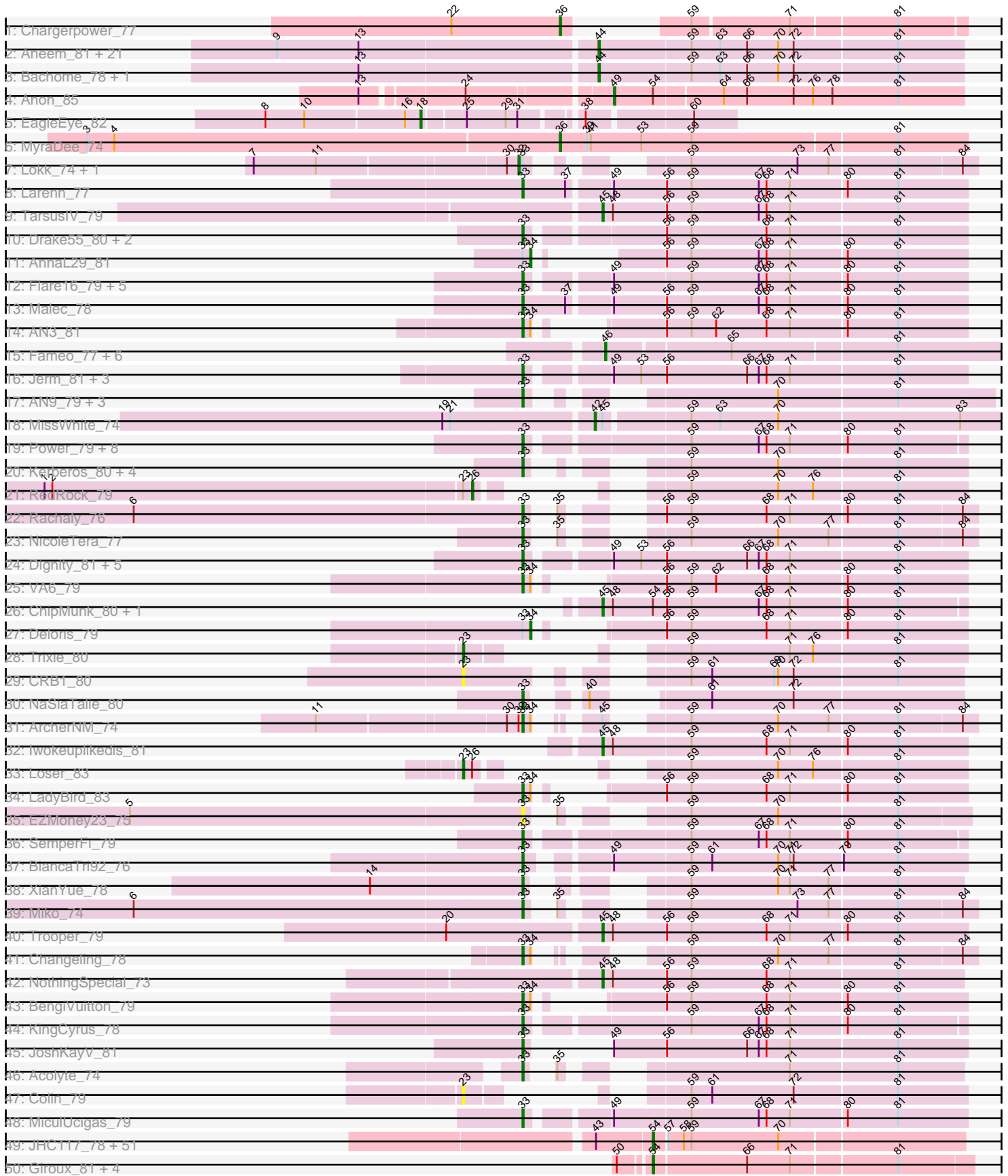
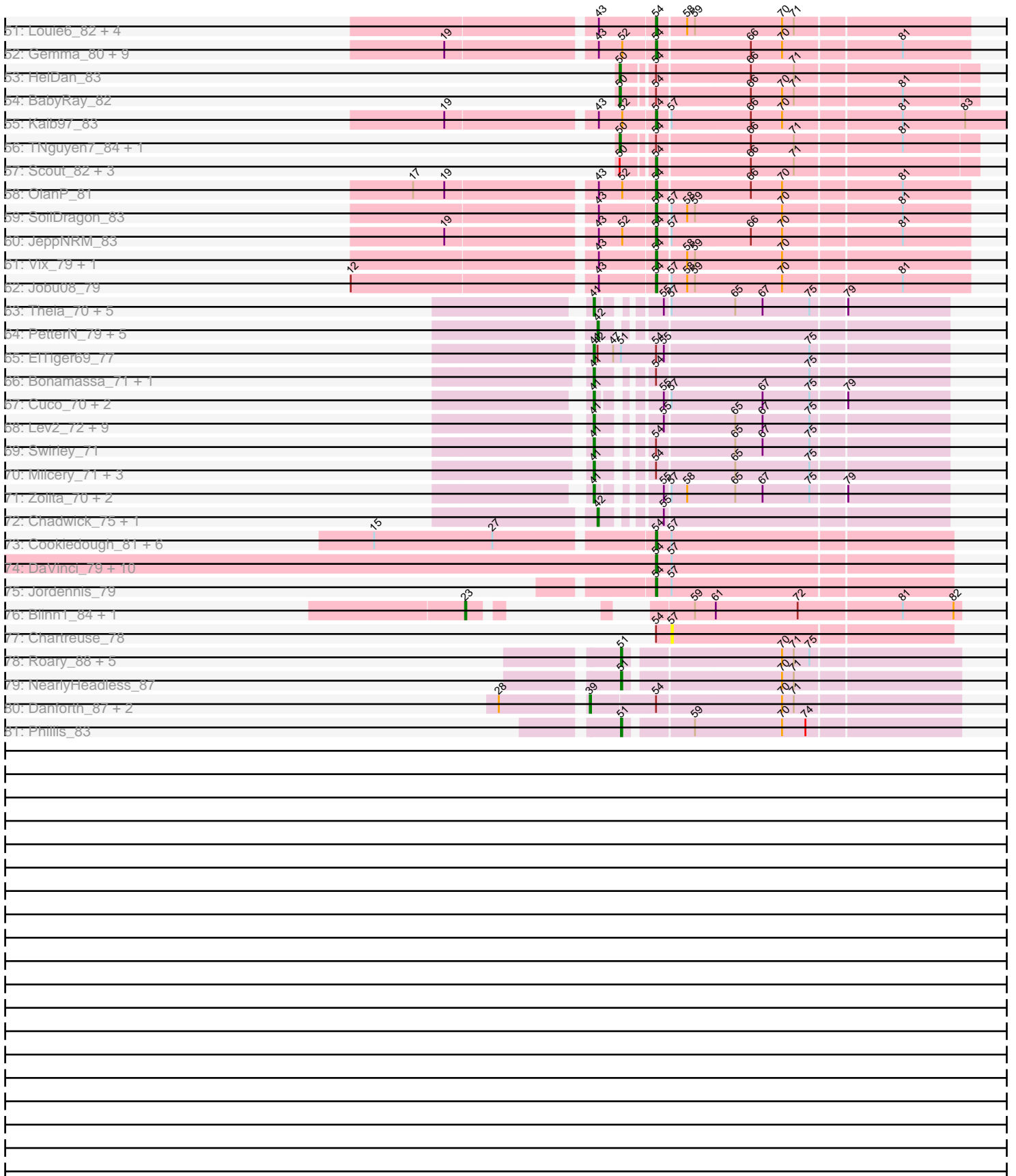


Pham 171166



Pham 171166



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 171166 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171166 has 266 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Chargerpower_77
- Track 2 : Aneem_81, Mabel_80, Lucivia_81, Orange_80, Sham4_76, MaCh_80, Fibonacci_79, Bud_75, Et2Brutus_79, Gilberta_77, Timothy_80, TinyTimmy_78, Snape_80, Joselito_79, Petersenfast_74, Salz_75, Hutc2_76, Insomnia_79, Munch_80, Flaverint_81, Mulciber_78, Jabith_79
- Track 3 : Bachome_78, Ebony_80
- Track 4 : Anon_85
- Track 5 : EagleEye_82
- Track 6 : MyraDee_74
- Track 7 : Loka_74, BobSwaget_73
- Track 8 : Larenn_77
- Track 9 : TarsusIV_79
- Track 10 : Drake55_80, Piro94_78, HarryHoudini_79
- Track 11 : AnnaL29_81
- Track 12 : Flare16_79, Centaur_79, Equemioh13_79, Updawg_80, WideWale_80, Baehexic_78
- Track 13 : Malec_78
- Track 14 : AN3_81
- Track 15 : Fameo_77, Anselm_80, QueenB2_76, Dalmatian_79, Heffalump_76, DudeLittle_77, Retro23_79
- Track 16 : Jerm_81, Agape74_81, Buggy_81, LilTurb_80
- Track 17 : AN9_79, VC3_78, ANI8_79, C3_72
- Track 18 : MissWhite_74
- Track 19 : Power_79, SnapTap_79, FiringLine_79, Georgie2_81, First_0080, 20ES_81, SweetiePie_79, Crucio_79, QueenBeesly_79
- Track 20 : Kerberos_80, DBQu4n_80, StarStuff_80, Pomar16_80, Tomathan_80
- Track 21 : RedRock_79
- Track 22 : Rachaly_76
- Track 23 : NicoleTera_77
- Track 24 : Dignity_81, Leviathan_81, Turbido_80, Whabigail7_79, AbbyPaige_81, Smeagan_82
- Track 25 : VA6_79
- Track 26 : ChipMunk_80, EvilGenius_79
- Track 27 : Deloris_79
- Track 28 : Trixie_80
- Track 29 : CRB1_80
- Track 30 : NaSiaTalie_80

- Track 31 : ArcherNM_74
- Track 32 : Iwokeuplikedis_81
- Track 33 : Loser_83
- Track 34 : LadyBird_83
- Track 35 : EZMoney23_75
- Track 36 : SemperFi_79
- Track 37 : BiancaTri92_76
- Track 38 : XianYue_78
- Track 39 : Miko_74
- Track 40 : Trooper_79
- Track 41 : Changeling_78
- Track 42 : NothingSpecial_73
- Track 43 : BengiVuitton_79
- Track 44 : KingCyrus_78
- Track 45 : JoshKayV_81
- Track 46 : Acolyte_74
- Track 47 : Colin_79
- Track 48 : MiculUcigas_79
- Track 49 : JHC117_78, HashRod_84, LugYA_86, Grum1_83, Snickers_79, Mainiac_82, Grub_81, Aglet_84, Malinsilva_86, Methuselah_76, Beauxregard13_82, Cullens_84, Grif_81, Marie_81, Sabinator_81, MarQuardt_83, EpicPhail_84, JenCasNa_84, Stagni_80, LarryKay_83, Lilith_81, Sabia_81, Farber_83, Wooldri_85, PGHhamlin_85, PotatoSplit_84, Pembroke_83, Phoxy_83, AugsMagnumOpus_86, Spike509_83, Microwolf_79, SoYo_80, MuchMore_86, Ollie_83, MadMarie_81, Hercules11_83, Taurus_84, Watson_82, MoneyMay_83, GingkoMaracino_83, BreSam8_83, Tiffany_82, Colbster_79, Penny1_83, P28Green_83, DaHudson_82, Fernando_84, GtownJaz_83, Rummer_82, Dieselweasel_84, Phoebe_84, LBerry_84
- Track 50 : Giroux_81, Pistachio_83, SaturnRing_84, BlueBird_85, Bugatti_84
- Track 51 : Louie6_82, Bxz2_78, KADY_80, BuzzBuzz_77, Daishi_82
- Track 52 : Gemma_80, Groupthink_83, PhishRPhriends_79, Kalnoky_83, Reba_78, Pawn_81, Manu_82, Marius_83, HaveUMetTed_83, Heliosoles_80
- Track 53 : HelDan_83
- Track 54 : BabyRay_82
- Track 55 : Kalb97_83
- Track 56 : TNguyen7_84, Idleandcovert_83
- Track 57 : Scout_82, Puppy_84, Heathen_82, Fred313_80
- Track 58 : OlanP_81
- Track 59 : SoilDragon_83
- Track 60 : JeppNRM_83
- Track 61 : Vix_79, Anubis_87
- Track 62 : Jobu08_79
- Track 63 : Theia_70, Bluefalcon_67, Dublin_71, Archetta_69, Micasa_69, MarysWell_71
- Track 64 : PetterN_79, Benedict_75, Naca_74, Airmid_74, Jabiru_73, Scorpia_74
- Track 65 : EITiger69_77
- Track 66 : Bonamassa_71, HuhtaEnerson15_69
- Track 67 : Cuco_70, Midas2_68, Coog_68
- Track 68 : Lev2_72, ForGetIt_72, Tiger_70, PickleBack_72, AgentM_71, Phlorence_70, Jovo_71, Conspiracy_72, Discoknowium_69, Aragog_71
- Track 69 : Swirley_71
- Track 70 : Milcery_71, Tarynearal_70, LittleCherry_70, George_66
- Track 71 : Zolita_70, SydNat_71, Ghouboy_71
- Track 72 : Chadwick_75, UnionJack_75

- Track 73 : Cookiedough_81, Neeharika16_80, Isiphiwo_78, Hoot_76, Newrala_80, Pmask_80, SuperAwesome_81
- Track 74 : DaVinci_79, McFly_81, Candra_79, EricB_80, SuperCallie99_78, SmellyB_81, BABullseye_74, VohminGhazi_81, Kazan_82, Kipper29_81, Dorothea_78
- Track 75 : Jordennis_79
- Track 76 : Blinn1_84, Priamo_82
- Track 77 : Chartreuse_78
- Track 78 : Roary_88, Groundhog_84, Astro_86, Expelliarmus_83, Dixon_85, Smeadley_86
- Track 79 : NearlyHeadless_87
- Track 80 : Danforth_87, Saintus_82, Stephig9_85
- Track 81 : Phillis_83

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

The start number called the most often in the published annotations is 54, it was called in 95 of the 250 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aglet_84, Anubis_87, AugsMagnumOpus_86, BABullseye_74, Beauxregard13_82, BlueBird_85, BreSam8_83, Bugatti_84, BuzzBuzz_77, Bxz2_78, Candra_79, Colbster_79, Cookiedough_81, Cullens_84, DaHudson_82, DaVinci_79, Daishi_82, Dieselweasel_84, Dorothea_78, EpicPhail_84, EricB_80, Farber_83, Fernando_84, Fred313_80, Gemma_80, GingkoMaracino_83, Giroux_81, Grif_81, Groupthink_83, Grub_81, Grum1_83, GtownJaz_83, HashRod_84, HaveUMetTed_83, Heathen_82, Heliosoles_80, Hercules11_83, Hoot_76, Isiphiwo_78, JHC117_78, JenCasNa_84, JeppNRM_83, Jobu08_79, Jordennis_79, KADY_80, Kalb97_83, Kalnoky_83, Kazan_82, Kipper29_81, LBerry_84, LarryKay_83, Lilith_81, Louie6_82, LugYA_86, MadMarie_81, Mainiac_82, Malinsilva_86, Manu_82, MarQuardt_83, Marie_81, Marius_83, McFly_81, Methuselah_76, Microwolf_79, MoneyMay_83, MuchMore_86, Neeharika16_80, Newrala_80, OlanP_81, Ollie_83, P28Green_83, PGHhamlin_85, Pawn_81, Pembroke_83, Penny1_83, PhishRPhriends_79, Phoebe_84, Phoxy_83, Pistachio_83, Pmask_80, PotatoSplit_84, Puppy_84, Reba_78, Rummer_82, Sabia_81, Sabinator_81, SaturnRing_84, Scout_82, SmellyB_81, Snickers_79, SoYo_80, SoilDragon_83, Spike509_83, Stagni_80, SuperAwesome_81, SuperCallie99_78, Taurus_84, Tiffany_82, Vix_79, VohminGhazi_81, Watson_82, Wooldri_85,

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

- Anon_85, BabyRay_82, Bonamassa_71, Chartreuse_78, ChipMunk_80, Danforth_87, ElTiger69_77, EvilGenius_79, George_66, HelDan_83, HuhtaEnerson15_69, Idleandcovert_83, LittleCherry_70, Milcery_71, Saintus_82, Stephig9_85, Swirley_71, TNguyen7_84, Tarynearal_70,

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

- 20ES_81, AN3_81, AN9_79, ANI8_79, AbbyPaige_81, Acolyte_74, Agape74_81, AgentM_71, Airmid_74, Aneem_81, AnnaL29_81, Anselm_80, Aragog_71, ArcherNM_74, Archetta_69, Astro_86, Bachome_78, Baehexic_78, Benedict_75, BengiVuitton_79, BiancaTri92_76, Blinn1_84, Bluefalcon_67, BobSwaget_73,

Bud_75, Buggy_81, C3_72, CRB1_80, Centaur_79, Chadwick_75, Changeling_78, Chargerpower_77, Colin_79, Conspiracy_72, Coog_68, Crucio_79, Cuco_70, DBQu4n_80, Dalmatian_79, Deloris_79, Dignity_81, Discoknowium_69, Dixon_85, Drake55_80, Dublin_71, DudeLittle_77, EZMoney23_75, EagleEye_82, Ebony_80, Equemioh13_79, Et2Brutus_79, Expelliarmus_83, Fameo_77, Fibonacci_79, FiringLine_79, First_0080, Flare16_79, Flaverint_81, ForGetIt_72, Georgie2_81, Ghoulboy_71, Gilberta_77, Groundhog_84, HarryHoudini_79, Heffalump_76, Hutc2_76, Insomnia_79, Iwokeuplieddis_81, Jabiru_73, Jabith_79, Jerm_81, Joselito_79, JoshKayV_81, Jovo_71, Kerberos_80, KingCyrus_78, LadyBird_83, Larenn_77, Lev2_72, Leviathan_81, LilTurb_80, Lokk_74, Loser_83, Lucivia_81, MaCh_80, Mabel_80, Malec_78, MarysWell_71, Micasa_69, MiculUcigas_79, Midas2_68, Miko_74, MissWhite_74, Mulciber_78, Munch_80, MyraDee_74, NaSiaTalie_80, Naca_74, NearlyHeadless_87, NicoleTera_77, NothingSpecial_73, Orange_80, Petersenfast_74, PetterN_79, Phillis_83, Phlorence_70, PickleBack_72, Piro94_78, Pomar16_80, Power_79, Priamo_82, QueenB2_76, QueenBeesly_79, Rachaly_76, RedRock_79, Retro23_79, Roary_88, Salz_75, Scorpia_74, SemperFi_79, Sham4_76, Smeadley_86, Smeagan_82, SnapTap_79, Snape_80, StarStuff_80, SweetiePie_79, SydNat_71, TarsusIV_79, Theia_70, Tiger_70, Timothy_80, TinyTimmy_78, Tomathan_80, Trixie_80, Trooper_79, Turbido_80, UnionJack_75, Updawg_80, VA6_79, VC3_78, Whabigail7_79, WideWale_80, XianYue_78, Zolita_70,

Summary by start number:

Start 18:

- Found in 1 of 266 (0.4%) of genes in pham
- Manual Annotations of this start: 1 of 250
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EagleEye_82 (A16),

Start 23:

- Found in 7 of 266 (2.6%) of genes in pham
- Manual Annotations of this start: 4 of 250
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Blinn1_84 (A6), CRB1_80 (A2), Colin_79 (A2), Loser_83 (A2), Priamo_82 (A6), Trixie_80 (A2),

Start 26:

- Found in 2 of 266 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 250
- Called 50.0% of time when present
- Phage (with cluster) where this start called: RedRock_79 (A2),

Start 32:

- Found in 3 of 266 (1.1%) of genes in pham
- Manual Annotations of this start: 2 of 250
- Called 66.7% of time when present
- Phage (with cluster) where this start called: BobSwaget_73 (A2), Lokk_74 (A2),

Start 33:

- Found in 61 of 266 (22.9%) of genes in pham
- Manual Annotations of this start: 54 of 250
- Called 93.4% of time when present

- Phage (with cluster) where this start called: 20ES_81 (A2), AN3_81 (A2), AN9_79 (A2), AN18_79 (A2), AbbyPaige_81 (A2), Acolyte_74 (A2), Agape74_81 (A2), ArcherNM_74 (A2), Baehexic_78 (A2), BengiVuitton_79 (A2), BiancaTri92_76 (A2), Buggy_81 (A2), C3_72 (A2), Centaur_79 (A2), Changeling_78 (A2), Crucio_79 (A2), DBQu4n_80 (A2), Dignity_81 (A2), Drake55_80 (A2), EZMoney23_75 (A2), Equemioh13_79 (A2), FiringLine_79 (A2), First_0080 (A2), Flare16_79 (A2), Georgie2_81 (A2), HarryHoudini_79 (A2), Jerm_81 (A2), JoshKayV_81 (A2), Kerberos_80 (A2), KingCyrus_78 (A2), LadyBird_83 (A2), Larenn_77 (A2), Leviathan_81 (A2), LilTurb_80 (A2), Malec_78 (A2), MiculUcigas_79 (A2), Miko_74 (A2), NaSiaTalie_80 (A2), NicoleTera_77 (A2), Piro94_78 (A2), Pomar16_80 (A2), Power_79 (A2), QueenBeesly_79 (A2), Rachaly_76 (A2), SemperFi_79 (A2), Smeagan_82 (A2), SnapTap_79 (A2), StarStuff_80 (A2), SweetiePie_79 (A2), Tomathan_80 (A2), Turbido_80 (A2), Updawg_80 (A2), VA6_79 (A2), VC3_78 (A2), Whabigail7_79 (A2), WideWale_80 (A2), XianYue_78 (A2),

Start 34:

- Found in 8 of 266 (3.0%) of genes in pham
- Manual Annotations of this start: 2 of 250
- Called 25.0% of time when present
- Phage (with cluster) where this start called: AnnaL29_81 (A2), Deloris_79 (A2),

Start 36:

- Found in 2 of 266 (0.8%) of genes in pham
- Manual Annotations of this start: 2 of 250
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chargerpower_77 (A), MyraDee_74 (A18),

Start 39:

- Found in 4 of 266 (1.5%) of genes in pham
- Manual Annotations of this start: 3 of 250
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Danforth_87 (A8), Saintus_82 (A8), Stephig9_85 (A8),

Start 41:

- Found in 31 of 266 (11.7%) of genes in pham
- Manual Annotations of this start: 29 of 250
- Called 96.8% of time when present
- Phage (with cluster) where this start called: AgentM_71 (A5), Aragog_71 (A5), Archetta_69 (A5), Bluefalcon_67 (A5), Bonamassa_71 (A5), Conspiracy_72 (A5), Coog_68 (A5), Cuco_70 (A5), Discoknowium_69 (A5), Dublin_71 (A5), EITiger69_77 (A5), ForGetIt_72 (A5), George_66 (A5), Ghoulyboy_71 (A5), HuhtaEnerson15_69 (A5), Jovo_71 (A5), Lev2_72 (A5), LittleCherry_70 (A5), MarysWell_71 (A5), Micasa_69 (A5), Midas2_68 (A5), Milcery_71 (A5), Phlorence_70 (A5), PickleBack_72 (A5), Swirley_71 (A5), SydNat_71 (A5), Tarynearal_70 (A5), Theia_70 (A5), Tiger_70 (A5), Zolita_70 (A5),

Start 42:

- Found in 10 of 266 (3.8%) of genes in pham
- Manual Annotations of this start: 9 of 250
- Called 90.0% of time when present

- Phage (with cluster) where this start called: Airmid_74 (A5), Benedict_75 (A5), Chadwick_75 (A5), Jabiru_73 (A5), MissWhite_74 (A2), Naca_74 (A5), PetterN_79 (A5), Scorpia_74 (A5), UnionJack_75 (A5),

Start 44:

- Found in 24 of 266 (9.0%) of genes in pham
- Manual Annotations of this start: 22 of 250
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aneem_81 (A11), Bachome_78 (A11), Bud_75 (A11), Ebony_80 (A11), Et2Brutus_79 (A11), Fibonacci_79 (A11), Flaverint_81 (A11), Gilberta_77 (A11), Hutc2_76 (A11), Insomnia_79 (A11), Jabith_79 (A11), Joselito_79 (A11), Lucivia_81 (A11), MaCh_80 (A11), Mabel_80 (A11), Mulciber_78 (A11), Munch_80 (A11), Orange_80 (A11), Petersenfast_74 (A11), Salz_75 (A11), Sham4_76 (A11), Snape_80 (A11), Timothy_80 (A11), TinyTimmy_78 (A11),

Start 45:

- Found in 8 of 266 (3.0%) of genes in pham
- Manual Annotations of this start: 6 of 250
- Called 75.0% of time when present
- Phage (with cluster) where this start called: ChipMunk_80 (A2), EvilGenius_79 (A2), Iwokeuplikedis_81 (A2), NothingSpecial_73 (A2), TarsusIV_79 (A2), Trooper_79 (A2),

Start 46:

- Found in 7 of 266 (2.6%) of genes in pham
- Manual Annotations of this start: 7 of 250
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anselm_80 (A2), Dalmatian_79 (A2), DudeLittle_77 (A2), Fameo_77 (A2), Heffalump_76 (A2), QueenB2_76 (A2), Retro23_79 (A2),

Start 49:

- Found in 22 of 266 (8.3%) of genes in pham
- Manual Annotations of this start: 1 of 250
- Called 4.5% of time when present
- Phage (with cluster) where this start called: Anon_85 (A15),

Start 50:

- Found in 13 of 266 (4.9%) of genes in pham
- Manual Annotations of this start: 4 of 250
- Called 30.8% of time when present
- Phage (with cluster) where this start called: BabyRay_82 (A3), HelDan_83 (A3), Idleandcovert_83 (A3), TNguyen7_84 (A3),

Start 51:

- Found in 9 of 266 (3.4%) of genes in pham
- Manual Annotations of this start: 8 of 250
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Astro_86 (A8), Dixon_85 (A8), Expelliarmus_83 (A8), Groundhog_84 (A8), NearlyHeadless_87 (A8), Phillis_83 (A8), Roary_88 (A8), Smeadley_86 (A8),

Start 54:

- Found in 121 of 266 (45.5%) of genes in pham
- Manual Annotations of this start: 95 of 250
- Called 84.3% of time when present
- Phage (with cluster) where this start called: Aglet_84 (A3), Anubis_87 (A3), AugsMagnumOpus_86 (A3), BABullseye_74 (A6), Beauxregard13_82 (A3), BlueBird_85 (A3), BreSam8_83 (A3), Bugatti_84 (A3), BuzzBuzz_77 (A3), Bxz2_78 (A3), Candra_79 (A6), Colbster_79 (A3), Cookiedough_81 (A6), Cullens_84 (A3), DaHudson_82 (A3), DaVinci_79 (A6), Daishi_82 (A3), Dieselweasel_84 (A3), Dorothea_78 (A6), EpicPhail_84 (A3), EricB_80 (A6), Farber_83 (A3), Fernando_84 (A3), Fred313_80 (A3), Gemma_80 (A3), GingkoMaracino_83 (A3), Giroux_81 (A3), Grif_81 (A3), Groupthink_83 (A3), Grub_81 (A3), Grum1_83 (A3), GtownJaz_83 (A3), HashRod_84 (A3), HaveUMetTed_83 (A3), Heathen_82 (A3), Heliosoles_80 (A3), Hercules11_83 (A3), Hoot_76 (A6), Isiphiwo_78 (A6), JHC117_78 (A3), JenCasNa_84 (A3), JeppNRM_83 (A3), Jobu08_79 (A3), Jordennis_79 (A6), KADY_80 (A3), Kalb97_83 (A3), Kalnoky_83 (A3), Kazan_82 (A6), Kipper29_81 (A6), LBerry_84 (A3), LarryKay_83 (A3), Lilith_81 (A3), Louie6_82 (A3), LugYA_86 (A3), MadMarie_81 (A3), Mainiac_82 (A3), Malinsilva_86 (A3), Manu_82 (A3), MarQuardt_83 (A3), Marie_81 (A3), Marius_83 (A3), McFly_81 (A6), Methuseloh_76 (A3), Microwolf_79 (A3), MoneyMay_83 (A3), MuchMore_86 (A3), Neeharika16_80 (A6), Newrala_80 (A6), OlanP_81 (A3), Ollie_83 (A3), P28Green_83 (A3), PGHhamlin_85 (A3), Pawn_81 (A3), Pembroke_83 (A3), Penny1_83 (A3), PhishRPhriends_79 (A3), Phoebe_84 (A3), Phoxy_83 (A3), Pistachio_83 (A3), Pmask_80 (A6), PotatoSplit_84 (A3), Puppy_84 (A3), Reba_78 (A3), Rummer_82 (A3), Sabia_81 (A3), Sabinator_81 (A3), SaturnRing_84 (A3), Scout_82 (A3), SmellyB_81 (A6), Snickers_79 (A3), SoYo_80 (A3), SoilDragon_83 (A3), Spike509_83 (A3), Stagni_80 (A3), SuperAwesome_81 (A6), SuperCallie99_78 (A6), Taurus_84 (A3), Tiffany_82 (A3), Vix_79 (A3), VohminGhazi_81 (A6), Watson_82 (A3), Wooldri_85 (A3),

Start 57:

- Found in 88 of 266 (33.1%) of genes in pham
- No Manual Annotations of this start.
- Called 1.1% of time when present
- Phage (with cluster) where this start called: Chartreuse_78 (A6),

Summary by clusters:

There are 10 clusters represented in this pham: A, A15, A16, A11, A18, A3, A2, A5, A6, A8,

Info for manual annotations of cluster A:

- Start number 36 was manually annotated 1 time for cluster A.

Info for manual annotations of cluster A11:

- Start number 44 was manually annotated 22 times for cluster A11.

Info for manual annotations of cluster A15:

- Start number 49 was manually annotated 1 time for cluster A15.

Info for manual annotations of cluster A16:

- Start number 18 was manually annotated 1 time for cluster A16.

Info for manual annotations of cluster A18:

- Start number 36 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A2:

- Start number 23 was manually annotated 2 times for cluster A2.
- Start number 26 was manually annotated 1 time for cluster A2.
- Start number 32 was manually annotated 2 times for cluster A2.
- Start number 33 was manually annotated 54 times for cluster A2.
- Start number 34 was manually annotated 2 times for cluster A2.
- Start number 42 was manually annotated 1 time for cluster A2.
- Start number 45 was manually annotated 6 times for cluster A2.
- Start number 46 was manually annotated 7 times for cluster A2.

Info for manual annotations of cluster A3:

- Start number 50 was manually annotated 4 times for cluster A3.
- Start number 54 was manually annotated 78 times for cluster A3.

Info for manual annotations of cluster A5:

- Start number 41 was manually annotated 29 times for cluster A5.
- Start number 42 was manually annotated 8 times for cluster A5.

Info for manual annotations of cluster A6:

- Start number 23 was manually annotated 2 times for cluster A6.
- Start number 54 was manually annotated 17 times for cluster A6.

Info for manual annotations of cluster A8:

- Start number 39 was manually annotated 3 times for cluster A8.
- Start number 51 was manually annotated 8 times for cluster A8.

Gene Information:

Gene: 20ES_81 Start: 46774, Stop: 46457, Start Num: 33

Candidate Starts for 20ES_81:

(Start: 33 @46774 has 54 MA's), (59, 46663), (67, 46612), (68, 46606), (71, 46588), (80, 46546), (81, 46507),

Gene: AN3_81 Start: 45387, Stop: 45106, Start Num: 33

Candidate Starts for AN3_81:

(Start: 33 @45387 has 54 MA's), (Start: 34 @45381 has 2 MA's), (56, 45333), (59, 45315), (62, 45297), (68, 45258), (71, 45240), (80, 45198), (81, 45159),

Gene: AN9_79 Start: 45517, Stop: 45221, Start Num: 33

Candidate Starts for AN9_79:

(Start: 33 @45517 has 54 MA's), (70, 45385), (81, 45295),

Gene: ANI8_79 Start: 45517, Stop: 45221, Start Num: 33

Candidate Starts for ANI8_79:

(Start: 33 @45517 has 54 MA's), (70, 45385), (81, 45295),

Gene: AbbyPaige_81 Start: 47049, Stop: 46729, Start Num: 33

Candidate Starts for AbbyPaige_81:

(Start: 33 @47049 has 54 MA's), (Start: 49 @46995 has 1 MA's), (53, 46974), (56, 46956), (66, 46896), (67, 46887), (68, 46881), (71, 46863), (81, 46782),

Gene: Acolyte_74 Start: 46022, Stop: 45753, Start Num: 33

Candidate Starts for Acolyte_74:

(Start: 33 @46022 has 54 MA's), (35, 46016), (71, 45884), (81, 45803),

Gene: Agape74_81 Start: 47043, Stop: 46723, Start Num: 33

Candidate Starts for Agape74_81:

(Start: 33 @47043 has 54 MA's), (Start: 49 @46989 has 1 MA's), (53, 46968), (56, 46950), (66, 46890), (67, 46881), (68, 46875), (71, 46857), (81, 46776),

Gene: AgentM_71 Start: 44359, Stop: 44114, Start Num: 41

Candidate Starts for AgentM_71:

(Start: 41 @44359 has 29 MA's), (55, 44323), (65, 44272), (67, 44251), (75, 44215),

Gene: Aglet_84 Start: 46272, Stop: 46042, Start Num: 54

Candidate Starts for Aglet_84:

(43, 46314), (Start: 54 @46272 has 95 MA's), (57, 46263), (58, 46251), (59, 46245), (70, 46179),

Gene: Airmid_74 Start: 45167, Stop: 44925, Start Num: 42

Candidate Starts for Airmid_74:

(Start: 42 @45167 has 9 MA's),

Gene: Aneem_81 Start: 45984, Stop: 45709, Start Num: 44

Candidate Starts for Aneem_81:

(9, 46224), (13, 46161), (Start: 44 @45984 has 22 MA's), (59, 45915), (63, 45894), (66, 45873), (70, 45849), (72, 45837), (81, 45759),

Gene: AnnaL29_81 Start: 47245, Stop: 46979, Start Num: 34

Candidate Starts for AnnaL29_81:

(Start: 33 @47251 has 54 MA's), (Start: 34 @47245 has 2 MA's), (56, 47206), (59, 47188), (67, 47137), (68, 47131), (71, 47113), (80, 47071), (81, 47032),

Gene: Anon_85 Start: 46676, Stop: 46413, Start Num: 49

Candidate Starts for Anon_85:

(13, 46847), (24, 46775), (Start: 49 @46676 has 1 MA's), (Start: 54 @46646 has 95 MA's), (64, 46598), (66, 46580), (72, 46544), (76, 46529), (78, 46514), (81, 46463),

Gene: Anselm_80 Start: 46936, Stop: 46634, Start Num: 46

Candidate Starts for Anselm_80:

(Start: 46 @46936 has 7 MA's), (65, 46846), (81, 46723),

Gene: Anubis_87 Start: 46158, Stop: 45928, Start Num: 54

Candidate Starts for Anubis_87:

(43, 46200), (Start: 54 @46158 has 95 MA's), (58, 46137), (59, 46131), (70, 46065),

Gene: Aragog_71 Start: 44377, Stop: 44132, Start Num: 41

Candidate Starts for Aragog_71:

(Start: 41 @44377 has 29 MA's), (55, 44341), (65, 44290), (67, 44269), (75, 44233),

Gene: ArcherNM_74 Start: 46349, Stop: 46071, Start Num: 33

Candidate Starts for ArcherNM_74:

(11, 46499), (30, 46361), (Start: 32 @46352 has 2 MA's), (Start: 33 @46349 has 54 MA's), (Start: 34 @46343 has 2 MA's), (Start: 45 @46322 has 6 MA's), (59, 46286), (70, 46220), (77, 46181), (81, 46130), (84, 46082),

Gene: Archetta_69 Start: 44318, Stop: 44076, Start Num: 41

Candidate Starts for Archetta_69:

(Start: 41 @44318 has 29 MA's), (55, 44285), (57, 44282), (65, 44234), (67, 44213), (75, 44177), (79, 44153),

Gene: Astro_86 Start: 46880, Stop: 46638, Start Num: 51

Candidate Starts for Astro_86:

(Start: 51 @46880 has 8 MA's), (70, 46769), (71, 46760), (75, 46748),

Gene: AugsMagnumOpus_86 Start: 46260, Stop: 46030, Start Num: 54

Candidate Starts for AugsMagnumOpus_86:

(43, 46302), (Start: 54 @46260 has 95 MA's), (57, 46251), (58, 46239), (59, 46233), (70, 46167),

Gene: BABullseye_74 Start: 43477, Stop: 43256, Start Num: 54

Candidate Starts for BABullseye_74:

(Start: 54 @43477 has 95 MA's), (57, 43465),

Gene: BabyRay_82 Start: 46614, Stop: 46357, Start Num: 50

Candidate Starts for BabyRay_82:

(Start: 50 @46614 has 4 MA's), (Start: 54 @46593 has 95 MA's), (66, 46524), (70, 46500), (71, 46491), (81, 46413),

Gene: Bachome_78 Start: 44864, Stop: 44589, Start Num: 44

Candidate Starts for Bachome_78:

(13, 45041), (Start: 44 @44864 has 22 MA's), (59, 44795), (63, 44774), (66, 44753), (70, 44729), (72, 44717), (81, 44639),

Gene: Baehexic_78 Start: 46443, Stop: 46123, Start Num: 33

Candidate Starts for Baehexic_78:

(Start: 33 @46443 has 54 MA's), (Start: 49 @46389 has 1 MA's), (59, 46332), (67, 46281), (68, 46275), (71, 46257), (80, 46215), (81, 46176),

Gene: Beauxregard13_82 Start: 46275, Stop: 46045, Start Num: 54

Candidate Starts for Beauxregard13_82:

(43, 46317), (Start: 54 @46275 has 95 MA's), (57, 46266), (58, 46254), (59, 46248), (70, 46182),

Gene: Benedict_75 Start: 44899, Stop: 44657, Start Num: 42

Candidate Starts for Benedict_75:

(Start: 42 @44899 has 9 MA's),

Gene: BengiVuitton_79 Start: 46581, Stop: 46300, Start Num: 33

Candidate Starts for BengiVuitton_79:

(Start: 33 @46581 has 54 MA's), (Start: 34 @46575 has 2 MA's), (56, 46527), (59, 46509), (68, 46452), (71, 46434), (80, 46392), (81, 46353),

Gene: BiancaTri92_76 Start: 46264, Stop: 45950, Start Num: 33

Candidate Starts for BiancaTri92_76:

(Start: 33 @46264 has 54 MA's), (Start: 49 @46216 has 1 MA's), (59, 46159), (61, 46144), (70, 46093), (71, 46084), (72, 46081), (79, 46045), (81, 46003),

Gene: Blinn1_84 Start: 45891, Stop: 45631, Start Num: 23
Candidate Starts for Blinn1_84:
(Start: 23 @45891 has 4 MA's), (59, 45831), (61, 45816), (72, 45753), (81, 45675), (82, 45636),

Gene: BlueBird_85 Start: 47028, Stop: 46792, Start Num: 54
Candidate Starts for BlueBird_85:
(Start: 50 @47049 has 4 MA's), (Start: 54 @47028 has 95 MA's), (66, 46959), (71, 46926), (81, 46848),

Gene: Bluefalcon_67 Start: 44317, Stop: 44075, Start Num: 41
Candidate Starts for Bluefalcon_67:
(Start: 41 @44317 has 29 MA's), (55, 44284), (57, 44281), (65, 44233), (67, 44212), (75, 44176), (79, 44152),

Gene: BobSwaget_73 Start: 44446, Stop: 44162, Start Num: 32
Candidate Starts for BobSwaget_73:
(7, 44641), (11, 44593), (30, 44455), (Start: 32 @44446 has 2 MA's), (Start: 33 @44443 has 54 MA's), (59, 44377), (73, 44296), (77, 44272), (81, 44221), (84, 44173),

Gene: Bonamassa_71 Start: 44547, Stop: 44302, Start Num: 41
Candidate Starts for Bonamassa_71:
(Start: 41 @44547 has 29 MA's), (Start: 54 @44517 has 95 MA's), (75, 44403),

Gene: BreSam8_83 Start: 46265, Stop: 46035, Start Num: 54
Candidate Starts for BreSam8_83:
(43, 46307), (Start: 54 @46265 has 95 MA's), (57, 46256), (58, 46244), (59, 46238), (70, 46172),

Gene: Bud_75 Start: 44421, Stop: 44146, Start Num: 44
Candidate Starts for Bud_75:
(9, 44661), (13, 44598), (Start: 44 @44421 has 22 MA's), (59, 44352), (63, 44331), (66, 44310), (70, 44286), (72, 44274), (81, 44196),

Gene: Bugatti_84 Start: 47028, Stop: 46792, Start Num: 54
Candidate Starts for Bugatti_84:
(Start: 50 @47049 has 4 MA's), (Start: 54 @47028 has 95 MA's), (66, 46959), (71, 46926), (81, 46848),

Gene: Buggy_81 Start: 47094, Stop: 46774, Start Num: 33
Candidate Starts for Buggy_81:
(Start: 33 @47094 has 54 MA's), (Start: 49 @47040 has 1 MA's), (53, 47019), (56, 47001), (66, 46941), (67, 46932), (68, 46926), (71, 46908), (81, 46827),

Gene: BuzzBuzz_77 Start: 46300, Stop: 46070, Start Num: 54
Candidate Starts for BuzzBuzz_77:
(43, 46342), (Start: 54 @46300 has 95 MA's), (58, 46279), (59, 46273), (70, 46207), (71, 46198),

Gene: Bxz2_78 Start: 46307, Stop: 46077, Start Num: 54
Candidate Starts for Bxz2_78:
(43, 46349), (Start: 54 @46307 has 95 MA's), (58, 46286), (59, 46280), (70, 46214), (71, 46205),

Gene: C3_72 Start: 45517, Stop: 45221, Start Num: 33
Candidate Starts for C3_72:

(Start: 33 @45517 has 54 MA's), (70, 45385), (81, 45295),

Gene: CRB1_80 Start: 47036, Stop: 46719, Start Num: 23

Candidate Starts for CRB1_80:

(Start: 23 @47036 has 4 MA's), (59, 46925), (61, 46910), (69, 46862), (70, 46859), (72, 46847), (81, 46769),

Gene: Candra_79 Start: 45172, Stop: 44951, Start Num: 54

Candidate Starts for Candra_79:

(Start: 54 @45172 has 95 MA's), (57, 45160),

Gene: Centaur_79 Start: 46321, Stop: 46001, Start Num: 33

Candidate Starts for Centaur_79:

(Start: 33 @46321 has 54 MA's), (Start: 49 @46267 has 1 MA's), (59, 46210), (67, 46159), (68, 46153), (71, 46135), (80, 46093), (81, 46054),

Gene: Chadwick_75 Start: 44643, Stop: 44401, Start Num: 42

Candidate Starts for Chadwick_75:

(Start: 42 @44643 has 9 MA's), (55, 44610),

Gene: Changeling_78 Start: 46920, Stop: 46642, Start Num: 33

Candidate Starts for Changeling_78:

(Start: 33 @46920 has 54 MA's), (Start: 34 @46914 has 2 MA's), (59, 46857), (70, 46791), (77, 46752), (81, 46701), (84, 46653),

Gene: Chargerpower_77 Start: 44887, Stop: 44654, Start Num: 36

Candidate Starts for Chargerpower_77:

(22, 44971), (Start: 36 @44887 has 2 MA's), (59, 44854), (71, 44782), (81, 44704),

Gene: Chartreuse_78 Start: 44471, Stop: 44262, Start Num: 57

Candidate Starts for Chartreuse_78:

(Start: 54 @44483 has 95 MA's), (57, 44471),

Gene: ChipMunk_80 Start: 47961, Stop: 47692, Start Num: 45

Candidate Starts for ChipMunk_80:

(Start: 45 @47961 has 6 MA's), (48, 47955), (Start: 54 @47925 has 95 MA's), (56, 47916), (59, 47898), (67, 47847), (68, 47841), (71, 47823), (80, 47781), (81, 47742),

Gene: Colbster_79 Start: 46275, Stop: 46045, Start Num: 54

Candidate Starts for Colbster_79:

(43, 46317), (Start: 54 @46275 has 95 MA's), (57, 46266), (58, 46254), (59, 46248), (70, 46182),

Gene: Colin_79 Start: 47629, Stop: 47354, Start Num: 23

Candidate Starts for Colin_79:

(Start: 23 @47629 has 4 MA's), (59, 47563), (61, 47548), (72, 47485), (81, 47407),

Gene: Conspiracy_72 Start: 44599, Stop: 44354, Start Num: 41

Candidate Starts for Conspiracy_72:

(Start: 41 @44599 has 29 MA's), (55, 44563), (65, 44512), (67, 44491), (75, 44455),

Gene: Coog_68 Start: 44365, Stop: 44123, Start Num: 41

Candidate Starts for Coog_68:

(Start: 41 @44365 has 29 MA's), (55, 44332), (57, 44329), (67, 44260), (75, 44224), (79, 44200),

Gene: Cookiedough_81 Start: 45790, Stop: 45569, Start Num: 54

Candidate Starts for Cookiedough_81:

(15, 45994), (27, 45904), (Start: 54 @45790 has 95 MA's), (57, 45778),

Gene: Crucio_79 Start: 46848, Stop: 46531, Start Num: 33

Candidate Starts for Crucio_79:

(Start: 33 @46848 has 54 MA's), (59, 46737), (67, 46686), (68, 46680), (71, 46662), (80, 46620), (81, 46581),

Gene: Cuco_70 Start: 44225, Stop: 43983, Start Num: 41

Candidate Starts for Cuco_70:

(Start: 41 @44225 has 29 MA's), (55, 44192), (57, 44189), (67, 44120), (75, 44084), (79, 44060),

Gene: Cullens_84 Start: 46274, Stop: 46044, Start Num: 54

Candidate Starts for Cullens_84:

(43, 46316), (Start: 54 @46274 has 95 MA's), (57, 46265), (58, 46253), (59, 46247), (70, 46181),

Gene: DBQu4n_80 Start: 46541, Stop: 46269, Start Num: 33

Candidate Starts for DBQu4n_80:

(Start: 33 @46541 has 54 MA's), (59, 46478), (70, 46412), (81, 46322),

Gene: DaHudson_82 Start: 46264, Stop: 46034, Start Num: 54

Candidate Starts for DaHudson_82:

(43, 46306), (Start: 54 @46264 has 95 MA's), (57, 46255), (58, 46243), (59, 46237), (70, 46171),

Gene: DaVinci_79 Start: 44537, Stop: 44316, Start Num: 54

Candidate Starts for DaVinci_79:

(Start: 54 @44537 has 95 MA's), (57, 44525),

Gene: Daishi_82 Start: 45141, Stop: 44911, Start Num: 54

Candidate Starts for Daishi_82:

(43, 45183), (Start: 54 @45141 has 95 MA's), (58, 45120), (59, 45114), (70, 45048), (71, 45039),

Gene: Dalmatian_79 Start: 46667, Stop: 46365, Start Num: 46

Candidate Starts for Dalmatian_79:

(Start: 46 @46667 has 7 MA's), (65, 46577), (81, 46454),

Gene: Danforth_87 Start: 46987, Stop: 46715, Start Num: 39

Candidate Starts for Danforth_87:

(28, 47047), (Start: 39 @46987 has 3 MA's), (Start: 54 @46939 has 95 MA's), (70, 46846), (71, 46837),

Gene: Deloris_79 Start: 46271, Stop: 45996, Start Num: 34

Candidate Starts for Deloris_79:

(Start: 33 @46277 has 54 MA's), (Start: 34 @46271 has 2 MA's), (56, 46223), (59, 46205), (68, 46148), (71, 46130), (80, 46088), (81, 46049),

Gene: Dieselweasel_84 Start: 46273, Stop: 46043, Start Num: 54

Candidate Starts for Dieselweasel_84:

(43, 46315), (Start: 54 @46273 has 95 MA's), (57, 46264), (58, 46252), (59, 46246), (70, 46180),

Gene: Dignity_81 Start: 47132, Stop: 46812, Start Num: 33

Candidate Starts for Dignity_81:

(Start: 33 @47132 has 54 MA's), (Start: 49 @47078 has 1 MA's), (53, 47057), (56, 47039), (66, 46979), (67, 46970), (68, 46964), (71, 46946), (81, 46865),

Gene: Discoknowium_69 Start: 44116, Stop: 43871, Start Num: 41

Candidate Starts for Discoknowium_69:

(Start: 41 @44116 has 29 MA's), (55, 44080), (65, 44029), (67, 44008), (75, 43972),

Gene: Dixon_85 Start: 46439, Stop: 46197, Start Num: 51

Candidate Starts for Dixon_85:

(Start: 51 @46439 has 8 MA's), (70, 46328), (71, 46319), (75, 46307),

Gene: Dorothea_78 Start: 45783, Stop: 45562, Start Num: 54

Candidate Starts for Dorothea_78:

(Start: 54 @45783 has 95 MA's), (57, 45771),

Gene: Drake55_80 Start: 46578, Stop: 46258, Start Num: 33

Candidate Starts for Drake55_80:

(Start: 33 @46578 has 54 MA's), (56, 46485), (59, 46467), (68, 46410), (71, 46392), (81, 46311),

Gene: Dublin_71 Start: 44497, Stop: 44255, Start Num: 41

Candidate Starts for Dublin_71:

(Start: 41 @44497 has 29 MA's), (55, 44464), (57, 44461), (65, 44413), (67, 44392), (75, 44356), (79, 44332),

Gene: DudeLittle_77 Start: 46433, Stop: 46131, Start Num: 46

Candidate Starts for DudeLittle_77:

(Start: 46 @46433 has 7 MA's), (65, 46343), (81, 46220),

Gene: EZMoney23_75 Start: 46037, Stop: 45765, Start Num: 33

Candidate Starts for EZMoney23_75:

(5, 46337), (Start: 33 @46037 has 54 MA's), (35, 46031), (59, 45974), (70, 45908), (81, 45818),

Gene: EagleEye_82 Start: 46572, Stop: 46357, Start Num: 18

Candidate Starts for EagleEye_82:

(8, 46689), (10, 46659), (16, 46584), (Start: 18 @46572 has 1 MA's), (25, 46542), (29, 46512), (31, 46503), (38, 46464), (60, 46389),

Gene: Ebony_80 Start: 45555, Stop: 45280, Start Num: 44

Candidate Starts for Ebony_80:

(13, 45732), (Start: 44 @45555 has 22 MA's), (59, 45486), (63, 45465), (66, 45444), (70, 45420), (72, 45408), (81, 45330),

Gene: EITiger69_77 Start: 45591, Stop: 45328, Start Num: 41

Candidate Starts for EITiger69_77:

(Start: 41 @45591 has 29 MA's), (Start: 42 @45588 has 9 MA's), (47, 45576), (Start: 51 @45570 has 8 MA's), (Start: 54 @45543 has 95 MA's), (55, 45537), (75, 45429),

Gene: EpicPhail_84 Start: 46275, Stop: 46045, Start Num: 54

Candidate Starts for EpicPhail_84:

(43, 46317), (Start: 54 @46275 has 95 MA's), (57, 46266), (58, 46254), (59, 46248), (70, 46182),

Gene: Equemioh13_79 Start: 46550, Stop: 46230, Start Num: 33

Candidate Starts for Equemioh13_79:

(Start: 33 @46550 has 54 MA's), (Start: 49 @46496 has 1 MA's), (59, 46439), (67, 46388), (68, 46382), (71, 46364), (80, 46322), (81, 46283),

Gene: EricB_80 Start: 45129, Stop: 44908, Start Num: 54

Candidate Starts for EricB_80:

(Start: 54 @45129 has 95 MA's), (57, 45117),

Gene: Et2Brutus_79 Start: 45518, Stop: 45243, Start Num: 44

Candidate Starts for Et2Brutus_79:

(9, 45758), (13, 45695), (Start: 44 @45518 has 22 MA's), (59, 45449), (63, 45428), (66, 45407), (70, 45383), (72, 45371), (81, 45293),

Gene: EvilGenius_79 Start: 47962, Stop: 47693, Start Num: 45

Candidate Starts for EvilGenius_79:

(Start: 45 @47962 has 6 MA's), (48, 47956), (Start: 54 @47926 has 95 MA's), (56, 47917), (59, 47899), (67, 47848), (68, 47842), (71, 47824), (80, 47782), (81, 47743),

Gene: Expelliarmus_83 Start: 46653, Stop: 46411, Start Num: 51

Candidate Starts for Expelliarmus_83:

(Start: 51 @46653 has 8 MA's), (70, 46542), (71, 46533), (75, 46521),

Gene: Fameo_77 Start: 46475, Stop: 46173, Start Num: 46

Candidate Starts for Fameo_77:

(Start: 46 @46475 has 7 MA's), (65, 46385), (81, 46262),

Gene: Farber_83 Start: 46261, Stop: 46031, Start Num: 54

Candidate Starts for Farber_83:

(43, 46303), (Start: 54 @46261 has 95 MA's), (57, 46252), (58, 46240), (59, 46234), (70, 46168),

Gene: Fernando_84 Start: 46274, Stop: 46044, Start Num: 54

Candidate Starts for Fernando_84:

(43, 46316), (Start: 54 @46274 has 95 MA's), (57, 46265), (58, 46253), (59, 46247), (70, 46181),

Gene: Fibonacci_79 Start: 45524, Stop: 45249, Start Num: 44

Candidate Starts for Fibonacci_79:

(9, 45764), (13, 45701), (Start: 44 @45524 has 22 MA's), (59, 45455), (63, 45434), (66, 45413), (70, 45389), (72, 45377), (81, 45299),

Gene: FiringLine_79 Start: 46830, Stop: 46513, Start Num: 33

Candidate Starts for FiringLine_79:

(Start: 33 @46830 has 54 MA's), (59, 46719), (67, 46668), (68, 46662), (71, 46644), (80, 46602), (81, 46563),

Gene: First_0080 Start: 46674, Stop: 46357, Start Num: 33

Candidate Starts for First_0080:

(Start: 33 @46674 has 54 MA's), (59, 46563), (67, 46512), (68, 46506), (71, 46488), (80, 46446), (81, 46407),

Gene: Flare16_79 Start: 46365, Stop: 46045, Start Num: 33

Candidate Starts for Flare16_79:

(Start: 33 @46365 has 54 MA's), (Start: 49 @46311 has 1 MA's), (59, 46254), (67, 46203), (68, 46197), (71, 46179), (80, 46137), (81, 46098),

Gene: Flaverint_81 Start: 45982, Stop: 45707, Start Num: 44

Candidate Starts for Flaverint_81:

(9, 46222), (13, 46159), (Start: 44 @45982 has 22 MA's), (59, 45913), (63, 45892), (66, 45871), (70, 45847), (72, 45835), (81, 45757),

Gene: ForGetIt_72 Start: 44624, Stop: 44379, Start Num: 41

Candidate Starts for ForGetIt_72:

(Start: 41 @44624 has 29 MA's), (55, 44588), (65, 44537), (67, 44516), (75, 44480),

Gene: Fred313_80 Start: 46658, Stop: 46422, Start Num: 54

Candidate Starts for Fred313_80:

(Start: 50 @46679 has 4 MA's), (Start: 54 @46658 has 95 MA's), (66, 46589), (71, 46556),

Gene: Gemma_80 Start: 46081, Stop: 45851, Start Num: 54

Candidate Starts for Gemma_80:

(19, 46231), (43, 46123), (52, 46105), (Start: 54 @46081 has 95 MA's), (66, 46012), (70, 45988), (81, 45901),

Gene: George_66 Start: 44285, Stop: 44040, Start Num: 41

Candidate Starts for George_66:

(Start: 41 @44285 has 29 MA's), (Start: 54 @44255 has 95 MA's), (65, 44198), (75, 44141),

Gene: Georgie2_81 Start: 47034, Stop: 46717, Start Num: 33

Candidate Starts for Georgie2_81:

(Start: 33 @47034 has 54 MA's), (59, 46923), (67, 46872), (68, 46866), (71, 46848), (80, 46806), (81, 46767),

Gene: Ghouboy_71 Start: 44592, Stop: 44350, Start Num: 41

Candidate Starts for Ghouboy_71:

(Start: 41 @44592 has 29 MA's), (55, 44559), (57, 44556), (58, 44544), (65, 44508), (67, 44487), (75, 44451), (79, 44427),

Gene: Gilberta_77 Start: 44858, Stop: 44583, Start Num: 44

Candidate Starts for Gilberta_77:

(9, 45098), (13, 45035), (Start: 44 @44858 has 22 MA's), (59, 44789), (63, 44768), (66, 44747), (70, 44723), (72, 44711), (81, 44633),

Gene: GingkoMaracino_83 Start: 46157, Stop: 45927, Start Num: 54

Candidate Starts for GingkoMaracino_83:

(43, 46199), (Start: 54 @46157 has 95 MA's), (57, 46148), (58, 46136), (59, 46130), (70, 46064),

Gene: Giroux_81 Start: 47027, Stop: 46791, Start Num: 54

Candidate Starts for Giroux_81:

(Start: 50 @47048 has 4 MA's), (Start: 54 @47027 has 95 MA's), (66, 46958), (71, 46925), (81, 46847),

Gene: Grif_81 Start: 46348, Stop: 46118, Start Num: 54

Candidate Starts for Grif_81:

(43, 46390), (Start: 54 @46348 has 95 MA's), (57, 46339), (58, 46327), (59, 46321), (70, 46255),

Gene: Groundhog_84 Start: 46709, Stop: 46467, Start Num: 51

Candidate Starts for Groundhog_84:

(Start: 51 @46709 has 8 MA's), (70, 46598), (71, 46589), (75, 46577),

Gene: Groupthink_83 Start: 46082, Stop: 45852, Start Num: 54

Candidate Starts for Groupthink_83:

(19, 46232), (43, 46124), (52, 46106), (Start: 54 @46082 has 95 MA's), (66, 46013), (70, 45989), (81, 45902),

Gene: Grub_81 Start: 46264, Stop: 46034, Start Num: 54

Candidate Starts for Grub_81:

(43, 46306), (Start: 54 @46264 has 95 MA's), (57, 46255), (58, 46243), (59, 46237), (70, 46171),

Gene: Grum1_83 Start: 46274, Stop: 46044, Start Num: 54

Candidate Starts for Grum1_83:

(43, 46316), (Start: 54 @46274 has 95 MA's), (57, 46265), (58, 46253), (59, 46247), (70, 46181),

Gene: GtownJaz_83 Start: 46272, Stop: 46042, Start Num: 54

Candidate Starts for GtownJaz_83:

(43, 46314), (Start: 54 @46272 has 95 MA's), (57, 46263), (58, 46251), (59, 46245), (70, 46179),

Gene: HarryHoudini_79 Start: 46575, Stop: 46255, Start Num: 33

Candidate Starts for HarryHoudini_79:

(Start: 33 @46575 has 54 MA's), (56, 46482), (59, 46464), (68, 46407), (71, 46389), (81, 46308),

Gene: HashRod_84 Start: 46301, Stop: 46071, Start Num: 54

Candidate Starts for HashRod_84:

(43, 46343), (Start: 54 @46301 has 95 MA's), (57, 46292), (58, 46280), (59, 46274), (70, 46208),

Gene: HaveUMetTed_83 Start: 46070, Stop: 45840, Start Num: 54

Candidate Starts for HaveUMetTed_83:

(19, 46220), (43, 46112), (52, 46094), (Start: 54 @46070 has 95 MA's), (66, 46001), (70, 45977), (81, 45890),

Gene: Heathen_82 Start: 46746, Stop: 46510, Start Num: 54

Candidate Starts for Heathen_82:

(Start: 50 @46767 has 4 MA's), (Start: 54 @46746 has 95 MA's), (66, 46677), (71, 46644),

Gene: Heffalump_76 Start: 46943, Stop: 46641, Start Num: 46

Candidate Starts for Heffalump_76:

(Start: 46 @46943 has 7 MA's), (65, 46853), (81, 46730),

Gene: HelDan_83 Start: 46990, Stop: 46733, Start Num: 50

Candidate Starts for HelDan_83:

(Start: 50 @46990 has 4 MA's), (Start: 54 @46969 has 95 MA's), (66, 46900), (71, 46867),

Gene: Heliosoles_80 Start: 46086, Stop: 45856, Start Num: 54

Candidate Starts for Heliosoles_80:

(19, 46236), (43, 46128), (52, 46110), (Start: 54 @46086 has 95 MA's), (66, 46017), (70, 45993), (81, 45906),

Gene: Hercules11_83 Start: 46283, Stop: 46053, Start Num: 54

Candidate Starts for Hercules11_83:

(43, 46325), (Start: 54 @46283 has 95 MA's), (57, 46274), (58, 46262), (59, 46256), (70, 46190),

Gene: Hoot_76 Start: 42987, Stop: 42766, Start Num: 54
Candidate Starts for Hoot_76:
(15, 43191), (27, 43101), (Start: 54 @42987 has 95 MA's), (57, 42975),

Gene: HuhtaEnerson15_69 Start: 44200, Stop: 43955, Start Num: 41
Candidate Starts for HuhtaEnerson15_69:
(Start: 41 @44200 has 29 MA's), (Start: 54 @44170 has 95 MA's), (75, 44056),

Gene: Hutc2_76 Start: 44408, Stop: 44133, Start Num: 44
Candidate Starts for Hutc2_76:
(9, 44648), (13, 44585), (Start: 44 @44408 has 22 MA's), (59, 44339), (63, 44318), (66, 44297), (70, 44273), (72, 44261), (81, 44183),

Gene: Idleandcovert_83 Start: 47049, Stop: 46792, Start Num: 50
Candidate Starts for Idleandcovert_83:
(Start: 50 @47049 has 4 MA's), (Start: 54 @47028 has 95 MA's), (66, 46959), (71, 46926), (81, 46848),

Gene: Insomnia_79 Start: 45699, Stop: 45424, Start Num: 44
Candidate Starts for Insomnia_79:
(9, 45939), (13, 45876), (Start: 44 @45699 has 22 MA's), (59, 45630), (63, 45609), (66, 45588), (70, 45564), (72, 45552), (81, 45474),

Gene: Isiphiwo_78 Start: 45157, Stop: 44936, Start Num: 54
Candidate Starts for Isiphiwo_78:
(15, 45361), (27, 45271), (Start: 54 @45157 has 95 MA's), (57, 45145),

Gene: Iwokeuplikedis_81 Start: 47056, Stop: 46784, Start Num: 45
Candidate Starts for Iwokeuplikedis_81:
(Start: 45 @47056 has 6 MA's), (48, 47050), (59, 46993), (68, 46936), (71, 46918), (80, 46876), (81, 46837),

Gene: JHC117_78 Start: 46269, Stop: 46039, Start Num: 54
Candidate Starts for JHC117_78:
(43, 46311), (Start: 54 @46269 has 95 MA's), (57, 46260), (58, 46248), (59, 46242), (70, 46176),

Gene: Jabiru_73 Start: 44754, Stop: 44512, Start Num: 42
Candidate Starts for Jabiru_73:
(Start: 42 @44754 has 9 MA's),

Gene: Jabith_79 Start: 45716, Stop: 45441, Start Num: 44
Candidate Starts for Jabith_79:
(9, 45956), (13, 45893), (Start: 44 @45716 has 22 MA's), (59, 45647), (63, 45626), (66, 45605), (70, 45581), (72, 45569), (81, 45491),

Gene: JenCasNa_84 Start: 46274, Stop: 46044, Start Num: 54
Candidate Starts for JenCasNa_84:
(43, 46316), (Start: 54 @46274 has 95 MA's), (57, 46265), (58, 46253), (59, 46247), (70, 46181),

Gene: JeppNRM_83 Start: 46084, Stop: 45854, Start Num: 54
Candidate Starts for JeppNRM_83:
(19, 46234), (43, 46126), (52, 46108), (Start: 54 @46084 has 95 MA's), (57, 46075), (66, 46015), (70, 45991), (81, 45904),

Gene: Jerm_81 Start: 47115, Stop: 46795, Start Num: 33

Candidate Starts for Jerm_81:

(Start: 33 @47115 has 54 MA's), (Start: 49 @47061 has 1 MA's), (53, 47040), (56, 47022), (66, 46962), (67, 46953), (68, 46947), (71, 46929), (81, 46848),

Gene: Jobu08_79 Start: 46098, Stop: 45868, Start Num: 54

Candidate Starts for Jobu08_79:

(12, 46320), (43, 46140), (Start: 54 @46098 has 95 MA's), (57, 46089), (58, 46077), (59, 46071), (70, 46005), (81, 45918),

Gene: Jordennis_79 Start: 45369, Stop: 45148, Start Num: 54

Candidate Starts for Jordennis_79:

(Start: 54 @45369 has 95 MA's), (57, 45357),

Gene: Joselito_79 Start: 45736, Stop: 45461, Start Num: 44

Candidate Starts for Joselito_79:

(9, 45976), (13, 45913), (Start: 44 @45736 has 22 MA's), (59, 45667), (63, 45646), (66, 45625), (70, 45601), (72, 45589), (81, 45511),

Gene: JoshKayV_81 Start: 47259, Stop: 46987, Start Num: 33

Candidate Starts for JoshKayV_81:

(Start: 33 @47259 has 54 MA's), (Start: 49 @47253 has 1 MA's), (56, 47214), (66, 47154), (67, 47145), (68, 47139), (71, 47121), (81, 47040),

Gene: Jovo_71 Start: 44880, Stop: 44635, Start Num: 41

Candidate Starts for Jovo_71:

(Start: 41 @44880 has 29 MA's), (55, 44844), (65, 44793), (67, 44772), (75, 44736),

Gene: KADY_80 Start: 46301, Stop: 46071, Start Num: 54

Candidate Starts for KADY_80:

(43, 46343), (Start: 54 @46301 has 95 MA's), (58, 46280), (59, 46274), (70, 46208), (71, 46199),

Gene: Kalb97_83 Start: 45452, Stop: 45192, Start Num: 54

Candidate Starts for Kalb97_83:

(19, 45602), (43, 45494), (52, 45476), (Start: 54 @45452 has 95 MA's), (57, 45443), (66, 45383), (70, 45359), (81, 45272), (83, 45224),

Gene: Kalnoky_83 Start: 46079, Stop: 45849, Start Num: 54

Candidate Starts for Kalnoky_83:

(19, 46229), (43, 46121), (52, 46103), (Start: 54 @46079 has 95 MA's), (66, 46010), (70, 45986), (81, 45899),

Gene: Kazan_82 Start: 45142, Stop: 44921, Start Num: 54

Candidate Starts for Kazan_82:

(Start: 54 @45142 has 95 MA's), (57, 45130),

Gene: Kerberos_80 Start: 46561, Stop: 46289, Start Num: 33

Candidate Starts for Kerberos_80:

(Start: 33 @46561 has 54 MA's), (59, 46498), (70, 46432), (81, 46342),

Gene: KingCyrus_78 Start: 47984, Stop: 47667, Start Num: 33

Candidate Starts for KingCyrus_78:

(Start: 33 @47984 has 54 MA's), (59, 47873), (67, 47822), (68, 47816), (71, 47798), (80, 47756), (81, 47717),

Gene: Kipper29_81 Start: 45155, Stop: 44934, Start Num: 54

Candidate Starts for Kipper29_81:

(Start: 54 @45155 has 95 MA's), (57, 45143),

Gene: LBerry_84 Start: 46275, Stop: 46045, Start Num: 54

Candidate Starts for LBerry_84:

(43, 46317), (Start: 54 @46275 has 95 MA's), (57, 46266), (58, 46254), (59, 46248), (70, 46182),

Gene: LadyBird_83 Start: 47185, Stop: 46904, Start Num: 33

Candidate Starts for LadyBird_83:

(Start: 33 @47185 has 54 MA's), (Start: 34 @47179 has 2 MA's), (56, 47131), (59, 47113), (68, 47056), (71, 47038), (80, 46996), (81, 46957),

Gene: Larenn_77 Start: 46535, Stop: 46206, Start Num: 33

Candidate Starts for Larenn_77:

(Start: 33 @46535 has 54 MA's), (37, 46502), (Start: 49 @46472 has 1 MA's), (56, 46433), (59, 46415), (67, 46364), (68, 46358), (71, 46340), (80, 46298), (81, 46259),

Gene: LarryKay_83 Start: 46305, Stop: 46075, Start Num: 54

Candidate Starts for LarryKay_83:

(43, 46347), (Start: 54 @46305 has 95 MA's), (57, 46296), (58, 46284), (59, 46278), (70, 46212),

Gene: Lev2_72 Start: 44512, Stop: 44267, Start Num: 41

Candidate Starts for Lev2_72:

(Start: 41 @44512 has 29 MA's), (55, 44476), (65, 44425), (67, 44404), (75, 44368),

Gene: Leviathan_81 Start: 47181, Stop: 46861, Start Num: 33

Candidate Starts for Leviathan_81:

(Start: 33 @47181 has 54 MA's), (Start: 49 @47127 has 1 MA's), (53, 47106), (56, 47088), (66, 47028), (67, 47019), (68, 47013), (71, 46995), (81, 46914),

Gene: LilTurb_80 Start: 46995, Stop: 46675, Start Num: 33

Candidate Starts for LilTurb_80:

(Start: 33 @46995 has 54 MA's), (Start: 49 @46941 has 1 MA's), (53, 46920), (56, 46902), (66, 46842), (67, 46833), (68, 46827), (71, 46809), (81, 46728),

Gene: Lilith_81 Start: 46264, Stop: 46034, Start Num: 54

Candidate Starts for Lilith_81:

(43, 46306), (Start: 54 @46264 has 95 MA's), (57, 46255), (58, 46243), (59, 46237), (70, 46171),

Gene: LittleCherry_70 Start: 44070, Stop: 43825, Start Num: 41

Candidate Starts for LittleCherry_70:

(Start: 41 @44070 has 29 MA's), (Start: 54 @44040 has 95 MA's), (65, 43983), (75, 43926),

Gene: Lokk_74 Start: 45070, Stop: 44786, Start Num: 32

Candidate Starts for Lokk_74:

(7, 45265), (11, 45217), (30, 45079), (Start: 32 @45070 has 2 MA's), (Start: 33 @45067 has 54 MA's), (59, 45001), (73, 44920), (77, 44896), (81, 44845), (84, 44797),

Gene: Loser_83 Start: 47509, Stop: 47237, Start Num: 23

Candidate Starts for Loser_83:

(Start: 23 @47509 has 4 MA's), (Start: 26 @47503 has 1 MA's), (59, 47446), (70, 47380), (76, 47353), (81, 47290),

Gene: Louie6_82 Start: 46302, Stop: 46072, Start Num: 54

Candidate Starts for Louie6_82:

(43, 46344), (Start: 54 @46302 has 95 MA's), (58, 46281), (59, 46275), (70, 46209), (71, 46200),

Gene: Lucivia_81 Start: 46015, Stop: 45740, Start Num: 44

Candidate Starts for Lucivia_81:

(9, 46255), (13, 46192), (Start: 44 @46015 has 22 MA's), (59, 45946), (63, 45925), (66, 45904), (70, 45880), (72, 45868), (81, 45790),

Gene: LugYA_86 Start: 46275, Stop: 46045, Start Num: 54

Candidate Starts for LugYA_86:

(43, 46317), (Start: 54 @46275 has 95 MA's), (57, 46266), (58, 46254), (59, 46248), (70, 46182),

Gene: MaCh_80 Start: 45979, Stop: 45704, Start Num: 44

Candidate Starts for MaCh_80:

(9, 46219), (13, 46156), (Start: 44 @45979 has 22 MA's), (59, 45910), (63, 45889), (66, 45868), (70, 45844), (72, 45832), (81, 45754),

Gene: Mabel_80 Start: 45980, Stop: 45705, Start Num: 44

Candidate Starts for Mabel_80:

(9, 46220), (13, 46157), (Start: 44 @45980 has 22 MA's), (59, 45911), (63, 45890), (66, 45869), (70, 45845), (72, 45833), (81, 45755),

Gene: MadMarie_81 Start: 46272, Stop: 46042, Start Num: 54

Candidate Starts for MadMarie_81:

(43, 46314), (Start: 54 @46272 has 95 MA's), (57, 46263), (58, 46251), (59, 46245), (70, 46179),

Gene: Mainiac_82 Start: 46264, Stop: 46034, Start Num: 54

Candidate Starts for Mainiac_82:

(43, 46306), (Start: 54 @46264 has 95 MA's), (57, 46255), (58, 46243), (59, 46237), (70, 46171),

Gene: Malec_78 Start: 47105, Stop: 46776, Start Num: 33

Candidate Starts for Malec_78:

(Start: 33 @47105 has 54 MA's), (37, 47072), (Start: 49 @47042 has 1 MA's), (56, 47003), (59, 46985), (67, 46934), (68, 46928), (71, 46910), (80, 46868), (81, 46829),

Gene: Malinsilva_86 Start: 46263, Stop: 46033, Start Num: 54

Candidate Starts for Malinsilva_86:

(43, 46305), (Start: 54 @46263 has 95 MA's), (57, 46254), (58, 46242), (59, 46236), (70, 46170),

Gene: Manu_82 Start: 46086, Stop: 45856, Start Num: 54

Candidate Starts for Manu_82:

(19, 46236), (43, 46128), (52, 46110), (Start: 54 @46086 has 95 MA's), (66, 46017), (70, 45993), (81, 45906),

Gene: MarQuardt_83 Start: 46273, Stop: 46043, Start Num: 54

Candidate Starts for MarQuardt_83:

(43, 46315), (Start: 54 @46273 has 95 MA's), (57, 46264), (58, 46252), (59, 46246), (70, 46180),

Gene: Marie_81 Start: 46274, Stop: 46044, Start Num: 54
Candidate Starts for Marie_81:
(43, 46316), (Start: 54 @46274 has 95 MA's), (57, 46265), (58, 46253), (59, 46247), (70, 46181),

Gene: Marius_83 Start: 46079, Stop: 45849, Start Num: 54
Candidate Starts for Marius_83:
(19, 46229), (43, 46121), (52, 46103), (Start: 54 @46079 has 95 MA's), (66, 46010), (70, 45986), (81, 45899),

Gene: MarysWell_71 Start: 44740, Stop: 44498, Start Num: 41
Candidate Starts for MarysWell_71:
(Start: 41 @44740 has 29 MA's), (55, 44707), (57, 44704), (65, 44656), (67, 44635), (75, 44599), (79, 44575),

Gene: McFly_81 Start: 45491, Stop: 45270, Start Num: 54
Candidate Starts for McFly_81:
(Start: 54 @45491 has 95 MA's), (57, 45479),

Gene: Methuselah_76 Start: 46295, Stop: 46065, Start Num: 54
Candidate Starts for Methuselah_76:
(43, 46337), (Start: 54 @46295 has 95 MA's), (57, 46286), (58, 46274), (59, 46268), (70, 46202),

Gene: Micasa_69 Start: 44462, Stop: 44220, Start Num: 41
Candidate Starts for Micasa_69:
(Start: 41 @44462 has 29 MA's), (55, 44429), (57, 44426), (65, 44378), (67, 44357), (75, 44321), (79, 44297),

Gene: Microwolf_79 Start: 46287, Stop: 46057, Start Num: 54
Candidate Starts for Microwolf_79:
(43, 46329), (Start: 54 @46287 has 95 MA's), (57, 46278), (58, 46266), (59, 46260), (70, 46194),

Gene: MiculUcigas_79 Start: 46268, Stop: 45948, Start Num: 33
Candidate Starts for MiculUcigas_79:
(Start: 33 @46268 has 54 MA's), (Start: 49 @46214 has 1 MA's), (59, 46157), (67, 46106), (68, 46100), (71, 46082), (80, 46040), (81, 46001),

Gene: Midas2_68 Start: 44365, Stop: 44123, Start Num: 41
Candidate Starts for Midas2_68:
(Start: 41 @44365 has 29 MA's), (55, 44332), (57, 44329), (67, 44260), (75, 44224), (79, 44200),

Gene: Miko_74 Start: 45841, Stop: 45563, Start Num: 33
Candidate Starts for Miko_74:
(6, 46138), (Start: 33 @45841 has 54 MA's), (35, 45835), (59, 45778), (73, 45697), (77, 45673), (81, 45622), (84, 45574),

Gene: Milcery_71 Start: 44253, Stop: 44008, Start Num: 41
Candidate Starts for Milcery_71:
(Start: 41 @44253 has 29 MA's), (Start: 54 @44223 has 95 MA's), (65, 44166), (75, 44109),

Gene: MissWhite_74 Start: 43643, Stop: 43320, Start Num: 42
Candidate Starts for MissWhite_74:
(19, 43754), (21, 43748), (Start: 42 @43643 has 9 MA's), (Start: 45 @43637 has 6 MA's), (59, 43577), (63, 43556), (70, 43511), (83, 43373),

Gene: MoneyMay_83 Start: 46274, Stop: 46044, Start Num: 54
Candidate Starts for MoneyMay_83:
(43, 46316), (Start: 54 @46274 has 95 MA's), (57, 46265), (58, 46253), (59, 46247), (70, 46181),

Gene: MuchMore_86 Start: 46260, Stop: 46030, Start Num: 54
Candidate Starts for MuchMore_86:
(43, 46302), (Start: 54 @46260 has 95 MA's), (57, 46251), (58, 46239), (59, 46233), (70, 46167),

Gene: Mulciber_78 Start: 45521, Stop: 45246, Start Num: 44
Candidate Starts for Mulciber_78:
(9, 45761), (13, 45698), (Start: 44 @45521 has 22 MA's), (59, 45452), (63, 45431), (66, 45410), (70, 45386), (72, 45374), (81, 45296),

Gene: Munch_80 Start: 45984, Stop: 45709, Start Num: 44
Candidate Starts for Munch_80:
(9, 46224), (13, 46161), (Start: 44 @45984 has 22 MA's), (59, 45915), (63, 45894), (66, 45873), (70, 45849), (72, 45837), (81, 45759),

Gene: MyraDee_74 Start: 43043, Stop: 42735, Start Num: 36
Candidate Starts for MyraDee_74:
(3, 43406), (4, 43385), (Start: 36 @43043 has 2 MA's), (Start: 39 @43022 has 3 MA's), (Start: 41 @43019 has 29 MA's), (53, 42980), (59, 42941), (81, 42788),

Gene: NaSiaTalie_80 Start: 46561, Stop: 46298, Start Num: 33
Candidate Starts for NaSiaTalie_80:
(Start: 33 @46561 has 54 MA's), (40, 46540), (61, 46489), (72, 46426),

Gene: Naca_74 Start: 45642, Stop: 45400, Start Num: 42
Candidate Starts for Naca_74:
(Start: 42 @45642 has 9 MA's),

Gene: NearlyHeadless_87 Start: 46723, Stop: 46481, Start Num: 51
Candidate Starts for NearlyHeadless_87:
(Start: 51 @46723 has 8 MA's), (70, 46612), (71, 46603),

Gene: Neeharika16_80 Start: 45241, Stop: 45020, Start Num: 54
Candidate Starts for Neeharika16_80:
(15, 45445), (27, 45355), (Start: 54 @45241 has 95 MA's), (57, 45229),

Gene: Newrala_80 Start: 45577, Stop: 45356, Start Num: 54
Candidate Starts for Newrala_80:
(15, 45781), (27, 45691), (Start: 54 @45577 has 95 MA's), (57, 45565),

Gene: NicoleTera_77 Start: 46504, Stop: 46226, Start Num: 33
Candidate Starts for NicoleTera_77:
(Start: 33 @46504 has 54 MA's), (35, 46498), (59, 46441), (70, 46375), (77, 46336), (81, 46285), (84, 46237),

Gene: NothingSpecial_73 Start: 46180, Stop: 45911, Start Num: 45
Candidate Starts for NothingSpecial_73:
(Start: 45 @46180 has 6 MA's), (48, 46174), (56, 46135), (59, 46117), (68, 46060), (71, 46042), (81, 45961),

Gene: OlanP_81 Start: 46258, Stop: 46028, Start Num: 54

Candidate Starts for OlanP_81:

(17, 46432), (19, 46408), (43, 46300), (52, 46282), (Start: 54 @46258 has 95 MA's), (66, 46189), (70, 46165), (81, 46078),

Gene: Ollie_83 Start: 46142, Stop: 45912, Start Num: 54

Candidate Starts for Ollie_83:

(43, 46184), (Start: 54 @46142 has 95 MA's), (57, 46133), (58, 46121), (59, 46115), (70, 46049),

Gene: Orange_80 Start: 45534, Stop: 45259, Start Num: 44

Candidate Starts for Orange_80:

(9, 45774), (13, 45711), (Start: 44 @45534 has 22 MA's), (59, 45465), (63, 45444), (66, 45423), (70, 45399), (72, 45387), (81, 45309),

Gene: P28Green_83 Start: 46277, Stop: 46047, Start Num: 54

Candidate Starts for P28Green_83:

(43, 46319), (Start: 54 @46277 has 95 MA's), (57, 46268), (58, 46256), (59, 46250), (70, 46184),

Gene: PGHhamlin_85 Start: 46263, Stop: 46033, Start Num: 54

Candidate Starts for PGHhamlin_85:

(43, 46305), (Start: 54 @46263 has 95 MA's), (57, 46254), (58, 46242), (59, 46236), (70, 46170),

Gene: Pawn_81 Start: 46086, Stop: 45856, Start Num: 54

Candidate Starts for Pawn_81:

(19, 46236), (43, 46128), (52, 46110), (Start: 54 @46086 has 95 MA's), (66, 46017), (70, 45993), (81, 45906),

Gene: Pembroke_83 Start: 46272, Stop: 46042, Start Num: 54

Candidate Starts for Pembroke_83:

(43, 46314), (Start: 54 @46272 has 95 MA's), (57, 46263), (58, 46251), (59, 46245), (70, 46179),

Gene: Penny1_83 Start: 46275, Stop: 46045, Start Num: 54

Candidate Starts for Penny1_83:

(43, 46317), (Start: 54 @46275 has 95 MA's), (57, 46266), (58, 46254), (59, 46248), (70, 46182),

Gene: Petersenfast_74 Start: 44415, Stop: 44140, Start Num: 44

Candidate Starts for Petersenfast_74:

(9, 44655), (13, 44592), (Start: 44 @44415 has 22 MA's), (59, 44346), (63, 44325), (66, 44304), (70, 44280), (72, 44268), (81, 44190),

Gene: PetterN_79 Start: 45429, Stop: 45187, Start Num: 42

Candidate Starts for PetterN_79:

(Start: 42 @45429 has 9 MA's),

Gene: Phillis_83 Start: 45739, Stop: 45497, Start Num: 51

Candidate Starts for Phillis_83:

(Start: 51 @45739 has 8 MA's), (59, 45694), (70, 45628), (74, 45610),

Gene: PhishRPhriends_79 Start: 45266, Stop: 45036, Start Num: 54

Candidate Starts for PhishRPhriends_79:

(19, 45416), (43, 45308), (52, 45290), (Start: 54 @45266 has 95 MA's), (66, 45197), (70, 45173), (81, 45086),

Gene: Phlorence_70 Start: 44259, Stop: 44014, Start Num: 41

Candidate Starts for Phlorence_70:

(Start: 41 @44259 has 29 MA's), (55, 44223), (65, 44172), (67, 44151), (75, 44115),

Gene: Phoebe_84 Start: 46267, Stop: 46037, Start Num: 54

Candidate Starts for Phoebe_84:

(43, 46309), (Start: 54 @46267 has 95 MA's), (57, 46258), (58, 46246), (59, 46240), (70, 46174),

Gene: Phoxy_83 Start: 46296, Stop: 46066, Start Num: 54

Candidate Starts for Phoxy_83:

(43, 46338), (Start: 54 @46296 has 95 MA's), (57, 46287), (58, 46275), (59, 46269), (70, 46203),

Gene: PickleBack_72 Start: 44434, Stop: 44189, Start Num: 41

Candidate Starts for PickleBack_72:

(Start: 41 @44434 has 29 MA's), (55, 44398), (65, 44347), (67, 44326), (75, 44290),

Gene: Piro94_78 Start: 46509, Stop: 46189, Start Num: 33

Candidate Starts for Piro94_78:

(Start: 33 @46509 has 54 MA's), (56, 46416), (59, 46398), (68, 46341), (71, 46323), (81, 46242),

Gene: Pistachio_83 Start: 46575, Stop: 46339, Start Num: 54

Candidate Starts for Pistachio_83:

(Start: 50 @46596 has 4 MA's), (Start: 54 @46575 has 95 MA's), (66, 46506), (71, 46473), (81, 46395),

Gene: Pmask_80 Start: 45778, Stop: 45557, Start Num: 54

Candidate Starts for Pmask_80:

(15, 45982), (27, 45892), (Start: 54 @45778 has 95 MA's), (57, 45766),

Gene: Pomar16_80 Start: 46631, Stop: 46359, Start Num: 33

Candidate Starts for Pomar16_80:

(Start: 33 @46631 has 54 MA's), (59, 46568), (70, 46502), (81, 46412),

Gene: PotatoSplit_84 Start: 46275, Stop: 46045, Start Num: 54

Candidate Starts for PotatoSplit_84:

(43, 46317), (Start: 54 @46275 has 95 MA's), (57, 46266), (58, 46254), (59, 46248), (70, 46182),

Gene: Power_79 Start: 47033, Stop: 46716, Start Num: 33

Candidate Starts for Power_79:

(Start: 33 @47033 has 54 MA's), (59, 46922), (67, 46871), (68, 46865), (71, 46847), (80, 46805), (81, 46766),

Gene: Priamo_82 Start: 45237, Stop: 44977, Start Num: 23

Candidate Starts for Priamo_82:

(Start: 23 @45237 has 4 MA's), (59, 45177), (61, 45162), (72, 45099), (81, 45021), (82, 44982),

Gene: Puppy_84 Start: 46645, Stop: 46409, Start Num: 54

Candidate Starts for Puppy_84:

(Start: 50 @46666 has 4 MA's), (Start: 54 @46645 has 95 MA's), (66, 46576), (71, 46543),

Gene: QueenB2_76 Start: 46156, Stop: 45854, Start Num: 46

Candidate Starts for QueenB2_76:

(Start: 46 @46156 has 7 MA's), (65, 46066), (81, 45943),

Gene: QueenBeesly_79 Start: 46830, Stop: 46513, Start Num: 33

Candidate Starts for QueenBeesly_79:

(Start: 33 @46830 has 54 MA's), (59, 46719), (67, 46668), (68, 46662), (71, 46644), (80, 46602), (81, 46563),

Gene: Rachaly_76 Start: 45987, Stop: 45709, Start Num: 33

Candidate Starts for Rachaly_76:

(6, 46284), (Start: 33 @45987 has 54 MA's), (35, 45981), (56, 45942), (59, 45924), (68, 45867), (71, 45849), (80, 45807), (81, 45768), (84, 45720),

Gene: Reba_78 Start: 44922, Stop: 44692, Start Num: 54

Candidate Starts for Reba_78:

(19, 45072), (43, 44964), (52, 44946), (Start: 54 @44922 has 95 MA's), (66, 44853), (70, 44829), (81, 44742),

Gene: RedRock_79 Start: 47115, Stop: 46849, Start Num: 26

Candidate Starts for RedRock_79:

(1, 47439), (2, 47433), (Start: 23 @47121 has 4 MA's), (Start: 26 @47115 has 1 MA's), (59, 47058), (70, 46992), (76, 46965), (81, 46902),

Gene: Retro23_79 Start: 46560, Stop: 46258, Start Num: 46

Candidate Starts for Retro23_79:

(Start: 46 @46560 has 7 MA's), (65, 46470), (81, 46347),

Gene: Roary_88 Start: 46911, Stop: 46669, Start Num: 51

Candidate Starts for Roary_88:

(Start: 51 @46911 has 8 MA's), (70, 46800), (71, 46791), (75, 46779),

Gene: Rummer_82 Start: 46299, Stop: 46069, Start Num: 54

Candidate Starts for Rummer_82:

(43, 46341), (Start: 54 @46299 has 95 MA's), (57, 46290), (58, 46278), (59, 46272), (70, 46206),

Gene: Sabia_81 Start: 46279, Stop: 46049, Start Num: 54

Candidate Starts for Sabia_81:

(43, 46321), (Start: 54 @46279 has 95 MA's), (57, 46270), (58, 46258), (59, 46252), (70, 46186),

Gene: Sabinator_81 Start: 46273, Stop: 46043, Start Num: 54

Candidate Starts for Sabinator_81:

(43, 46315), (Start: 54 @46273 has 95 MA's), (57, 46264), (58, 46252), (59, 46246), (70, 46180),

Gene: Saintus_82 Start: 43589, Stop: 43317, Start Num: 39

Candidate Starts for Saintus_82:

(28, 43649), (Start: 39 @43589 has 3 MA's), (Start: 54 @43541 has 95 MA's), (70, 43448), (71, 43439),

Gene: Salz_75 Start: 44330, Stop: 44055, Start Num: 44

Candidate Starts for Salz_75:

(9, 44570), (13, 44507), (Start: 44 @44330 has 22 MA's), (59, 44261), (63, 44240), (66, 44219), (70, 44195), (72, 44183), (81, 44105),

Gene: SaturnRing_84 Start: 47028, Stop: 46792, Start Num: 54

Candidate Starts for SaturnRing_84:

(Start: 50 @47049 has 4 MA's), (Start: 54 @47028 has 95 MA's), (66, 46959), (71, 46926), (81, 46848),

Gene: Scorpia_74 Start: 45000, Stop: 44758, Start Num: 42

Candidate Starts for Scorpia_74:

(Start: 42 @45000 has 9 MA's),

Gene: Scout_82 Start: 46209, Stop: 45973, Start Num: 54

Candidate Starts for Scout_82:

(Start: 50 @46230 has 4 MA's), (Start: 54 @46209 has 95 MA's), (66, 46140), (71, 46107),

Gene: SemperFi_79 Start: 46718, Stop: 46401, Start Num: 33

Candidate Starts for SemperFi_79:

(Start: 33 @46718 has 54 MA's), (59, 46607), (67, 46556), (68, 46550), (71, 46532), (80, 46490), (81, 46451),

Gene: Sham4_76 Start: 44413, Stop: 44138, Start Num: 44

Candidate Starts for Sham4_76:

(9, 44653), (13, 44590), (Start: 44 @44413 has 22 MA's), (59, 44344), (63, 44323), (66, 44302), (70, 44278), (72, 44266), (81, 44188),

Gene: Smeadley_86 Start: 46775, Stop: 46533, Start Num: 51

Candidate Starts for Smeadley_86:

(Start: 51 @46775 has 8 MA's), (70, 46664), (71, 46655), (75, 46643),

Gene: Smeagan_82 Start: 47272, Stop: 46952, Start Num: 33

Candidate Starts for Smeagan_82:

(Start: 33 @47272 has 54 MA's), (Start: 49 @47218 has 1 MA's), (53, 47197), (56, 47179), (66, 47119), (67, 47110), (68, 47104), (71, 47086), (81, 47005),

Gene: SmellyB_81 Start: 45136, Stop: 44915, Start Num: 54

Candidate Starts for SmellyB_81:

(Start: 54 @45136 has 95 MA's), (57, 45124),

Gene: SnapTap_79 Start: 46689, Stop: 46372, Start Num: 33

Candidate Starts for SnapTap_79:

(Start: 33 @46689 has 54 MA's), (59, 46578), (67, 46527), (68, 46521), (71, 46503), (80, 46461), (81, 46422),

Gene: Snape_80 Start: 45523, Stop: 45248, Start Num: 44

Candidate Starts for Snape_80:

(9, 45763), (13, 45700), (Start: 44 @45523 has 22 MA's), (59, 45454), (63, 45433), (66, 45412), (70, 45388), (72, 45376), (81, 45298),

Gene: Snickers_79 Start: 46244, Stop: 46014, Start Num: 54

Candidate Starts for Snickers_79:

(43, 46286), (Start: 54 @46244 has 95 MA's), (57, 46235), (58, 46223), (59, 46217), (70, 46151),

Gene: SoYo_80 Start: 46187, Stop: 45957, Start Num: 54

Candidate Starts for SoYo_80:

(43, 46229), (Start: 54 @46187 has 95 MA's), (57, 46178), (58, 46166), (59, 46160), (70, 46094),

Gene: SoilDragon_83 Start: 45714, Stop: 45484, Start Num: 54
Candidate Starts for SoilDragon_83:
(43, 45756), (Start: 54 @45714 has 95 MA's), (57, 45705), (58, 45693), (59, 45687), (70, 45621), (81, 45534),

Gene: Spike509_83 Start: 46296, Stop: 46066, Start Num: 54
Candidate Starts for Spike509_83:
(43, 46338), (Start: 54 @46296 has 95 MA's), (57, 46287), (58, 46275), (59, 46269), (70, 46203),

Gene: Stagni_80 Start: 46274, Stop: 46044, Start Num: 54
Candidate Starts for Stagni_80:
(43, 46316), (Start: 54 @46274 has 95 MA's), (57, 46265), (58, 46253), (59, 46247), (70, 46181),

Gene: StarStuff_80 Start: 46596, Stop: 46324, Start Num: 33
Candidate Starts for StarStuff_80:
(Start: 33 @46596 has 54 MA's), (59, 46533), (70, 46467), (81, 46377),

Gene: Stephig9_85 Start: 46744, Stop: 46472, Start Num: 39
Candidate Starts for Stephig9_85:
(28, 46804), (Start: 39 @46744 has 3 MA's), (Start: 54 @46696 has 95 MA's), (70, 46603), (71, 46594),

Gene: SuperAwesome_81 Start: 45817, Stop: 45596, Start Num: 54
Candidate Starts for SuperAwesome_81:
(15, 46021), (27, 45931), (Start: 54 @45817 has 95 MA's), (57, 45805),

Gene: SuperCallie99_78 Start: 45658, Stop: 45437, Start Num: 54
Candidate Starts for SuperCallie99_78:
(Start: 54 @45658 has 95 MA's), (57, 45646),

Gene: SweetiePie_79 Start: 46821, Stop: 46504, Start Num: 33
Candidate Starts for SweetiePie_79:
(Start: 33 @46821 has 54 MA's), (59, 46710), (67, 46659), (68, 46653), (71, 46635), (80, 46593), (81, 46554),

Gene: Swirley_71 Start: 44403, Stop: 44158, Start Num: 41
Candidate Starts for Swirley_71:
(Start: 41 @44403 has 29 MA's), (Start: 54 @44373 has 95 MA's), (65, 44316), (67, 44295), (75, 44259),

Gene: SydNat_71 Start: 44601, Stop: 44359, Start Num: 41
Candidate Starts for SydNat_71:
(Start: 41 @44601 has 29 MA's), (55, 44568), (57, 44565), (58, 44553), (65, 44517), (67, 44496), (75, 44460), (79, 44436),

Gene: TNguyen7_84 Start: 47007, Stop: 46750, Start Num: 50
Candidate Starts for TNguyen7_84:
(Start: 50 @47007 has 4 MA's), (Start: 54 @46986 has 95 MA's), (66, 46917), (71, 46884), (81, 46806),

Gene: TarsusIV_79 Start: 46873, Stop: 46601, Start Num: 45
Candidate Starts for TarsusIV_79:

(Start: 45 @46873 has 6 MA's), (48, 46867), (56, 46828), (59, 46810), (67, 46759), (68, 46753), (71, 46735), (81, 46654),

Gene: Tarynearal_70 Start: 44239, Stop: 43994, Start Num: 41

Candidate Starts for Tarynearal_70:

(Start: 41 @44239 has 29 MA's), (Start: 54 @44209 has 95 MA's), (65, 44152), (75, 44095),

Gene: Taurus_84 Start: 46274, Stop: 46044, Start Num: 54

Candidate Starts for Taurus_84:

(43, 46316), (Start: 54 @46274 has 95 MA's), (57, 46265), (58, 46253), (59, 46247), (70, 46181),

Gene: Theia_70 Start: 44724, Stop: 44482, Start Num: 41

Candidate Starts for Theia_70:

(Start: 41 @44724 has 29 MA's), (55, 44691), (57, 44688), (65, 44640), (67, 44619), (75, 44583), (79, 44559),

Gene: Tiffany_82 Start: 46159, Stop: 45929, Start Num: 54

Candidate Starts for Tiffany_82:

(43, 46201), (Start: 54 @46159 has 95 MA's), (57, 46150), (58, 46138), (59, 46132), (70, 46066),

Gene: Tiger_70 Start: 44180, Stop: 43935, Start Num: 41

Candidate Starts for Tiger_70:

(Start: 41 @44180 has 29 MA's), (55, 44144), (65, 44093), (67, 44072), (75, 44036),

Gene: Timothy_80 Start: 45500, Stop: 45225, Start Num: 44

Candidate Starts for Timothy_80:

(9, 45740), (13, 45677), (Start: 44 @45500 has 22 MA's), (59, 45431), (63, 45410), (66, 45389), (70, 45365), (72, 45353), (81, 45275),

Gene: TinyTimmy_78 Start: 45229, Stop: 44954, Start Num: 44

Candidate Starts for TinyTimmy_78:

(9, 45469), (13, 45406), (Start: 44 @45229 has 22 MA's), (59, 45160), (63, 45139), (66, 45118), (70, 45094), (72, 45082), (81, 45004),

Gene: Tomathan_80 Start: 46674, Stop: 46402, Start Num: 33

Candidate Starts for Tomathan_80:

(Start: 33 @46674 has 54 MA's), (59, 46611), (70, 46545), (81, 46455),

Gene: Trixie_80 Start: 47546, Stop: 47271, Start Num: 23

Candidate Starts for Trixie_80:

(Start: 23 @47546 has 4 MA's), (59, 47480), (71, 47405), (76, 47387), (81, 47324),

Gene: Trooper_79 Start: 46430, Stop: 46158, Start Num: 45

Candidate Starts for Trooper_79:

(20, 46544), (Start: 45 @46430 has 6 MA's), (48, 46424), (56, 46385), (59, 46367), (68, 46310), (71, 46292), (80, 46250), (81, 46211),

Gene: Turbido_80 Start: 46993, Stop: 46673, Start Num: 33

Candidate Starts for Turbido_80:

(Start: 33 @46993 has 54 MA's), (Start: 49 @46939 has 1 MA's), (53, 46918), (56, 46900), (66, 46840), (67, 46831), (68, 46825), (71, 46807), (81, 46726),

Gene: UnionJack_75 Start: 44664, Stop: 44422, Start Num: 42

Candidate Starts for UnionJack_75:
(Start: 42 @44664 has 9 MA's), (55, 44631),

Gene: Updawg_80 Start: 46550, Stop: 46230, Start Num: 33
Candidate Starts for Updawg_80:
(Start: 33 @46550 has 54 MA's), (Start: 49 @46496 has 1 MA's), (59, 46439), (67, 46388), (68, 46382), (71, 46364), (80, 46322), (81, 46283),

Gene: VA6_79 Start: 46565, Stop: 46284, Start Num: 33
Candidate Starts for VA6_79:
(Start: 33 @46565 has 54 MA's), (Start: 34 @46559 has 2 MA's), (56, 46511), (59, 46493), (62, 46475), (68, 46436), (71, 46418), (80, 46376), (81, 46337),

Gene: VC3_78 Start: 45517, Stop: 45221, Start Num: 33
Candidate Starts for VC3_78:
(Start: 33 @45517 has 54 MA's), (70, 45385), (81, 45295),

Gene: Vix_79 Start: 46354, Stop: 46124, Start Num: 54
Candidate Starts for Vix_79:
(43, 46396), (Start: 54 @46354 has 95 MA's), (58, 46333), (59, 46327), (70, 46261),

Gene: VohminGhazi_81 Start: 45137, Stop: 44916, Start Num: 54
Candidate Starts for VohminGhazi_81:
(Start: 54 @45137 has 95 MA's), (57, 45125),

Gene: Watson_82 Start: 46263, Stop: 46033, Start Num: 54
Candidate Starts for Watson_82:
(43, 46305), (Start: 54 @46263 has 95 MA's), (57, 46254), (58, 46242), (59, 46236), (70, 46170),

Gene: Whabigail7_79 Start: 46991, Stop: 46671, Start Num: 33
Candidate Starts for Whabigail7_79:
(Start: 33 @46991 has 54 MA's), (Start: 49 @46937 has 1 MA's), (53, 46916), (56, 46898), (66, 46838), (67, 46829), (68, 46823), (71, 46805), (81, 46724),

Gene: WideWale_80 Start: 46550, Stop: 46230, Start Num: 33
Candidate Starts for WideWale_80:
(Start: 33 @46550 has 54 MA's), (Start: 49 @46496 has 1 MA's), (59, 46439), (67, 46388), (68, 46382), (71, 46364), (80, 46322), (81, 46283),

Gene: Wooldri_85 Start: 46180, Stop: 45950, Start Num: 54
Candidate Starts for Wooldri_85:
(43, 46222), (Start: 54 @46180 has 95 MA's), (57, 46171), (58, 46159), (59, 46153), (70, 46087),

Gene: XianYue_78 Start: 46882, Stop: 46607, Start Num: 33
Candidate Starts for XianYue_78:
(14, 46996), (Start: 33 @46882 has 54 MA's), (59, 46813), (70, 46747), (71, 46738), (77, 46708), (81, 46657),

Gene: Zolita_70 Start: 44584, Stop: 44342, Start Num: 41
Candidate Starts for Zolita_70:
(Start: 41 @44584 has 29 MA's), (55, 44551), (57, 44548), (58, 44536), (65, 44500), (67, 44479), (75, 44443), (79, 44419),