 44995), (192, 44926), (212, 44809), (223, 44776), (229, 44755),

Gene: Suzy_77 Start: 55845, Stop: 56666, Start Num: 20

Candidate Starts for Suzy_77:

(Start: 20 @55845 has 1 MA's), (44, 55917), (54, 55941), (67, 55983), (88, 56037), (94, 56085), (101, 56109), (106, 56133), (112, 56148), (165, 56334),

Gene: Terapin_81 Start: 55698, Stop: 56519, Start Num: 25

Candidate Starts for Terapin_81:

(16, 55659), (Start: 25 @55698 has 6 MA's), (44, 55770), (54, 55794), (67, 55836), (88, 55890), (94, 55938), (101, 55962), (106, 55986), (112, 56001), (165, 56187),

Gene: Thoth_70 Start: 54898, Stop: 55569, Start Num: 47

Candidate Starts for Thoth_70:

(Start: 47 @54898 has 21 MA's), (Start: 57 @54919 has 6 MA's), (Start: 64 @54949 has 2 MA's), (Start: 92 @55051 has 1 MA's), (94, 55057), (96, 55066), (104, 55090), (157, 55225), (158, 55228), (169, 55282), (196, 55399), (220, 55498),

Gene: Thumb_80 Start: 59431, Stop: 60135, Start Num: 76

Candidate Starts for Thumb_80:

(Start: 76 @59431 has 9 MA's), (109, 59563), (112, 59569), (122, 59611), (135, 59656), (141, 59677), (145, 59686), (156, 59725), (166, 59767), (170, 59791), (171, 59794), (175, 59815), (177, 59821), (188, 59887), (224, 60058), (235, 60106),

Gene: Tillicus_81 Start: 57502, Stop: 58176, Start Num: 57

Candidate Starts for Tillicus_81:

(21, 57388), (23, 57403), (28, 57421), (34, 57442), (55, 57499), (Start: 57 @57502 has 6 MA's), (113, 57694), (118, 57721), (145, 57802), (156, 57838), (169, 57898), (177, 57928), (189, 57970), (198, 58036), (204, 58078),

Gene: Tracker_57 Start: 44141, Stop: 43410, Start Num: 37

Candidate Starts for Tracker_57:

(18, 44204), (Start: 37 @44141 has 41 MA's), (50, 44093), (68, 44051), (Start: 92 @43964 has 1 MA's), (123, 43859), (141, 43793), (143, 43787), (145, 43784), (152, 43754), (156, 43739), (157, 43736), (205, 43490), (212, 43469), (229, 43415),

Gene: Troll4_70 Start: 55017, Stop: 55637, Start Num: 64

Candidate Starts for Troll4_70:

(Start: 47 @54966 has 21 MA's), (Start: 57 @54987 has 6 MA's), (Start: 64 @55017 has 2 MA's), (Start: 92 @55119 has 1 MA's), (94, 55125), (96, 55134), (104, 55158), (157, 55293), (158, 55296), (169, 55350), (196, 55467), (220, 55566),

Gene: Turuncu_62 Start: 45742, Stop: 44996, Start Num: 9

Candidate Starts for Turuncu_62:

(Start: 9 @45742 has 1 MA's), (74, 45631), (Start: 84 @45616 has 3 MA's), (87, 45604), (89, 45595), (91, 45559), (103, 45520), (109, 45505), (157, 45334), (169, 45277), (196, 45151), (197, 45145), (225, 45019), (229, 45010),

Gene: Visconti_71 Start: 54874, Stop: 55545, Start Num: 47

Candidate Starts for Visconti_71:

(Start: 47 @54874 has 21 MA's), (Start: 57 @54895 has 6 MA's), (Start: 64 @54925 has 2 MA's), (Start: 92 @55027 has 1 MA's), (94, 55033), (96, 55042), (104, 55066), (157, 55201), (158, 55204), (169, 55258), (196, 55375), (220, 55474),

Gene: WaldoWhy_72 Start: 54894, Stop: 55562, Start Num: 47

Candidate Starts for WaldoWhy_72:

(Start: 47 @54894 has 21 MA's), (Start: 57 @54915 has 6 MA's), (Start: 64 @54945 has 2 MA's), (Start: 92 @55047 has 1 MA's), (94, 55053), (96, 55062), (104, 55086), (106, 55089), (157, 55221), (158, 55224), (169, 55278), (220, 55494),

Gene: Weiss13_83 Start: 62408, Stop: 63115, Start Num: 43

Candidate Starts for Weiss13_83:

(Start: 43 @62408 has 9 MA's), (59, 62459), (80, 62510), (91, 62579), (93, 62585), (102, 62615), (125, 62675), (148, 62723), (157, 62753), (158, 62756), (168, 62807), (169, 62816), (186, 62870), (195, 62927), (201, 62987), (202, 62990), (204, 62996), (215, 63038), (228, 63080),

Gene: Wentworth_37 Start: 31184, Stop: 30582, Start Num: 77

Candidate Starts for Wentworth_37:

(Start: 77 @31184 has 7 MA's), (115, 31040), (128, 30998), (156, 30881), (182, 30773), (192, 30707), (195, 30683), (196, 30677), (202, 30626), (212, 30590),

Gene: Wheezy_57 Start: 44349, Stop: 43618, Start Num: 37

Candidate Starts for Wheezy_57:

(18, 44412), (Start: 37 @44349 has 41 MA's), (50, 44301), (68, 44259), (Start: 92 @44172 has 1 MA's), (123, 44067), (141, 44001), (143, 43995), (145, 43992), (152, 43962), (156, 43947), (157, 43944), (205, 43698), (212, 43677), (229, 43623),

Gene: WhoseManz_58 Start: 41814, Stop: 41074, Start Num: 37

Candidate Starts for WhoseManz_58:

(5, 42120), (12, 41946), (13, 41922), (14, 41910), (18, 41877), (Start: 37 @41814 has 41 MA's), (49, 41769), (63, 41736), (Start: 92 @41637 has 1 MA's), (120, 41544), (143, 41451), (145, 41448), (150, 41436), (176, 41316), (205, 41154), (223, 41100), (229, 41079),

Gene: Wilkos_37 Start: 30999, Stop: 30397, Start Num: 77

Candidate Starts for Wilkos_37:

(Start: 77 @30999 has 7 MA's), (97, 30909), (128, 30813), (130, 30801), (156, 30696), (157, 30693), (192, 30522), (195, 30498), (196, 30492), (202, 30441),

Gene: Wojtek_78 Start: 58104, Stop: 58778, Start Num: 58

Candidate Starts for Wojtek_78:

(36, 58044), (40, 58068), (Start: 58 @58104 has 23 MA's), (113, 58296), (145, 58404), (156, 58440), (177, 58530), (189, 58572), (192, 58587), (198, 58638), (204, 58680),

Gene: Xenia2_88 Start: 58445, Stop: 59125, Start Num: 58

Candidate Starts for Xenia2_88:

(Start: 58 @58445 has 23 MA's), (89, 58538), (98, 58598), (113, 58637), (141, 58736), (145, 58745), (167, 58829), (189, 58913), (198, 58979),

Gene: Yara_34 Start: 30376, Stop: 29774, Start Num: 76

Candidate Starts for Yara_34:

(26, 30535), (29, 30520), (52, 30445), (65, 30403), (70, 30391), (Start: 76 @30376 has 9 MA's), (Start: 78 @30370 has 1 MA's), (104, 30259), (121, 30205), (130, 30172), (131, 30169), (144, 30115), (157, 30070), (184, 29941), (196, 29869), (204, 29812), (211, 29791),

Gene: Yelo_82 Start: 62763, Stop: 63470, Start Num: 43

Candidate Starts for Yelo_82:

(Start: 43 @62763 has 9 MA's), (59, 62814), (80, 62865), (91, 62934), (93, 62940), (102, 62970), (125, 63030), (148, 63078), (157, 63108), (158, 63111), (168, 63162), (169, 63171), (186, 63225), (195, 63282), (201, 63342), (202, 63345), (204, 63351), (215, 63393), (228, 63435),

Gene: Yikes_86 Start: 58672, Stop: 59307, Start Num: 69

Candidate Starts for Yikes_86:

(22, 58519), (Start: 25 @58534 has 6 MA's), (29, 58552), (Start: 37 @58573 has 41 MA's), (Start: 57 @58630 has 6 MA's), (Start: 58 @58633 has 23 MA's), (Start: 69 @58672 has 2 MA's), (113, 58825), (118, 58852), (145, 58933), (156, 58969), (189, 59101), (192, 59116), (198, 59167),

Gene: Yndexa_58 Start: 43757, Stop: 43017, Start Num: 37

Candidate Starts for Yndexa_58:

(12, 43889), (13, 43865), (18, 43820), (Start: 37 @43757 has 41 MA's), (49, 43712), (Start: 92 @43580 has 1 MA's), (120, 43487), (143, 43394), (145, 43391), (150, 43379), (157, 43343), (176, 43259), (205,

43097), (223, 43043), (229, 43022),

Gene: Zany_84 Start: 58887, Stop: 59561, Start Num: 57

Candidate Starts for Zany_84:

(55, 58884), (Start: 57 @58887 has 6 MA's), (113, 59079), (118, 59106), (145, 59187), (156, 59223), (189, 59355), (192, 59370), (198, 59421), (204, 59463),

Gene: Zenon_85 Start: 62734, Stop: 63441, Start Num: 43

Candidate Starts for Zenon_85:

(Start: 43 @62734 has 9 MA's), (59, 62785), (80, 62836), (91, 62905), (93, 62911), (102, 62941), (125, 63001), (148, 63049), (157, 63079), (158, 63082), (168, 63133), (169, 63142), (186, 63196), (195, 63253), (201, 63313), (202, 63316), (204, 63322), (215, 63364), (228, 63406),

Gene: Zion_45 Start: 39498, Stop: 38911, Start Num: 66

Candidate Starts for Zion_45:

(Start: 66 @39498 has 8 MA's), (91, 39402), (94, 39399), (103, 39372), (107, 39360), (114, 39339), (173, 39132), (204, 38967), (205, 38958), (206, 38955), (217, 38928),