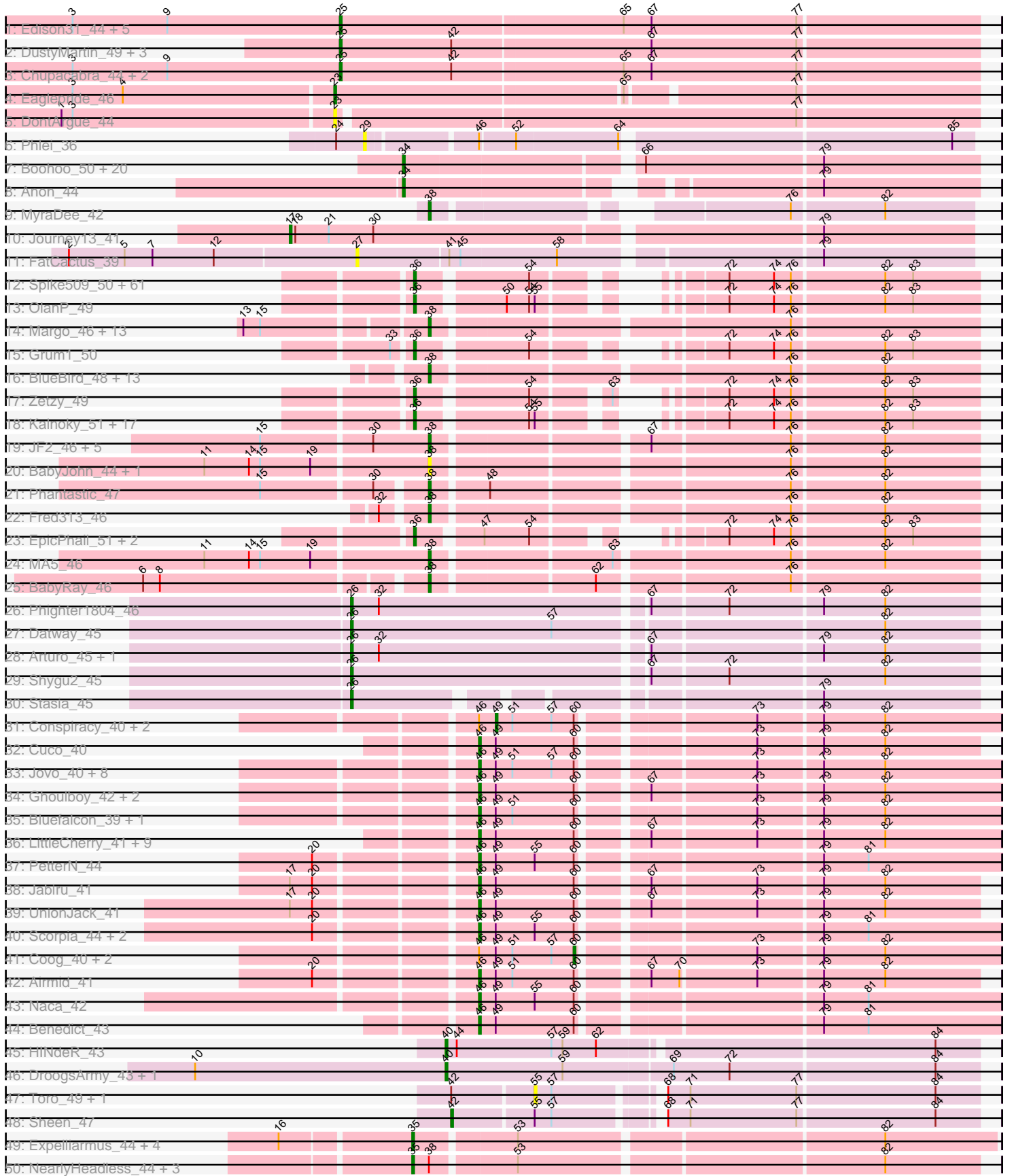


Pham 224242



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 224242 Report

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

Pham number 224242 has 269 members, 27 are drafts.

Phages represented in each track:

- Track 1 : Edison31_44, Rebeuca_45, Topanga_43, WalterMcMickey_43, Kristoff_45, Twister_43
- Track 2 : DustyMartin_49, Rowdy_49, RhynO_46, Shapes_49
- Track 3 : Chupacabra_44, OKCentral2016_44, Goose_45
- Track 4 : Eaglepride_46
- Track 5 : DontArgue_44
- Track 6 : Phlei_36
- Track 7 : Boohoo_50, ShayRa_51, DekHockey33_50, LastResort_49, Switzerland_49, Oofda_50, Soups_50, Warrior24_51, ReMo_49, Epsocamisio_48, Nebulosus_49, KatherineG_51, Remus_49, Looper_50, Waits_49, MinecraftSteve_50, Anaysia_50, Battleship_50, Rosalind_48, JSwag_48, Strosahl_49
- Track 8 : Anon_44
- Track 9 : MyraDee_42
- Track 10 : Journey13_41
- Track 11 : FatCactus_39
- Track 12 : Spike509_50, PotatoSplit_52, Ollie_50, Lilith_51, Bigflo_50, JHC117_50, Aglet_51, Hercules11_50, Microwolf_50, MarQuardt_50, SoYo_50, Taurus_51, BreSam8_50, AugsMagnumOpus_53, Watson_50, DaHudson_50, LBerry_51, Snickers_50, MadMarie_50, StepMih_50, P28Green_51, Fernando_50, AgronaGT15_49, GtownJaz_50, Dieselweasel_51, Methuselah_47, Lowa_50, Marie_50, BuzzBuzz_48, Vix_50, Grif_50, MuchMore_53, Anubis_53, Misomonster_51, TinyPebbles_49, Rummer_49, Sabia_50, Stagni_50, Bxz2_46, Louie6_49, Soshari_52, MoneyMay_50, GingkoMaracino_50, LugYA_53, Pembroke_50, Tiffany_50, HashRod_51, Sabinator_49, Mainiac_50, Phoebe_51, Daishi_49, Cullens_50, Colbster_50, PGHhamlin_52, Farber_50, KADY_50, Malinsilva_52, Phoxy_50, Grub_50, JenCasNa_51, Wooldri_52, LarryKay_50
- Track 13 : OlanP_49
- Track 14 : Margo_46, Panamaxus_44, Lambert1_46, Texage_45, Caviar_46, QuinnKiro_45, Pocahontas_46, Norbert_45, Hookmount_46, Veracruz_45, Todacoro_46, Popcicle_46, Noella_46, ResDef_46
- Track 15 : Grum1_50
- Track 16 : BlueBird_48, Giroux_47, Heathen_46, Bugatti_47, Kachowdy_46, Marchesa_46, Idleandcovert_47, SaturnRing_47, DropBear_46, Pistachio_48, Puppy_48, TNguyen7_47, HelDan_46, Scout_46
- Track 17 : Zetzy_49
- Track 18 : Kalnoky_51, ACFishhook_49, Pawn_50, Heliosoles_49, Phranny_51, Calvinny_50, Marius_51, HaveUMetTed_51, Jobu08_49, Gemma_49,

Groupthink_51, PurpleHaze_50, Manu_50, PhishRPhriends_48, JeppNRM_51,
 Kalb97_51, Reba_50, SoilDragon_50
 • Track 19 : JF2_46, JF4_46, MK4_46, Isca_45, B1_43, Rockstar_46
 • Track 20 : BabyJohn_44, Chiqui_44
 • Track 21 : Phantastic_47
 • Track 22 : Fred313_46
 • Track 23 : EpicPhail_51, Beauxregard13_50, Penny1_51
 • Track 24 : MA5_46
 • Track 25 : BabyRay_46
 • Track 26 : Phighter1804_46
 • Track 27 : Datway_45
 • Track 28 : Arturo_45, Kratak_46
 • Track 29 : Shygu2_45
 • Track 30 : Stasia_45
 • Track 31 : Conspiracy_40, Tiger_39, Theia_38
 • Track 32 : Cuco_40
 • Track 33 : Jovo_40, Discoknowium_39, Aragog_39, AgentM_39, Phlorence_39,
 PickleBack_40, ForGetIt_40, Lev2_40, Archetta_40
 • Track 34 : Ghouboy_42, SydNat_42, Zolita_41
 • Track 35 : Bluefalcon_39, MarysWell_39
 • Track 36 : LittleCherry_41, Bonamassa_41, George_40, HuhtaEnerson15_41,
 Prinash11_41, Tarynearal_39, Dublin_39, Milcery_41, Swirley_43, Micasa_42
 • Track 37 : PetterN_44
 • Track 38 : Jabiru_41
 • Track 39 : UnionJack_41
 • Track 40 : Scorpia_44, Chadwick_44, ElTiger69_42
 • Track 41 : Coog_40, Midas2_40, Twigg_41
 • Track 42 : Airmid_41
 • Track 43 : Naca_42
 • Track 44 : Benedict_43
 • Track 45 : HINdeR_43
 • Track 46 : DroogsArmy_43, Timshel_45
 • Track 47 : Toro_49, FlyCatcher_51
 • Track 48 : Sheen_47
 • Track 49 : Expelliarmus_44, Smeadley_45, Roary_45, Dixon_44, Danforth_44
 • Track 50 : NearlyHeadless_44, Astro_44, Groundhog_43, Saintus_39
 • Track 51 : Phillis_46
 • Track 52 : Stephig9_45
 • Track 53 : Alma_47
 • Track 54 : Bryce_37, Swann_37, CosmicSans_37, AngryOrchard_35, RER2_30,
 Natosaleda_37, BobbyDazzler_37, Rasputin_37, Lillie_37, Erik_37, Nancinator_37,
 Rhodalysa_37, TWAMP_37, Shuman_37, Espica_37, Jester_37, Alpacados_36,
 Takoda_37, Yoncess_37, Phrankenstein_37, RexFury_37, PhailMary_36,
 Belenaria_37, UhSalsa_37, Bonanza_37, Harlequin_37, Yogi_37, Gollum_37
 • Track 55 : Krishelle_37, AppleCloud_35, Dinger_37
 • Track 56 : Hiro_37
 • Track 57 : Bradshaw_37, StCroix_37, Naiad_37, Alatin_37
 • Track 58 : Partridge_37
 • Track 59 : RGL3_32

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

The start number called the most often in the published annotations is 36, it was called in 81 of the 242 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ACFishhook_49, Aglet_51, AgronaGT15_49, Anubis_53, AugsMagnumOpus_53, Beauxregard13_50, Bigflo_50, BreSam8_50, BuzzBuzz_48, Bxz2_46, Calvinny_50, Colbster_50, Cullens_50, DaHudson_50, Daishi_49, Dieselweasel_51, EpicPhail_51, Farber_50, Fernando_50, Gemma_49, GingkoMaracino_50, Grif_50, Groupthink_51, Grub_50, Grum1_50, GtownJaz_50, HashRod_51, HaveUMetTed_51, Heliosoles_49, Hercules11_50, JHC117_50, JenCasNa_51, JeppNRM_51, Jobu08_49, KADY_50, Kalb97_51, Kalnoky_51, LBerry_51, LarryKay_50, Lilith_51, Louie6_49, Lowa_50, LugYA_53, MadMarie_50, Mainiac_50, Malinsilva_52, Manu_50, MarQuardt_50, Marie_50, Marius_51, Methuselah_47, Microwolf_50, Misomonster_51, MoneyMay_50, MuchMore_53, OlanP_49, Ollie_50, P28Green_51, PGHhamlin_52, Pawn_50, Pembroke_50, Penny1_51, PhishRPhriends_48, Phoebe_51, Phoxy_50, Phranny_51, PotatoSplit_52, PurpleHaze_50, Reba_50, Rummer_49, Sabia_50, Sabinator_49, Snickers_50, SoYo_50, SoilDragon_50, Soshari_52, Spike509_50, Stagni_50, StepMih_50, Taurus_51, Tiffany_50, TinyPebbles_49, Vix_50, Watson_50, Wooldri_52, Zetzy_49,

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

-

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

- AgentM_39, Airmid_41, Alatin_37, Alma_47, Alpacados_36, Anaysia_50, AngryOrchard_35, Anon_44, AppleCloud_35, Aragog_39, Archetta_40, Arturo_45, Astro_44, B1_43, BabyJohn_44, BabyRay_46, Battleship_50, Belenaria_37, Benedict_43, BlueBird_48, Bluefalcon_39, BobbyDazzler_37, Bonamassa_41, Bonanza_37, Boohoo_50, Bradshaw_37, Bryce_37, Bugatti_47, Caviar_46, Chadwick_44, Chiqui_44, Chupacabra_44, Conspiracy_40, Coog_40, CosmicSans_37, Cuco_40, Danforth_44, Datway_45, DekHockey33_50, Dinger_37, Discoknowium_39, Dixon_44, DontArgue_44, DroogsArmy_43, DropBear_46, Dublin_39, DustyMartin_49, Eaglepride_46, Edison31_44, EITiger69_42, Epsocamisio_48, Erik_37, Espica_37, Expelliarmus_44, FatCactus_39, FlyCatcher_51, ForGetIt_40, Fred313_46, George_40, Ghoulboy_42, Giroux_47, Gollum_37, Goose_45, Groundhog_43, HINdeR_43, Harlequin_37, Heathen_46, HelDan_46, Hiro_37, Hookmount_46, HuhtaEnerson15_41, Idleandcovert_47, Isca_45, JF2_46, JF4_46, JSwag_48, Jabiru_41, Jester_37, Journey13_41, Jovo_40, Kachowdy_46, KatherineG_51, Kratark_46, Krishelle_37, Kristoff_45, Lambert1_46, LastResort_49, Lev2_40, Lillie_37, LittleCherry_41, Looper_50, MA5_46, MK4_46, Marchesa_46, Margo_46, MarysWell_39, Micasa_42, Midas2_40, Milcery_41, MinecraftSteve_50, MyraDee_42, Naca_42, Naiad_37, Nancinator_37, Natosaleda_37, NearlyHeadless_44, Nebulosus_49, Noella_46, Norbert_45, OKCentral2016_44, Oofda_50, Panamaxus_44, Partridge_37, PetterN_44, PhailMary_36, Phantastic_47, Phighter1804_46, Phillis_46, Phlei_36, Phlorence_39, Phrankenstein_37, PickleBack_40, Pistachio_48, Pocahontas_46, Popcicle_46, Prinash11_41, Puppy_48, QuinnKiro_45, RER2_30, RGL3_32, Rasputin_37, ReMo_49, Rebeuca_45, Remus_49, ResDef_46, RexFury_37, Rhodalysa_37, RhynO_46, Roary_45, Rockstar_46, Rosalind_48, Rowdy_49, Saintus_39, SaturnRing_47, Scorpia_44, Scout_46, Shapes_49, ShayRa_51, Sheen_47, Shuman_37, Shygu2_45, Smeadley_45, Soups_50, StCroix_37, Stasia_45, Stephig9_45, Strosahl_49, Swann_37, Swirley_43, Switzerland_49, SydNat_42,

TNguyen7_47, TWAMP_37, Takoda_37, Tarynearal_39, Texage_45, Theia_38, Tiger_39, Timshel_45, Todacoro_46, Topanga_43, Toro_49, Twigg_41, Twister_43, UhSalsa_37, UnionJack_41, Veracruz_45, Waits_49, WalterMcMickey_43, Warrior24_51, Yogi_37, Yoncess_37, Zolita_41,

Summary by start number:

Start 17:

- Found in 3 of 269 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Journey13_41 (A2),

Start 22:

- Found in 1 of 269 (0.4%) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alma_47 (A9),

Start 23:

- Found in 2 of 269 (0.7%) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DontArgue_44 (A10), Eaglepride_46 (A10),

Start 25:

- Found in 13 of 269 (4.8%) of genes in pham
- Manual Annotations of this start: 10 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chupacabra_44 (A10), DustyMartin_49 (A10), Edison31_44 (A10), Goose_45 (A10), Kristoff_45 (A10), OKCentral2016_44 (A10), Rebeuca_45 (A10), RhynO_46 (A10), Rowdy_49 (A10), Shapes_49 (A10), Topanga_43 (A10), Twister_43 (A10), WalterMcMickey_43 (A10),

Start 26:

- Found in 6 of 269 (2.2%) of genes in pham
- Manual Annotations of this start: 6 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arturo_45 (A4), Datway_45 (A4), Kratark_46 (A4), Phighter1804_46 (A4), Shygu2_45 (A4), Stasia_45 (A4),

Start 27:

- Found in 1 of 269 (0.4%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: FatCactus_39 (A20),

Start 28:

- Found in 4 of 269 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Partridge_37 (CA),

Start 29:

- Found in 1 of 269 (0.4%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Phlei_36 (A13),

Start 34:

- Found in 22 of 269 (8.2%) of genes in pham
- Manual Annotations of this start: 20 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Anaysia_50 (A15), Anon_44 (A15), Battleship_50 (A15), Boohoo_50 (A15), DekHockey33_50 (A15), Epsocamisio_48 (A15), JSwag_48 (A15), KatherineG_51 (A15), LastResort_49 (A15), Looper_50 (A15), MinecraftSteve_50 (A15), Nebulosus_49 (A15), Oofda_50 (A15), ReMo_49 (A15), Remus_49 (A15), Rosalind_48 (A15), ShayRa_51 (A15), Soups_50 (A15), Strosahl_49 (A15), Switzerland_49 (A15), Waits_49 (A15), Warrior24_51 (A15),

Start 35:

- Found in 11 of 269 (4.1%) of genes in pham
- Manual Annotations of this start: 11 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Astro_44 (A8), Danforth_44 (A8), Dixon_44 (A8), Expelliarmus_44 (A8), Groundhog_43 (A8), NearlyHeadless_44 (A8), Phillis_46 (A8), Roary_45 (A8), Saintus_39 (A8), Smeadley_45 (A8), StepHig9_45 (A8),

Start 36:

- Found in 86 of 269 (32.0%) of genes in pham
- Manual Annotations of this start: 81 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ACFishhook_49 (A3), Aglet_51 (A3), AgronaGT15_49 (A3), Anubis_53 (A3), AugsMagnumOpus_53 (A3), Beauxregard13_50 (A3), Bigflo_50 (A3), BreSam8_50 (A3), BuzzBuzz_48 (A3), Bxz2_46 (A3), Calvinny_50 (A3), Colbster_50 (A3), Cullens_50 (A3), DaHudson_50 (A3), Daishi_49 (A3), Dieselweasel_51 (A3), EpicPhail_51 (A3), Farber_50 (A3), Fernando_50 (A3), Gemma_49 (A3), GingkoMaracino_50 (A3), Grif_50 (A3), Groupthink_51 (A3), Grub_50 (A3), Grum1_50 (A3), GtownJaz_50 (A3), HashRod_51 (A3), HaveUMetTed_51 (A3), Heliosoles_49 (A3), Hercules11_50 (A3), JHC117_50 (A3), JenCasNa_51 (A3), JeppNRM_51 (A3), Jobu08_49 (A3), KADY_50 (A3), Kalb97_51 (A3), Kalnoky_51 (A3), LBerry_51 (A3), LarryKay_50 (A3), Liliith_51 (A3), Louie6_49 (A3), Iowa_50 (A3), LugYA_53 (A3), MadMarie_50 (A3), Mainiac_50 (A3), Malinsilva_52 (A3), Manu_50 (A3), MarQuardt_50 (A3), Marie_50 (A3), Marius_51 (A3), Methuselah_47 (A3), Microwolf_50 (A3), Misomonster_51 (A3), MoneyMay_50 (A3), MuchMore_53 (A3), OlanP_49 (A3), Ollie_50 (A3), P28Green_51 (A3), PGHhamlin_52 (A3), Pawn_50 (A3), Pembroke_50 (A3), Penny1_51 (A3), PhishRPhriends_48 (A3), Phoebe_51 (A3), Phoxy_50 (A3), Phranny_51 (A3), PotatoSplit_52 (A3), PurpleHaze_50 (A3), Reba_50 (A3), Rummer_49 (A3), Sabia_50 (A3), Sabinator_49 (A3), Snickers_50 (A3), SoYo_50 (A3), SoilDragon_50 (A3), Soshari_52 (A3), Spike509_50 (A3), Stagni_50 (A3), StepMih_50 (A3), Taurus_51 (A3), Tiffany_50 (A3), TinyPebbles_49 (A3), Vix_50 (A3), Watson_50 (A3), Wooldri_52 (A3), Zetzy_49 (A3),

Start 37:

- Found in 37 of 269 (13.8%) of genes in pham
- Manual Annotations of this start: 35 of 242
- Called 97.3% of time when present
- Phage (with cluster) where this start called: Alatin_37 (CA), Alpacados_36 (CA), AngryOrchard_35 (CA), AppleCloud_35 (CA), Belenaria_37 (CA), BobbyDazzler_37 (CA), Bonanza_37 (CA), Bradshaw_37 (CA), Bryce_37 (CA), CosmicSans_37 (CA), Dinger_37 (CA), Erik_37 (CA), Espica_37 (CA), Gollum_37 (CA), Harlequin_37 (CA), Hiro_37 (CA), Jester_37 (CA), Krishelle_37 (CA), Lillie_37 (CA), Naiad_37 (CA), Nancinator_37 (CA), Natosaleda_37 (CA), PhailMary_36 (CA), Phrankenstien_37 (CA), RER2_30 (CA), Rasputin_37 (CA), RexFury_37 (CA), Rhodalysa_37 (CA), Shuman_37 (CA), StCroix_37 (CA), Swann_37 (CA), TWAMP_37 (CA), Takoda_37 (CA), UhSalsa_37 (CA), Yogi_37 (CA), Yoncess_37 (CA),

Start 38:

- Found in 47 of 269 (17.5%) of genes in pham
- Manual Annotations of this start: 33 of 242
- Called 87.2% of time when present
- Phage (with cluster) where this start called: B1_43 (A3), BabyJohn_44 (A3), BabyRay_46 (A3), BlueBird_48 (A3), Bugatti_47 (A3), Caviar_46 (A3), Chiqui_44 (A3), DropBear_46 (A3), Fred313_46 (A3), Giroux_47 (A3), Heathen_46 (A3), HelDan_46 (A3), Hookmount_46 (A3), Idleandcovert_47 (A3), Isca_45 (A3), JF2_46 (A3), JF4_46 (A3), Kachowdy_46 (A3), Lambert1_46 (A3), MA5_46 (A3), MK4_46 (A3), Marchesa_46 (A3), Margo_46 (A3), MyraDee_42 (A18), Noella_46 (A3), Norbert_45 (A3), Panamaxus_44 (A3), Phantastic_47 (A3), Pistachio_48 (A3), Pocahontas_46 (A3), Popcicle_46 (A3), Puppy_48 (A3), QuinnKiro_45 (A3), ResDef_46 (A3), Rockstar_46 (A3), SaturnRing_47 (A3), Scout_46 (A3), TNguyen7_47 (A3), Texage_45 (A3), Todacoro_46 (A3), Veracruz_45 (A3),

Start 39:

- Found in 1 of 269 (0.4%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RGL3_32 (CA),

Start 40:

- Found in 3 of 269 (1.1%) of genes in pham
- Manual Annotations of this start: 3 of 242
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DroogsArmy_43 (A7), HINdeR_43 (A7), Timshel_45 (A7),

Start 42:

- Found in 10 of 269 (3.7%) of genes in pham
- Manual Annotations of this start: 1 of 242
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Sheen_47 (A7),

Start 46:

- Found in 41 of 269 (15.2%) of genes in pham
- Manual Annotations of this start: 33 of 242
- Called 82.9% of time when present

- Phage (with cluster) where this start called: AgentM_39 (A5), Airmid_41 (A5), Aragog_39 (A5), Archetta_40 (A5), Benedict_43 (A5), Bluefalcon_39 (A5), Bonamassa_41 (A5), Chadwick_44 (A5), Cuco_40 (A5), Discoknowium_39 (A5), Dublin_39 (A5), ElTiger69_42 (A5), ForGetIt_40 (A5), George_40 (A5), Ghoulboy_42 (A5), HuhtaEnerson15_41 (A5), Jabiru_41 (A5), Jovo_40 (A5), Lev2_40 (A5), LittleCherry_41 (A5), MarysWell_39 (A5), Micasa_42 (A5), Milcery_41 (A5), Naca_42 (A5), PetterN_44 (A5), Phlorence_39 (A5), PickleBack_40 (A5), Prinashe11_41 (A5), Scorpia_44 (A5), Swirley_43 (A5), SydNat_42 (A5), Tarynearal_39 (A5), UnionJack_41 (A5), Zolita_41 (A5),

Start 49:

- Found in 40 of 269 (14.9%) of genes in pham
- Manual Annotations of this start: 3 of 242
- Called 7.5% of time when present
- Phage (with cluster) where this start called: Conspiracy_40 (A5), Theia_38 (A5), Tiger_39 (A5),

Start 55:

- Found in 27 of 269 (10.0%) of genes in pham
- No Manual Annotations of this start.
- Called 7.4% of time when present
- Phage (with cluster) where this start called: FlyCatcher_51 (A7), Toro_49 (A7),

Start 60:

- Found in 40 of 269 (14.9%) of genes in pham
- Manual Annotations of this start: 2 of 242
- Called 7.5% of time when present
- Phage (with cluster) where this start called: Coog_40 (A5), Midas2_40 (A5), Twigg_41 (A5),

Summary by clusters:

There are 13 clusters represented in this pham: A15, A20, A10, A13, CA, A18, A3, A2, A5, A4, A7, A9, A8,

Info for manual annotations of cluster A10:

- Start number 23 was manually annotated 1 time for cluster A10.
- Start number 25 was manually annotated 10 times for cluster A10.

Info for manual annotations of cluster A15:

- Start number 34 was manually annotated 20 times for cluster A15.

Info for manual annotations of cluster A18:

- Start number 38 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A2:

- Start number 17 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A3:

- Start number 36 was manually annotated 81 times for cluster A3.
- Start number 38 was manually annotated 32 times for cluster A3.

Info for manual annotations of cluster A4:

- Start number 26 was manually annotated 6 times for cluster A4.

Info for manual annotations of cluster A5:

- Start number 46 was manually annotated 33 times for cluster A5.
- Start number 49 was manually annotated 3 times for cluster A5.
- Start number 60 was manually annotated 2 times for cluster A5.

Info for manual annotations of cluster A7:

- Start number 40 was manually annotated 3 times for cluster A7.
- Start number 42 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster A8:

- Start number 35 was manually annotated 11 times for cluster A8.

Info for manual annotations of cluster A9:

- Start number 22 was manually annotated 1 time for cluster A9.

Info for manual annotations of cluster CA:

- Start number 28 was manually annotated 1 time for cluster CA.
- Start number 37 was manually annotated 35 times for cluster CA.

Gene Information:

Gene: ACFishhook_49 Start: 32280, Stop: 32032, Start Num: 36

Candidate Starts for ACFishhook_49:

(Start: 36 @32280 has 81 MA's), (54, 32226), (55, 32223), (72, 32163), (74, 32139), (76, 32130), (82, 32082), (83, 32067),

Gene: AgentM_39 Start: 30764, Stop: 30501, Start Num: 46

Candidate Starts for AgentM_39:

(Start: 46 @30764 has 33 MA's), (Start: 49 @30755 has 3 MA's), (51, 30746), (57, 30725), (Start: 60 @30713 has 2 MA's), (73, 30629), (79, 30596), (82, 30563),

Gene: Aglet_51 Start: 32309, Stop: 32061, Start Num: 36

Candidate Starts for Aglet_51:

(Start: 36 @32309 has 81 MA's), (54, 32255), (72, 32192), (74, 32168), (76, 32159), (82, 32111), (83, 32096),

Gene: AgronaGT15_49 Start: 32160, Stop: 31912, Start Num: 36

Candidate Starts for AgronaGT15_49:

(Start: 36 @32160 has 81 MA's), (54, 32106), (72, 32043), (74, 32019), (76, 32010), (82, 31962), (83, 31947),

Gene: Airmid_41 Start: 30823, Stop: 30572, Start Num: 46

Candidate Starts for Airmid_41:

(20, 30901), (Start: 46 @30823 has 33 MA's), (Start: 49 @30814 has 3 MA's), (51, 30805), (Start: 60 @30772 has 2 MA's), (67, 30742), (70, 30727), (73, 30688), (79, 30655), (82, 30622),

Gene: Alatin_37 Start: 28461, Stop: 28189, Start Num: 37

Candidate Starts for Alatin_37:
(Start: 37 @28461 has 35 MA's), (81, 28245), (84, 28209),

Gene: Alma_47 Start: 32160, Stop: 31834, Start Num: 22
Candidate Starts for Alma_47:
(Start: 22 @32160 has 1 MA's), (31, 32136), (43, 32094), (84, 31854),

Gene: Alpacados_36 Start: 28366, Stop: 28094, Start Num: 37
Candidate Starts for Alpacados_36:
(Start: 37 @28366 has 35 MA's), (56, 28300), (81, 28150), (84, 28114),

Gene: Anaysia_50 Start: 30853, Stop: 30560, Start Num: 34
Candidate Starts for Anaysia_50:
(Start: 34 @30853 has 20 MA's), (66, 30736), (79, 30643),

Gene: AngryOrchard_35 Start: 28325, Stop: 28053, Start Num: 37
Candidate Starts for AngryOrchard_35:
(Start: 37 @28325 has 35 MA's), (56, 28259), (81, 28109), (84, 28073),

Gene: Anon_44 Start: 29643, Stop: 29365, Start Num: 34
Candidate Starts for Anon_44:
(Start: 34 @29643 has 20 MA's), (79, 29448),

Gene: Anubis_53 Start: 32195, Stop: 31947, Start Num: 36
Candidate Starts for Anubis_53:
(Start: 36 @32195 has 81 MA's), (54, 32141), (72, 32078), (74, 32054), (76, 32045), (82, 31997), (83, 31982),

Gene: AppleCloud_35 Start: 28336, Stop: 28064, Start Num: 37
Candidate Starts for AppleCloud_35:
(Start: 28 @28369 has 1 MA's), (Start: 37 @28336 has 35 MA's), (61, 28249), (81, 28120), (84, 28084),

Gene: Aragog_39 Start: 30794, Stop: 30531, Start Num: 46
Candidate Starts for Aragog_39:
(Start: 46 @30794 has 33 MA's), (Start: 49 @30785 has 3 MA's), (51, 30776), (57, 30755), (Start: 60 @30743 has 2 MA's), (73, 30659), (79, 30626), (82, 30593),

Gene: Archetta_40 Start: 31324, Stop: 31061, Start Num: 46
Candidate Starts for Archetta_40:
(Start: 46 @31324 has 33 MA's), (Start: 49 @31315 has 3 MA's), (51, 31306), (57, 31285), (Start: 60 @31273 has 2 MA's), (73, 31189), (79, 31156), (82, 31123),

Gene: Arturo_45 Start: 32157, Stop: 31834, Start Num: 26
Candidate Starts for Arturo_45:
(Start: 26 @32157 has 6 MA's), (32, 32142), (67, 32004), (79, 31917), (82, 31884),

Gene: Astro_44 Start: 31145, Stop: 30849, Start Num: 35
Candidate Starts for Astro_44:
(Start: 35 @31145 has 11 MA's), (Start: 38 @31136 has 33 MA's), (53, 31094), (82, 30908),

Gene: AugsMagnumOpus_53 Start: 32300, Stop: 32052, Start Num: 36
Candidate Starts for AugsMagnumOpus_53:

(Start: 36 @32300 has 81 MA's), (54, 32246), (72, 32183), (74, 32159), (76, 32150), (82, 32102), (83, 32087),

Gene: B1_43 Start: 31013, Stop: 30738, Start Num: 38

Candidate Starts for B1_43:

(15, 31100), (30, 31043), (Start: 38 @31013 has 33 MA's), (67, 30908), (76, 30836), (82, 30788),

Gene: BabyJohn_44 Start: 31805, Stop: 31530, Start Num: 38

Candidate Starts for BabyJohn_44:

(11, 31922), (14, 31898), (15, 31892), (19, 31865), (Start: 38 @31805 has 33 MA's), (76, 31628), (82, 31580),

Gene: BabyRay_46 Start: 31749, Stop: 31474, Start Num: 38

Candidate Starts for BabyRay_46:

(6, 31890), (8, 31881), (Start: 38 @31749 has 33 MA's), (62, 31668), (76, 31572),

Gene: Battleship_50 Start: 30586, Stop: 30293, Start Num: 34

Candidate Starts for Battleship_50:

(Start: 34 @30586 has 20 MA's), (66, 30469), (79, 30376),

Gene: Beauxregard13_50 Start: 32312, Stop: 32064, Start Num: 36

Candidate Starts for Beauxregard13_50:

(Start: 36 @32312 has 81 MA's), (47, 32282), (54, 32258), (72, 32195), (74, 32171), (76, 32162), (82, 32114), (83, 32099),

Gene: Belenaria_37 Start: 28395, Stop: 28123, Start Num: 37

Candidate Starts for Belenaria_37:

(Start: 37 @28395 has 35 MA's), (56, 28329), (81, 28179), (84, 28143),

Gene: Benedict_43 Start: 30995, Stop: 30732, Start Num: 46

Candidate Starts for Benedict_43:

(Start: 46 @30995 has 33 MA's), (Start: 49 @30986 has 3 MA's), (Start: 60 @30944 has 2 MA's), (79, 30827), (81, 30803),

Gene: Bigflo_50 Start: 32308, Stop: 32060, Start Num: 36

Candidate Starts for Bigflo_50:

(Start: 36 @32308 has 81 MA's), (54, 32254), (72, 32191), (74, 32167), (76, 32158), (82, 32110), (83, 32095),

Gene: BlueBird_48 Start: 31838, Stop: 31563, Start Num: 38

Candidate Starts for BlueBird_48:

(Start: 38 @31838 has 33 MA's), (76, 31661), (82, 31613),

Gene: Bluefalcon_39 Start: 31282, Stop: 31019, Start Num: 46

Candidate Starts for Bluefalcon_39:

(Start: 46 @31282 has 33 MA's), (Start: 49 @31273 has 3 MA's), (51, 31264), (Start: 60 @31231 has 2 MA's), (73, 31147), (79, 31114), (82, 31081),

Gene: BobbyDazzler_37 Start: 28440, Stop: 28168, Start Num: 37

Candidate Starts for BobbyDazzler_37:

(Start: 37 @28440 has 35 MA's), (56, 28374), (81, 28224), (84, 28188),

Gene: Bonamassa_41 Start: 31313, Stop: 31050, Start Num: 46

Candidate Starts for Bonamassa_41:

(Start: 46 @31313 has 33 MA's), (Start: 49 @31304 has 3 MA's), (Start: 60 @31262 has 2 MA's), (67, 31232), (73, 31178), (79, 31145), (82, 31112),

Gene: Bonanza_37 Start: 28368, Stop: 28096, Start Num: 37

Candidate Starts for Bonanza_37:

(Start: 37 @28368 has 35 MA's), (56, 28302), (81, 28152), (84, 28116),

Gene: Boohoo_50 Start: 30853, Stop: 30560, Start Num: 34

Candidate Starts for Boohoo_50:

(Start: 34 @30853 has 20 MA's), (66, 30736), (79, 30643),

Gene: Bradshaw_37 Start: 28394, Stop: 28122, Start Num: 37

Candidate Starts for Bradshaw_37:

(Start: 37 @28394 has 35 MA's), (81, 28178), (84, 28142),

Gene: BreSam8_50 Start: 32302, Stop: 32054, Start Num: 36

Candidate Starts for BreSam8_50:

(Start: 36 @32302 has 81 MA's), (54, 32248), (72, 32185), (74, 32161), (76, 32152), (82, 32104), (83, 32089),

Gene: Bryce_37 Start: 28369, Stop: 28097, Start Num: 37

Candidate Starts for Bryce_37:

(Start: 37 @28369 has 35 MA's), (56, 28303), (81, 28153), (84, 28117),

Gene: Bugatti_47 Start: 31838, Stop: 31563, Start Num: 38

Candidate Starts for Bugatti_47:

(Start: 38 @31838 has 33 MA's), (76, 31661), (82, 31613),

Gene: BuzzBuzz_48 Start: 32339, Stop: 32091, Start Num: 36

Candidate Starts for BuzzBuzz_48:

(Start: 36 @32339 has 81 MA's), (54, 32285), (72, 32222), (74, 32198), (76, 32189), (82, 32141), (83, 32126),

Gene: Bxz2_46 Start: 32346, Stop: 32098, Start Num: 36

Candidate Starts for Bxz2_46:

(Start: 36 @32346 has 81 MA's), (54, 32292), (72, 32229), (74, 32205), (76, 32196), (82, 32148), (83, 32133),

Gene: Calvinny_50 Start: 32208, Stop: 31960, Start Num: 36

Candidate Starts for Calvinny_50:

(Start: 36 @32208 has 81 MA's), (54, 32154), (55, 32151), (72, 32091), (74, 32067), (76, 32058), (82, 32010), (83, 31995),

Gene: Caviar_46 Start: 32081, Stop: 31806, Start Num: 38

Candidate Starts for Caviar_46:

(13, 32171), (15, 32162), (Start: 38 @32081 has 33 MA's), (76, 31904),

Gene: Chadwick_44 Start: 30975, Stop: 30712, Start Num: 46

Candidate Starts for Chadwick_44:

(20, 31053), (Start: 46 @30975 has 33 MA's), (Start: 49 @30966 has 3 MA's), (55, 30945), (Start: 60 @30924 has 2 MA's), (79, 30807), (81, 30783),

Gene: Chiqui_44 Start: 31814, Stop: 31539, Start Num: 38

Candidate Starts for Chiqui_44:

(11, 31931), (14, 31907), (15, 31901), (19, 31874), (Start: 38 @31814 has 33 MA's), (76, 31637), (82, 31589),

Gene: Chupacabra_44 Start: 31467, Stop: 31129, Start Num: 25

Candidate Starts for Chupacabra_44:

(3, 31611), (9, 31560), (Start: 25 @31467 has 10 MA's), (Start: 42 @31407 has 1 MA's), (65, 31317), (67, 31302), (77, 31224),

Gene: Colbster_50 Start: 32312, Stop: 32064, Start Num: 36

Candidate Starts for Colbster_50:

(Start: 36 @32312 has 81 MA's), (54, 32258), (72, 32195), (74, 32171), (76, 32162), (82, 32114), (83, 32099),

Gene: Conspiracy_40 Start: 30997, Stop: 30743, Start Num: 49

Candidate Starts for Conspiracy_40:

(Start: 46 @31006 has 33 MA's), (Start: 49 @30997 has 3 MA's), (51, 30988), (57, 30967), (Start: 60 @30955 has 2 MA's), (73, 30871), (79, 30838), (82, 30805),

Gene: Coog_40 Start: 31053, Stop: 30841, Start Num: 60

Candidate Starts for Coog_40:

(Start: 46 @31104 has 33 MA's), (Start: 49 @31095 has 3 MA's), (51, 31086), (57, 31065), (Start: 60 @31053 has 2 MA's), (73, 30969), (79, 30936), (82, 30903),

Gene: CosmicSans_37 Start: 28394, Stop: 28122, Start Num: 37

Candidate Starts for CosmicSans_37:

(Start: 37 @28394 has 35 MA's), (56, 28328), (81, 28178), (84, 28142),

Gene: Cuco_40 Start: 31061, Stop: 30810, Start Num: 46

Candidate Starts for Cuco_40:

(Start: 46 @31061 has 33 MA's), (Start: 49 @31052 has 3 MA's), (Start: 60 @31010 has 2 MA's), (73, 30926), (79, 30893), (82, 30860),

Gene: Cullens_50 Start: 32308, Stop: 32060, Start Num: 36

Candidate Starts for Cullens_50:

(Start: 36 @32308 has 81 MA's), (54, 32254), (72, 32191), (74, 32167), (76, 32158), (82, 32110), (83, 32095),

Gene: DaHudson_50 Start: 32301, Stop: 32053, Start Num: 36

Candidate Starts for DaHudson_50:

(Start: 36 @32301 has 81 MA's), (54, 32247), (72, 32184), (74, 32160), (76, 32151), (82, 32103), (83, 32088),

Gene: Daishi_49 Start: 31180, Stop: 30932, Start Num: 36

Candidate Starts for Daishi_49:

(Start: 36 @31180 has 81 MA's), (54, 31126), (72, 31063), (74, 31039), (76, 31030), (82, 30982), (83, 30967),

Gene: Danforth_44 Start: 31174, Stop: 30878, Start Num: 35

Candidate Starts for Danforth_44:

(16, 31240), (Start: 35 @31174 has 11 MA's), (53, 31123), (82, 30937),

Gene: Datway_45 Start: 31839, Stop: 31516, Start Num: 26

Candidate Starts for Datway_45:

(Start: 26 @31839 has 6 MA's), (57, 31731), (82, 31566),

Gene: DekHockey33_50 Start: 31068, Stop: 30775, Start Num: 34

Candidate Starts for DekHockey33_50:

(Start: 34 @31068 has 20 MA's), (66, 30951), (79, 30858),

Gene: Dieselweasel_51 Start: 32311, Stop: 32063, Start Num: 36

Candidate Starts for Dieselweasel_51:

(Start: 36 @32311 has 81 MA's), (54, 32257), (72, 32194), (74, 32170), (76, 32161), (82, 32113), (83, 32098),

Gene: Dinger_37 Start: 28378, Stop: 28106, Start Num: 37

Candidate Starts for Dinger_37:

(Start: 28 @28411 has 1 MA's), (Start: 37 @28378 has 35 MA's), (61, 28291), (81, 28162), (84, 28126),

Gene: Discoknowium_39 Start: 30803, Stop: 30540, Start Num: 46

Candidate Starts for Discoknowium_39:

(Start: 46 @30803 has 33 MA's), (Start: 49 @30794 has 3 MA's), (51, 30785), (57, 30764), (Start: 60 @30752 has 2 MA's), (73, 30668), (79, 30635), (82, 30602),

Gene: Dixon_44 Start: 31047, Stop: 30760, Start Num: 35

Candidate Starts for Dixon_44:

(16, 31113), (Start: 35 @31047 has 11 MA's), (53, 30996), (82, 30810),

Gene: DontArgue_44 Start: 30703, Stop: 30368, Start Num: 23

Candidate Starts for DontArgue_44:

(1, 30847), (3, 30841), (Start: 23 @30703 has 1 MA's), (77, 30463),

Gene: DroogsArmy_43 Start: 33565, Stop: 33284, Start Num: 40

Candidate Starts for DroogsArmy_43:

(10, 33700), (Start: 40 @33565 has 3 MA's), (59, 33502), (69, 33445), (72, 33415), (84, 33307),

Gene: DropBear_46 Start: 31726, Stop: 31451, Start Num: 38

Candidate Starts for DropBear_46:

(Start: 38 @31726 has 33 MA's), (76, 31549), (82, 31501),

Gene: Dublin_39 Start: 30825, Stop: 30562, Start Num: 46

Candidate Starts for Dublin_39:

(Start: 46 @30825 has 33 MA's), (Start: 49 @30816 has 3 MA's), (Start: 60 @30774 has 2 MA's), (67, 30744), (73, 30690), (79, 30657), (82, 30624),

Gene: DustyMartin_49 Start: 31547, Stop: 31209, Start Num: 25

Candidate Starts for DustyMartin_49:

(Start: 25 @31547 has 10 MA's), (Start: 42 @31487 has 1 MA's), (67, 31382), (77, 31304),

Gene: Eaglepride_46 Start: 31543, Stop: 31214, Start Num: 23

Candidate Starts for Eaglepride_46:

(3, 31681), (4, 31654), (Start: 23 @31543 has 1 MA's), (65, 31393), (77, 31309),

Gene: Edison31_44 Start: 31487, Stop: 31149, Start Num: 25

Candidate Starts for Edison31_44:

(3, 31631), (9, 31580), (Start: 25 @31487 has 10 MA's), (65, 31337), (67, 31322), (77, 31244),

Gene: EITiger69_42 Start: 30992, Stop: 30729, Start Num: 46

Candidate Starts for EITiger69_42:

(20, 31070), (Start: 46 @30992 has 33 MA's), (Start: 49 @30983 has 3 MA's), (55, 30962), (Start: 60 @30941 has 2 MA's), (79, 30824), (81, 30800),

Gene: EpicPhail_51 Start: 32312, Stop: 32064, Start Num: 36

Candidate Starts for EpicPhail_51:

(Start: 36 @32312 has 81 MA's), (47, 32282), (54, 32258), (72, 32195), (74, 32171), (76, 32162), (82, 32114), (83, 32099),

Gene: Epsocamisio_48 Start: 30391, Stop: 30098, Start Num: 34

Candidate Starts for Epsocamisio_48:

(Start: 34 @30391 has 20 MA's), (66, 30274), (79, 30181),

Gene: Erik_37 Start: 28392, Stop: 28120, Start Num: 37

Candidate Starts for Erik_37:

(Start: 37 @28392 has 35 MA's), (56, 28326), (81, 28176), (84, 28140),

Gene: Espica_37 Start: 28395, Stop: 28123, Start Num: 37

Candidate Starts for Espica_37:

(Start: 37 @28395 has 35 MA's), (56, 28329), (81, 28179), (84, 28143),

Gene: Expelliarmus_44 Start: 31203, Stop: 30907, Start Num: 35

Candidate Starts for Expelliarmus_44:

(16, 31269), (Start: 35 @31203 has 11 MA's), (53, 31152), (82, 30966),

Gene: Farber_50 Start: 32301, Stop: 32053, Start Num: 36

Candidate Starts for Farber_50:

(Start: 36 @32301 has 81 MA's), (54, 32247), (72, 32184), (74, 32160), (76, 32151), (82, 32103), (83, 32088),

Gene: FatCactus_39 Start: 29455, Stop: 29141, Start Num: 27

Candidate Starts for FatCactus_39:

(2, 29608), (5, 29578), (7, 29563), (12, 29530), (27, 29455), (41, 29407), (45, 29401), (58, 29350), (79, 29221),

Gene: Fernando_50 Start: 32308, Stop: 32060, Start Num: 36

Candidate Starts for Fernando_50:

(Start: 36 @32308 has 81 MA's), (54, 32254), (72, 32191), (74, 32167), (76, 32158), (82, 32110), (83, 32095),

Gene: FlyCatcher_51 Start: 34178, Stop: 33957, Start Num: 55

Candidate Starts for FlyCatcher_51:

(Start: 42 @34220 has 1 MA's), (55, 34178), (57, 34169), (68, 34121), (71, 34109), (77, 34052), (84, 33980),

Gene: ForGetIt_40 Start: 31031, Stop: 30768, Start Num: 46

Candidate Starts for ForGetIt_40:

(Start: 46 @31031 has 33 MA's), (Start: 49 @31022 has 3 MA's), (51, 31013), (57, 30992), (Start: 60 @30980 has 2 MA's), (73, 30896), (79, 30863), (82, 30830),

Gene: Fred313_46 Start: 31411, Stop: 31136, Start Num: 38
Candidate Starts for Fred313_46:
(32, 31432), (Start: 38 @31411 has 33 MA's), (76, 31234), (82, 31186),

Gene: Gemma_49 Start: 32204, Stop: 31956, Start Num: 36
Candidate Starts for Gemma_49:
(Start: 36 @32204 has 81 MA's), (54, 32150), (55, 32147), (72, 32087), (74, 32063), (76, 32054), (82, 32006), (83, 31991),

Gene: George_40 Start: 31255, Stop: 30992, Start Num: 46
Candidate Starts for George_40:
(Start: 46 @31255 has 33 MA's), (Start: 49 @31246 has 3 MA's), (Start: 60 @31204 has 2 MA's), (67, 31174), (73, 31120), (79, 31087), (82, 31054),

Gene: Ghouboy_42 Start: 31768, Stop: 31505, Start Num: 46
Candidate Starts for Ghouboy_42:
(Start: 46 @31768 has 33 MA's), (Start: 49 @31759 has 3 MA's), (Start: 60 @31717 has 2 MA's), (67, 31687), (73, 31633), (79, 31600), (82, 31567),

Gene: GingkoMaracino_50 Start: 32194, Stop: 31946, Start Num: 36
Candidate Starts for GingkoMaracino_50:
(Start: 36 @32194 has 81 MA's), (54, 32140), (72, 32077), (74, 32053), (76, 32044), (82, 31996), (83, 31981),

Gene: Giroux_47 Start: 31837, Stop: 31562, Start Num: 38
Candidate Starts for Giroux_47:
(Start: 38 @31837 has 33 MA's), (76, 31660), (82, 31612),

Gene: Gollum_37 Start: 28394, Stop: 28122, Start Num: 37
Candidate Starts for Gollum_37:
(Start: 37 @28394 has 35 MA's), (56, 28328), (81, 28178), (84, 28142),

Gene: Goose_45 Start: 31271, Stop: 30933, Start Num: 25
Candidate Starts for Goose_45:
(3, 31415), (9, 31364), (Start: 25 @31271 has 10 MA's), (Start: 42 @31211 has 1 MA's), (65, 31121), (67, 31106), (77, 31028),

Gene: Grif_50 Start: 32383, Stop: 32135, Start Num: 36
Candidate Starts for Grif_50:
(Start: 36 @32383 has 81 MA's), (54, 32329), (72, 32266), (74, 32242), (76, 32233), (82, 32185), (83, 32170),

Gene: Groundhog_43 Start: 31110, Stop: 30814, Start Num: 35
Candidate Starts for Groundhog_43:
(Start: 35 @31110 has 11 MA's), (Start: 38 @31101 has 33 MA's), (53, 31059), (82, 30873),

Gene: Groupthink_51 Start: 32208, Stop: 31960, Start Num: 36
Candidate Starts for Groupthink_51:
(Start: 36 @32208 has 81 MA's), (54, 32154), (55, 32151), (72, 32091), (74, 32067), (76, 32058), (82, 32010), (83, 31995),

Gene: Grub_50 Start: 32300, Stop: 32052, Start Num: 36
Candidate Starts for Grub_50:

(Start: 36 @32300 has 81 MA's), (54, 32246), (72, 32183), (74, 32159), (76, 32150), (82, 32102), (83, 32087),

Gene: Grum1_50 Start: 32308, Stop: 32060, Start Num: 36

Candidate Starts for Grum1_50:

(33, 32317), (Start: 36 @32308 has 81 MA's), (54, 32254), (72, 32191), (74, 32167), (76, 32158), (82, 32110), (83, 32095),

Gene: GtownJaz_50 Start: 32310, Stop: 32062, Start Num: 36

Candidate Starts for GtownJaz_50:

(Start: 36 @32310 has 81 MA's), (54, 32256), (72, 32193), (74, 32169), (76, 32160), (82, 32112), (83, 32097),

Gene: HINdeR_43 Start: 33388, Stop: 33113, Start Num: 40

Candidate Starts for HINdeR_43:

(Start: 40 @33388 has 3 MA's), (44, 33382), (57, 33331), (59, 33325), (62, 33307), (84, 33136),

Gene: Harlequin_37 Start: 28399, Stop: 28127, Start Num: 37

Candidate Starts for Harlequin_37:

(Start: 37 @28399 has 35 MA's), (56, 28333), (81, 28183), (84, 28147),

Gene: HashRod_51 Start: 32339, Stop: 32091, Start Num: 36

Candidate Starts for HashRod_51:

(Start: 36 @32339 has 81 MA's), (54, 32285), (72, 32222), (74, 32198), (76, 32189), (82, 32141), (83, 32126),

Gene: HaveUMetTed_51 Start: 32190, Stop: 31942, Start Num: 36

Candidate Starts for HaveUMetTed_51:

(Start: 36 @32190 has 81 MA's), (54, 32136), (55, 32133), (72, 32073), (74, 32049), (76, 32040), (82, 31992), (83, 31977),

Gene: Heathen_46 Start: 31467, Stop: 31192, Start Num: 38

Candidate Starts for Heathen_46:

(Start: 38 @31467 has 33 MA's), (76, 31290), (82, 31242),

Gene: HelDan_46 Start: 31719, Stop: 31444, Start Num: 38

Candidate Starts for HelDan_46:

(Start: 38 @31719 has 33 MA's), (76, 31542), (82, 31494),

Gene: Heliosoles_49 Start: 32211, Stop: 31963, Start Num: 36

Candidate Starts for Heliosoles_49:

(Start: 36 @32211 has 81 MA's), (54, 32157), (55, 32154), (72, 32094), (74, 32070), (76, 32061), (82, 32013), (83, 31998),

Gene: Hercules11_50 Start: 32317, Stop: 32069, Start Num: 36

Candidate Starts for Hercules11_50:

(Start: 36 @32317 has 81 MA's), (54, 32263), (72, 32200), (74, 32176), (76, 32167), (82, 32119), (83, 32104),

Gene: Hiro_37 Start: 28654, Stop: 28382, Start Num: 37

Candidate Starts for Hiro_37:

(Start: 37 @28654 has 35 MA's), (56, 28588), (75, 28483), (81, 28438), (84, 28402),

Gene: Hookmount_46 Start: 32082, Stop: 31807, Start Num: 38
Candidate Starts for Hookmount_46:
(13, 32172), (15, 32163), (Start: 38 @32082 has 33 MA's), (76, 31905),

Gene: HuhtaEnerson15_41 Start: 31246, Stop: 30983, Start Num: 46
Candidate Starts for HuhtaEnerson15_41:
(Start: 46 @31246 has 33 MA's), (Start: 49 @31237 has 3 MA's), (Start: 60 @31195 has 2 MA's), (67, 31165), (73, 31111), (79, 31078), (82, 31045),

Gene: Idleandcovert_47 Start: 31838, Stop: 31563, Start Num: 38
Candidate Starts for Idleandcovert_47:
(Start: 38 @31838 has 33 MA's), (76, 31661), (82, 31613),

Gene: Isca_45 Start: 31262, Stop: 30987, Start Num: 38
Candidate Starts for Isca_45:
(15, 31349), (30, 31292), (Start: 38 @31262 has 33 MA's), (67, 31157), (76, 31085), (82, 31037),

Gene: JF2_46 Start: 31013, Stop: 30738, Start Num: 38
Candidate Starts for JF2_46:
(15, 31100), (30, 31043), (Start: 38 @31013 has 33 MA's), (67, 30908), (76, 30836), (82, 30788),

Gene: JF4_46 Start: 31013, Stop: 30738, Start Num: 38
Candidate Starts for JF4_46:
(15, 31100), (30, 31043), (Start: 38 @31013 has 33 MA's), (67, 30908), (76, 30836), (82, 30788),

Gene: JHC117_50 Start: 32307, Stop: 32059, Start Num: 36
Candidate Starts for JHC117_50:
(Start: 36 @32307 has 81 MA's), (54, 32253), (72, 32190), (74, 32166), (76, 32157), (82, 32109), (83, 32094),

Gene: JSwag_48 Start: 30329, Stop: 30036, Start Num: 34
Candidate Starts for JSwag_48:
(Start: 34 @30329 has 20 MA's), (66, 30212), (79, 30119),

Gene: Jabiru_41 Start: 30865, Stop: 30614, Start Num: 46
Candidate Starts for Jabiru_41:
(Start: 17 @30955 has 1 MA's), (20, 30943), (Start: 46 @30865 has 33 MA's), (Start: 49 @30856 has 3 MA's), (Start: 60 @30814 has 2 MA's), (67, 30784), (73, 30730), (79, 30697), (82, 30664),

Gene: JenCasNa_51 Start: 32308, Stop: 32060, Start Num: 36
Candidate Starts for JenCasNa_51:
(Start: 36 @32308 has 81 MA's), (54, 32254), (72, 32191), (74, 32167), (76, 32158), (82, 32110), (83, 32095),

Gene: JeppNRM_51 Start: 32209, Stop: 31961, Start Num: 36
Candidate Starts for JeppNRM_51:
(Start: 36 @32209 has 81 MA's), (54, 32155), (55, 32152), (72, 32092), (74, 32068), (76, 32059), (82, 32011), (83, 31996),

Gene: Jester_37 Start: 28330, Stop: 28058, Start Num: 37
Candidate Starts for Jester_37:
(Start: 37 @28330 has 35 MA's), (56, 28264), (81, 28114), (84, 28078),

Gene: Jobu08_49 Start: 32140, Stop: 31892, Start Num: 36

Candidate Starts for Jobu08_49:

(Start: 36 @32140 has 81 MA's), (54, 32086), (55, 32083), (72, 32023), (74, 31999), (76, 31990), (82, 31942), (83, 31927),

Gene: Journey13_41 Start: 30529, Stop: 30176, Start Num: 17

Candidate Starts for Journey13_41:

(Start: 17 @30529 has 1 MA's), (18, 30526), (21, 30508), (30, 30484), (79, 30256),

Gene: Jovo_40 Start: 31287, Stop: 31024, Start Num: 46

Candidate Starts for Jovo_40:

(Start: 46 @31287 has 33 MA's), (Start: 49 @31278 has 3 MA's), (51, 31269), (57, 31248), (Start: 60 @31236 has 2 MA's), (73, 31152), (79, 31119), (82, 31086),

Gene: KADY_50 Start: 32339, Stop: 32091, Start Num: 36

Candidate Starts for KADY_50:

(Start: 36 @32339 has 81 MA's), (54, 32285), (72, 32222), (74, 32198), (76, 32189), (82, 32141), (83, 32126),

Gene: Kachowdy_46 Start: 31719, Stop: 31444, Start Num: 38

Candidate Starts for Kachowdy_46:

(Start: 38 @31719 has 33 MA's), (76, 31542), (82, 31494),

Gene: Kalb97_51 Start: 32207, Stop: 31959, Start Num: 36

Candidate Starts for Kalb97_51:

(Start: 36 @32207 has 81 MA's), (54, 32153), (55, 32150), (72, 32090), (74, 32066), (76, 32057), (82, 32009), (83, 31994),

Gene: Kalnoky_51 Start: 32205, Stop: 31957, Start Num: 36

Candidate Starts for Kalnoky_51:

(Start: 36 @32205 has 81 MA's), (54, 32151), (55, 32148), (72, 32088), (74, 32064), (76, 32055), (82, 32007), (83, 31992),

Gene: KatherineG_51 Start: 31068, Stop: 30775, Start Num: 34

Candidate Starts for KatherineG_51:

(Start: 34 @31068 has 20 MA's), (66, 30951), (79, 30858),

Gene: Kratark_46 Start: 32040, Stop: 31717, Start Num: 26

Candidate Starts for Kratark_46:

(Start: 26 @32040 has 6 MA's), (32, 32025), (67, 31887), (79, 31800), (82, 31767),

Gene: Krishelle_37 Start: 28678, Stop: 28406, Start Num: 37

Candidate Starts for Krishelle_37:

(Start: 28 @28711 has 1 MA's), (Start: 37 @28678 has 35 MA's), (61, 28591), (81, 28462), (84, 28426),

Gene: Kristoff_45 Start: 31839, Stop: 31501, Start Num: 25

Candidate Starts for Kristoff_45:

(3, 31983), (9, 31932), (Start: 25 @31839 has 10 MA's), (65, 31689), (67, 31674), (77, 31596),

Gene: LBerry_51 Start: 32312, Stop: 32064, Start Num: 36

Candidate Starts for LBerry_51:

(Start: 36 @32312 has 81 MA's), (54, 32258), (72, 32195), (74, 32171), (76, 32162), (82, 32114), (83, 32099),

Gene: Lambert1_46 Start: 32081, Stop: 31806, Start Num: 38
Candidate Starts for Lambert1_46:
(13, 32171), (15, 32162), (Start: 38 @32081 has 33 MA's), (76, 31904),

Gene: LarryKay_50 Start: 32341, Stop: 32093, Start Num: 36
Candidate Starts for LarryKay_50:
(Start: 36 @32341 has 81 MA's), (54, 32287), (72, 32224), (74, 32200), (76, 32191), (82, 32143), (83, 32128),

Gene: LastResort_49 Start: 30629, Stop: 30336, Start Num: 34
Candidate Starts for LastResort_49:
(Start: 34 @30629 has 20 MA's), (66, 30512), (79, 30419),

Gene: Lev2_40 Start: 30919, Stop: 30656, Start Num: 46
Candidate Starts for Lev2_40:
(Start: 46 @30919 has 33 MA's), (Start: 49 @30910 has 3 MA's), (51, 30901), (57, 30880), (Start: 60 @30868 has 2 MA's), (73, 30784), (79, 30751), (82, 30718),

Gene: Lilith_51 Start: 32301, Stop: 32053, Start Num: 36
Candidate Starts for Lilith_51:
(Start: 36 @32301 has 81 MA's), (54, 32247), (72, 32184), (74, 32160), (76, 32151), (82, 32103), (83, 32088),

Gene: Lillie_37 Start: 28394, Stop: 28122, Start Num: 37
Candidate Starts for Lillie_37:
(Start: 37 @28394 has 35 MA's), (56, 28328), (81, 28178), (84, 28142),

Gene: LittleCherry_41 Start: 31256, Stop: 30993, Start Num: 46
Candidate Starts for LittleCherry_41:
(Start: 46 @31256 has 33 MA's), (Start: 49 @31247 has 3 MA's), (Start: 60 @31205 has 2 MA's), (67, 31175), (73, 31121), (79, 31088), (82, 31055),

Gene: Looper_50 Start: 30606, Stop: 30313, Start Num: 34
Candidate Starts for Looper_50:
(Start: 34 @30606 has 20 MA's), (66, 30489), (79, 30396),

Gene: Louie6_49 Start: 32340, Stop: 32092, Start Num: 36
Candidate Starts for Louie6_49:
(Start: 36 @32340 has 81 MA's), (54, 32286), (72, 32223), (74, 32199), (76, 32190), (82, 32142), (83, 32127),

Gene: Lowa_50 Start: 32300, Stop: 32052, Start Num: 36
Candidate Starts for Lowa_50:
(Start: 36 @32300 has 81 MA's), (54, 32246), (72, 32183), (74, 32159), (76, 32150), (82, 32102), (83, 32087),

Gene: LugYA_53 Start: 32309, Stop: 32061, Start Num: 36
Candidate Starts for LugYA_53:
(Start: 36 @32309 has 81 MA's), (54, 32255), (72, 32192), (74, 32168), (76, 32159), (82, 32111), (83, 32096),

Gene: MA5_46 Start: 31164, Stop: 30889, Start Num: 38

Candidate Starts for MA5_46:

(11, 31281), (14, 31257), (15, 31251), (19, 31224), (Start: 38 @31164 has 33 MA's), (63, 31074), (76, 30987), (82, 30939),

Gene: MK4_46 Start: 31247, Stop: 30972, Start Num: 38

Candidate Starts for MK4_46:

(15, 31334), (30, 31277), (Start: 38 @31247 has 33 MA's), (67, 31142), (76, 31070), (82, 31022),

Gene: MadMarie_50 Start: 32310, Stop: 32062, Start Num: 36

Candidate Starts for MadMarie_50:

(Start: 36 @32310 has 81 MA's), (54, 32256), (72, 32193), (74, 32169), (76, 32160), (82, 32112), (83, 32097),

Gene: Mainiac_50 Start: 32302, Stop: 32054, Start Num: 36

Candidate Starts for Mainiac_50:

(Start: 36 @32302 has 81 MA's), (54, 32248), (72, 32185), (74, 32161), (76, 32152), (82, 32104), (83, 32089),

Gene: Malinsilva_52 Start: 32300, Stop: 32052, Start Num: 36

Candidate Starts for Malinsilva_52:

(Start: 36 @32300 has 81 MA's), (54, 32246), (72, 32183), (74, 32159), (76, 32150), (82, 32102), (83, 32087),

Gene: Manu_50 Start: 32208, Stop: 31960, Start Num: 36

Candidate Starts for Manu_50:

(Start: 36 @32208 has 81 MA's), (54, 32154), (55, 32151), (72, 32091), (74, 32067), (76, 32058), (82, 32010), (83, 31995),

Gene: MarQuardt_50 Start: 32310, Stop: 32062, Start Num: 36

Candidate Starts for MarQuardt_50:

(Start: 36 @32310 has 81 MA's), (54, 32256), (72, 32193), (74, 32169), (76, 32160), (82, 32112), (83, 32097),

Gene: Marchesa_46 Start: 31717, Stop: 31442, Start Num: 38

Candidate Starts for Marchesa_46:

(Start: 38 @31717 has 33 MA's), (76, 31540), (82, 31492),

Gene: Margo_46 Start: 32107, Stop: 31832, Start Num: 38

Candidate Starts for Margo_46:

(13, 32197), (15, 32188), (Start: 38 @32107 has 33 MA's), (76, 31930),

Gene: Marie_50 Start: 32308, Stop: 32060, Start Num: 36

Candidate Starts for Marie_50:

(Start: 36 @32308 has 81 MA's), (54, 32254), (72, 32191), (74, 32167), (76, 32158), (82, 32110), (83, 32095),

Gene: Marius_51 Start: 32205, Stop: 31957, Start Num: 36

Candidate Starts for Marius_51:

(Start: 36 @32205 has 81 MA's), (54, 32151), (55, 32148), (72, 32088), (74, 32064), (76, 32055), (82, 32007), (83, 31992),

Gene: MarysWell_39 Start: 31119, Stop: 30856, Start Num: 46

Candidate Starts for MarysWell_39:

(Start: 46 @31119 has 33 MA's), (Start: 49 @31110 has 3 MA's), (51, 31101), (Start: 60 @31068 has 2 MA's), (73, 30984), (79, 30951), (82, 30918),

Gene: Methuselah_47 Start: 32335, Stop: 32087, Start Num: 36

Candidate Starts for Methuselah_47:

(Start: 36 @32335 has 81 MA's), (54, 32281), (72, 32218), (74, 32194), (76, 32185), (82, 32137), (83, 32122),

Gene: Micasa_42 Start: 31386, Stop: 31123, Start Num: 46

Candidate Starts for Micasa_42:

(Start: 46 @31386 has 33 MA's), (Start: 49 @31377 has 3 MA's), (Start: 60 @31335 has 2 MA's), (67, 31305), (73, 31251), (79, 31218), (82, 31185),

Gene: Microwolf_50 Start: 32309, Stop: 32061, Start Num: 36

Candidate Starts for Microwolf_50:

(Start: 36 @32309 has 81 MA's), (54, 32255), (72, 32192), (74, 32168), (76, 32159), (82, 32111), (83, 32096),

Gene: Midas2_40 Start: 31053, Stop: 30841, Start Num: 60

Candidate Starts for Midas2_40:

(Start: 46 @31104 has 33 MA's), (Start: 49 @31095 has 3 MA's), (51, 31086), (57, 31065), (Start: 60 @31053 has 2 MA's), (73, 30969), (79, 30936), (82, 30903),

Gene: Milcery_41 Start: 31223, Stop: 30960, Start Num: 46

Candidate Starts for Milcery_41:

(Start: 46 @31223 has 33 MA's), (Start: 49 @31214 has 3 MA's), (Start: 60 @31172 has 2 MA's), (67, 31142), (73, 31088), (79, 31055), (82, 31022),

Gene: MinecraftSteve_50 Start: 30593, Stop: 30300, Start Num: 34

Candidate Starts for MinecraftSteve_50:

(Start: 34 @30593 has 20 MA's), (66, 30476), (79, 30383),

Gene: Misomonster_51 Start: 32338, Stop: 32090, Start Num: 36

Candidate Starts for Misomonster_51:

(Start: 36 @32338 has 81 MA's), (54, 32284), (72, 32221), (74, 32197), (76, 32188), (82, 32140), (83, 32125),

Gene: MoneyMay_50 Start: 32308, Stop: 32060, Start Num: 36

Candidate Starts for MoneyMay_50:

(Start: 36 @32308 has 81 MA's), (54, 32254), (72, 32191), (74, 32167), (76, 32158), (82, 32110), (83, 32095),

Gene: MuchMore_53 Start: 32300, Stop: 32052, Start Num: 36

Candidate Starts for MuchMore_53:

(Start: 36 @32300 has 81 MA's), (54, 32246), (72, 32183), (74, 32159), (76, 32150), (82, 32102), (83, 32087),

Gene: MyraDee_42 Start: 29297, Stop: 29043, Start Num: 38

Candidate Starts for MyraDee_42:

(Start: 38 @29297 has 33 MA's), (76, 29138), (82, 29090),

Gene: Naca_42 Start: 31534, Stop: 31271, Start Num: 46

Candidate Starts for Naca_42:

(Start: 46 @31534 has 33 MA's), (Start: 49 @31525 has 3 MA's), (55, 31504), (Start: 60 @31483 has 2 MA's), (79, 31366), (81, 31342),

Gene: Naiad_37 Start: 28407, Stop: 28135, Start Num: 37

Candidate Starts for Naiad_37:

(Start: 37 @28407 has 35 MA's), (81, 28191), (84, 28155),

Gene: Nancinator_37 Start: 28395, Stop: 28123, Start Num: 37

Candidate Starts for Nancinator_37:

(Start: 37 @28395 has 35 MA's), (56, 28329), (81, 28179), (84, 28143),

Gene: Natosaleda_37 Start: 28394, Stop: 28122, Start Num: 37

Candidate Starts for Natosaleda_37:

(Start: 37 @28394 has 35 MA's), (56, 28328), (81, 28178), (84, 28142),

Gene: NearlyHeadless_44 Start: 30949, Stop: 30662, Start Num: 35

Candidate Starts for NearlyHeadless_44:

(Start: 35 @30949 has 11 MA's), (Start: 38 @30940 has 33 MA's), (53, 30898), (82, 30712),

Gene: Nebulosus_49 Start: 30625, Stop: 30332, Start Num: 34

Candidate Starts for Nebulosus_49:

(Start: 34 @30625 has 20 MA's), (66, 30508), (79, 30415),

Gene: Noella_46 Start: 32082, Stop: 31807, Start Num: 38

Candidate Starts for Noella_46:

(13, 32172), (15, 32163), (Start: 38 @32082 has 33 MA's), (76, 31905),

Gene: Norbert_45 Start: 32081, Stop: 31806, Start Num: 38

Candidate Starts for Norbert_45:

(13, 32171), (15, 32162), (Start: 38 @32081 has 33 MA's), (76, 31904),

Gene: OKCentral2016_44 Start: 31174, Stop: 30836, Start Num: 25

Candidate Starts for OKCentral2016_44:

(3, 31318), (9, 31267), (Start: 25 @31174 has 10 MA's), (Start: 42 @31114 has 1 MA's), (65, 31024), (67, 31009), (77, 30931),

Gene: OlanP_49 Start: 32378, Stop: 32130, Start Num: 36

Candidate Starts for OlanP_49:

(Start: 36 @32378 has 81 MA's), (50, 32336), (54, 32324), (55, 32321), (72, 32261), (74, 32237), (76, 32228), (82, 32180), (83, 32165),

Gene: Ollie_50 Start: 32179, Stop: 31931, Start Num: 36

Candidate Starts for Ollie_50:

(Start: 36 @32179 has 81 MA's), (54, 32125), (72, 32062), (74, 32038), (76, 32029), (82, 31981), (83, 31966),

Gene: Oofda_50 Start: 30484, Stop: 30191, Start Num: 34

Candidate Starts for Oofda_50:

(Start: 34 @30484 has 20 MA's), (66, 30367), (79, 30274),

Gene: P28Green_51 Start: 32311, Stop: 32063, Start Num: 36

Candidate Starts for P28Green_51:

(Start: 36 @32311 has 81 MA's), (54, 32257), (72, 32194), (74, 32170), (76, 32161), (82, 32113), (83, 32098),

Gene: PGHhamlin_52 Start: 32300, Stop: 32052, Start Num: 36

Candidate Starts for PGHhamlin_52:

(Start: 36 @32300 has 81 MA's), (54, 32246), (72, 32183), (74, 32159), (76, 32150), (82, 32102), (83, 32087),

Gene: Panamaxus_44 Start: 32081, Stop: 31806, Start Num: 38

Candidate Starts for Panamaxus_44:

(13, 32171), (15, 32162), (Start: 38 @32081 has 33 MA's), (76, 31904),

Gene: Partridge_37 Start: 28510, Stop: 28205, Start Num: 28

Candidate Starts for Partridge_37:

(Start: 28 @28510 has 1 MA's), (Start: 37 @28477 has 35 MA's), (61, 28390), (81, 28261), (84, 28225),

Gene: Pawn_50 Start: 32212, Stop: 31964, Start Num: 36

Candidate Starts for Pawn_50:

(Start: 36 @32212 has 81 MA's), (54, 32158), (55, 32155), (72, 32095), (74, 32071), (76, 32062), (82, 32014), (83, 31999),

Gene: Pembroke_50 Start: 32309, Stop: 32061, Start Num: 36

Candidate Starts for Pembroke_50:

(Start: 36 @32309 has 81 MA's), (54, 32255), (72, 32192), (74, 32168), (76, 32159), (82, 32111), (83, 32096),

Gene: Penny1_51 Start: 32312, Stop: 32064, Start Num: 36

Candidate Starts for Penny1_51:

(Start: 36 @32312 has 81 MA's), (47, 32282), (54, 32258), (72, 32195), (74, 32171), (76, 32162), (82, 32114), (83, 32099),

Gene: PetterN_44 Start: 30975, Stop: 30712, Start Num: 46

Candidate Starts for PetterN_44:

(20, 31053), (Start: 46 @30975 has 33 MA's), (Start: 49 @30966 has 3 MA's), (55, 30945), (Start: 60 @30924 has 2 MA's), (79, 30807), (81, 30783),

Gene: PhailMary_36 Start: 28716, Stop: 28444, Start Num: 37

Candidate Starts for PhailMary_36:

(Start: 37 @28716 has 35 MA's), (56, 28650), (81, 28500), (84, 28464),

Gene: Phantastic_47 Start: 31457, Stop: 31182, Start Num: 38

Candidate Starts for Phantastic_47:

(15, 31538), (30, 31481), (Start: 38 @31457 has 33 MA's), (48, 31430), (76, 31280), (82, 31232),

Gene: Phighter1804_46 Start: 31943, Stop: 31620, Start Num: 26

Candidate Starts for Phighter1804_46:

(Start: 26 @31943 has 6 MA's), (32, 31928), (67, 31790), (72, 31751), (79, 31703), (82, 31670),

Gene: Phillis_46 Start: 31492, Stop: 31232, Start Num: 35

Candidate Starts for Phillis_46:

(Start: 35 @31492 has 11 MA's), (Start: 38 @31483 has 33 MA's), (78, 31330), (82, 31291),

Gene: PhishRPhriends_48 Start: 31386, Stop: 31138, Start Num: 36

Candidate Starts for PhishRPhriends_48:

(Start: 36 @31386 has 81 MA's), (54, 31332), (55, 31329), (72, 31269), (74, 31245), (76, 31236), (82, 31188), (83, 31173),

Gene: Phlei_36 Start: 31613, Stop: 31308, Start Num: 29

Candidate Starts for Phlei_36:

(24, 31628), (29, 31613), (Start: 46 @31559 has 33 MA's), (52, 31541), (64, 31487), (85, 31319),

Gene: Phlorence_39 Start: 30794, Stop: 30531, Start Num: 46

Candidate Starts for Phlorence_39:

(Start: 46 @30794 has 33 MA's), (Start: 49 @30785 has 3 MA's), (51, 30776), (57, 30755), (Start: 60 @30743 has 2 MA's), (73, 30659), (79, 30626), (82, 30593),

Gene: Phoebe_51 Start: 32301, Stop: 32053, Start Num: 36

Candidate Starts for Phoebe_51:

(Start: 36 @32301 has 81 MA's), (54, 32247), (72, 32184), (74, 32160), (76, 32151), (82, 32103), (83, 32088),

Gene: Phoxy_50 Start: 32336, Stop: 32088, Start Num: 36

Candidate Starts for Phoxy_50:

(Start: 36 @32336 has 81 MA's), (54, 32282), (72, 32219), (74, 32195), (76, 32186), (82, 32138), (83, 32123),

Gene: Phrankenstein_37 Start: 28340, Stop: 28068, Start Num: 37

Candidate Starts for Phrankenstein_37:

(Start: 37 @28340 has 35 MA's), (56, 28274), (81, 28124), (84, 28088),

Gene: Phranny_51 Start: 32194, Stop: 31946, Start Num: 36

Candidate Starts for Phranny_51:

(Start: 36 @32194 has 81 MA's), (54, 32140), (55, 32137), (72, 32077), (74, 32053), (76, 32044), (82, 31996), (83, 31981),

Gene: PickleBack_40 Start: 30920, Stop: 30657, Start Num: 46

Candidate Starts for PickleBack_40:

(Start: 46 @30920 has 33 MA's), (Start: 49 @30911 has 3 MA's), (51, 30902), (57, 30881), (Start: 60 @30869 has 2 MA's), (73, 30785), (79, 30752), (82, 30719),

Gene: Pistachio_48 Start: 31385, Stop: 31110, Start Num: 38

Candidate Starts for Pistachio_48:

(Start: 38 @31385 has 33 MA's), (76, 31208), (82, 31160),

Gene: Pocahontas_46 Start: 32078, Stop: 31803, Start Num: 38

Candidate Starts for Pocahontas_46:

(13, 32168), (15, 32159), (Start: 38 @32078 has 33 MA's), (76, 31901),

Gene: Popcicle_46 Start: 32078, Stop: 31803, Start Num: 38

Candidate Starts for Popcicle_46:

(13, 32168), (15, 32159), (Start: 38 @32078 has 33 MA's), (76, 31901),

Gene: PotatoSplit_52 Start: 32312, Stop: 32064, Start Num: 36

Candidate Starts for PotatoSplit_52:

(Start: 36 @32312 has 81 MA's), (54, 32258), (72, 32195), (74, 32171), (76, 32162), (82, 32114), (83, 32099),

Gene: Prin Ashe11_41 Start: 31086, Stop: 30823, Start Num: 46

Candidate Starts for Prin Ashe11_41:

(Start: 46 @31086 has 33 MA's), (Start: 49 @31077 has 3 MA's), (Start: 60 @31035 has 2 MA's), (67, 31005), (73, 30951), (79, 30918), (82, 30885),

Gene: Puppy_48 Start: 31458, Stop: 31183, Start Num: 38

Candidate Starts for Puppy_48:

(Start: 38 @31458 has 33 MA's), (76, 31281), (82, 31233),

Gene: PurpleHaze_50 Start: 32207, Stop: 31959, Start Num: 36

Candidate Starts for PurpleHaze_50:

(Start: 36 @32207 has 81 MA's), (54, 32153), (55, 32150), (72, 32090), (74, 32066), (76, 32057), (82, 32009), (83, 31994),

Gene: QuinnKiro_45 Start: 32081, Stop: 31806, Start Num: 38

Candidate Starts for QuinnKiro_45:

(13, 32171), (15, 32162), (Start: 38 @32081 has 33 MA's), (76, 31904),

Gene: RER2_30 Start: 25266, Stop: 24994, Start Num: 37

Candidate Starts for RER2_30:

(Start: 37 @25266 has 35 MA's), (56, 25200), (81, 25050), (84, 25014),

Gene: RGL3_32 Start: 26225, Stop: 25980, Start Num: 39

Candidate Starts for RGL3_32:

(39, 26225), (53, 26183), (81, 26036), (84, 26000), (85, 25991),

Gene: Rasputin_37 Start: 28364, Stop: 28092, Start Num: 37

Candidate Starts for Rasputin_37:

(Start: 37 @28364 has 35 MA's), (56, 28298), (81, 28148), (84, 28112),

Gene: ReMo_49 Start: 30626, Stop: 30333, Start Num: 34

Candidate Starts for ReMo_49:

(Start: 34 @30626 has 20 MA's), (66, 30509), (79, 30416),

Gene: Reba_50 Start: 31867, Stop: 31619, Start Num: 36

Candidate Starts for Reba_50:

(Start: 36 @31867 has 81 MA's), (54, 31813), (55, 31810), (72, 31750), (74, 31726), (76, 31717), (82, 31669), (83, 31654),

Gene: Rebeuca_45 Start: 31840, Stop: 31502, Start Num: 25

Candidate Starts for Rebeuca_45:

(3, 31984), (9, 31933), (Start: 25 @31840 has 10 MA's), (65, 31690), (67, 31675), (77, 31597),

Gene: Remus_49 Start: 30309, Stop: 30016, Start Num: 34

Candidate Starts for Remus_49:

(Start: 34 @30309 has 20 MA's), (66, 30192), (79, 30099),

Gene: ResDef_46 Start: 32081, Stop: 31806, Start Num: 38

Candidate Starts for ResDef_46:

(13, 32171), (15, 32162), (Start: 38 @32081 has 33 MA's), (76, 31904),

Gene: RexFury_37 Start: 28425, Stop: 28153, Start Num: 37

Candidate Starts for RexFury_37:
(Start: 37 @28425 has 35 MA's), (56, 28359), (81, 28209), (84, 28173),

Gene: Rhodalysa_37 Start: 28394, Stop: 28122, Start Num: 37
Candidate Starts for Rhodalysa_37:
(Start: 37 @28394 has 35 MA's), (56, 28328), (81, 28178), (84, 28142),

Gene: RhynO_46 Start: 31639, Stop: 31301, Start Num: 25
Candidate Starts for RhynO_46:
(Start: 25 @31639 has 10 MA's), (Start: 42 @31579 has 1 MA's), (67, 31474), (77, 31396),

Gene: Roary_45 Start: 31159, Stop: 30863, Start Num: 35
Candidate Starts for Roary_45:
(16, 31225), (Start: 35 @31159 has 11 MA's), (53, 31108), (82, 30922),

Gene: Rockstar_46 Start: 31256, Stop: 30981, Start Num: 38
Candidate Starts for Rockstar_46:
(15, 31343), (30, 31286), (Start: 38 @31256 has 33 MA's), (67, 31151), (76, 31079), (82, 31031),

Gene: Rosalind_48 Start: 30512, Stop: 30219, Start Num: 34
Candidate Starts for Rosalind_48:
(Start: 34 @30512 has 20 MA's), (66, 30395), (79, 30302),

Gene: Rowdy_49 Start: 31547, Stop: 31209, Start Num: 25
Candidate Starts for Rowdy_49:
(Start: 25 @31547 has 10 MA's), (Start: 42 @31487 has 1 MA's), (67, 31382), (77, 31304),

Gene: Rummer_49 Start: 32339, Stop: 32091, Start Num: 36
Candidate Starts for Rummer_49:
(Start: 36 @32339 has 81 MA's), (54, 32285), (72, 32222), (74, 32198), (76, 32189), (82, 32141), (83, 32126),

Gene: Sabia_50 Start: 32302, Stop: 32054, Start Num: 36
Candidate Starts for Sabia_50:
(Start: 36 @32302 has 81 MA's), (54, 32248), (72, 32185), (74, 32161), (76, 32152), (82, 32104), (83, 32089),

Gene: Sabinator_49 Start: 32307, Stop: 32059, Start Num: 36
Candidate Starts for Sabinator_49:
(Start: 36 @32307 has 81 MA's), (54, 32253), (72, 32190), (74, 32166), (76, 32157), (82, 32109), (83, 32094),

Gene: Saintus_39 Start: 27880, Stop: 27593, Start Num: 35
Candidate Starts for Saintus_39:
(Start: 35 @27880 has 11 MA's), (Start: 38 @27871 has 33 MA's), (53, 27829), (82, 27643),

Gene: SaturnRing_47 Start: 31838, Stop: 31563, Start Num: 38
Candidate Starts for SaturnRing_47:
(Start: 38 @31838 has 33 MA's), (76, 31661), (82, 31613),

Gene: Scorpia_44 Start: 31052, Stop: 30789, Start Num: 46
Candidate Starts for Scorpia_44:

(20, 31130), (Start: 46 @31052 has 33 MA's), (Start: 49 @31043 has 3 MA's), (55, 31022), (Start: 60 @31001 has 2 MA's), (79, 30884), (81, 30860),

Gene: Scout_46 Start: 30966, Stop: 30691, Start Num: 38

Candidate Starts for Scout_46:

(Start: 38 @30966 has 33 MA's), (76, 30789), (82, 30741),

Gene: Shapes_49 Start: 31547, Stop: 31209, Start Num: 25

Candidate Starts for Shapes_49:

(Start: 25 @31547 has 10 MA's), (Start: 42 @31487 has 1 MA's), (67, 31382), (77, 31304),

Gene: ShayRa_51 Start: 30830, Stop: 30537, Start Num: 34

Candidate Starts for ShayRa_51:

(Start: 34 @30830 has 20 MA's), (66, 30713), (79, 30620),

Gene: Sheen_47 Start: 34109, Stop: 33846, Start Num: 42

Candidate Starts for Sheen_47:

(Start: 42 @34109 has 1 MA's), (55, 34067), (57, 34058), (68, 34010), (71, 33998), (77, 33941), (84, 33869),

Gene: Shuman_37 Start: 28407, Stop: 28135, Start Num: 37

Candidate Starts for Shuman_37:

(Start: 37 @28407 has 35 MA's), (56, 28341), (81, 28191), (84, 28155),

Gene: Shygu2_45 Start: 31853, Stop: 31530, Start Num: 26

Candidate Starts for Shygu2_45:

(Start: 26 @31853 has 6 MA's), (67, 31700), (72, 31661), (82, 31580),

Gene: Smeadley_45 Start: 31325, Stop: 31029, Start Num: 35

Candidate Starts for Smeadley_45:

(16, 31391), (Start: 35 @31325 has 11 MA's), (53, 31274), (82, 31088),

Gene: Snickers_50 Start: 32282, Stop: 32034, Start Num: 36

Candidate Starts for Snickers_50:

(Start: 36 @32282 has 81 MA's), (54, 32228), (72, 32165), (74, 32141), (76, 32132), (82, 32084), (83, 32069),

Gene: SoYo_50 Start: 32220, Stop: 31972, Start Num: 36

Candidate Starts for SoYo_50:

(Start: 36 @32220 has 81 MA's), (54, 32166), (72, 32103), (74, 32079), (76, 32070), (82, 32022), (83, 32007),

Gene: SoilDragon_50 Start: 31756, Stop: 31508, Start Num: 36

Candidate Starts for SoilDragon_50:

(Start: 36 @31756 has 81 MA's), (54, 31702), (55, 31699), (72, 31639), (74, 31615), (76, 31606), (82, 31558), (83, 31543),

Gene: Soshari_52 Start: 32335, Stop: 32087, Start Num: 36

Candidate Starts for Soshari_52:

(Start: 36 @32335 has 81 MA's), (54, 32281), (72, 32218), (74, 32194), (76, 32185), (82, 32137), (83, 32122),

Gene: Soups_50 Start: 30829, Stop: 30536, Start Num: 34

Candidate Starts for Soups_50:
(Start: 34 @30829 has 20 MA's), (66, 30712), (79, 30619),

Gene: Spike509_50 Start: 32336, Stop: 32088, Start Num: 36
Candidate Starts for Spike509_50:
(Start: 36 @32336 has 81 MA's), (54, 32282), (72, 32219), (74, 32195), (76, 32186), (82, 32138), (83, 32123),

Gene: StCroix_37 Start: 28407, Stop: 28135, Start Num: 37
Candidate Starts for StCroix_37:
(Start: 37 @28407 has 35 MA's), (81, 28191), (84, 28155),

Gene: Stagni_50 Start: 32311, Stop: 32063, Start Num: 36
Candidate Starts for Stagni_50:
(Start: 36 @32311 has 81 MA's), (54, 32257), (72, 32194), (74, 32170), (76, 32161), (82, 32113), (83, 32098),

Gene: Stasia_45 Start: 31752, Stop: 31450, Start Num: 26
Candidate Starts for Stasia_45:
(Start: 26 @31752 has 6 MA's), (79, 31533),

Gene: StepMih_50 Start: 32302, Stop: 32054, Start Num: 36
Candidate Starts for StepMih_50:
(Start: 36 @32302 has 81 MA's), (54, 32248), (72, 32185), (74, 32161), (76, 32152), (82, 32104), (83, 32089),

Gene: Stephig9_45 Start: 31163, Stop: 30888, Start Num: 35
Candidate Starts for Stephig9_45:
(16, 31229), (Start: 35 @31163 has 11 MA's), (Start: 38 @31154 has 33 MA's), (50, 31118), (78, 30986), (80, 30965),

Gene: Strosahl_49 Start: 30309, Stop: 30016, Start Num: 34
Candidate Starts for Strosahl_49:
(Start: 34 @30309 has 20 MA's), (66, 30192), (79, 30099),

Gene: Swann_37 Start: 28394, Stop: 28122, Start Num: 37
Candidate Starts for Swann_37:
(Start: 37 @28394 has 35 MA's), (56, 28328), (81, 28178), (84, 28142),

Gene: Swirley_43 Start: 31587, Stop: 31324, Start Num: 46
Candidate Starts for Swirley_43:
(Start: 46 @31587 has 33 MA's), (Start: 49 @31578 has 3 MA's), (Start: 60 @31536 has 2 MA's), (67, 31506), (73, 31452), (79, 31419), (82, 31386),

Gene: Switzerland_49 Start: 30692, Stop: 30399, Start Num: 34
Candidate Starts for Switzerland_49:
(Start: 34 @30692 has 20 MA's), (66, 30575), (79, 30482),

Gene: SydNat_42 Start: 31777, Stop: 31514, Start Num: 46
Candidate Starts for SydNat_42:
(Start: 46 @31777 has 33 MA's), (Start: 49 @31768 has 3 MA's), (Start: 60 @31726 has 2 MA's), (67, 31696), (73, 31642), (79, 31609), (82, 31576),

Gene: TNguyen7_47 Start: 31805, Stop: 31530, Start Num: 38
Candidate Starts for TNguyen7_47:
(Start: 38 @31805 has 33 MA's), (76, 31628), (82, 31580),

Gene: TWAMP_37 Start: 28394, Stop: 28122, Start Num: 37
Candidate Starts for TWAMP_37:
(Start: 37 @28394 has 35 MA's), (56, 28328), (81, 28178), (84, 28142),

Gene: Takoda_37 Start: 28367, Stop: 28095, Start Num: 37
Candidate Starts for Takoda_37:
(Start: 37 @28367 has 35 MA's), (56, 28301), (81, 28151), (84, 28115),

Gene: Tarynearal_39 Start: 31029, Stop: 30766, Start Num: 46
Candidate Starts for Tarynearal_39:
(Start: 46 @31029 has 33 MA's), (Start: 49 @31020 has 3 MA's), (Start: 60 @30978 has 2 MA's), (67, 30948), (73, 30894), (79, 30861), (82, 30828),

Gene: Taurus_51 Start: 32308, Stop: 32060, Start Num: 36
Candidate Starts for Taurus_51:
(Start: 36 @32308 has 81 MA's), (54, 32254), (72, 32191), (74, 32167), (76, 32158), (82, 32110), (83, 32095),

Gene: Texage_45 Start: 32082, Stop: 31807, Start Num: 38
Candidate Starts for Texage_45:
(13, 32172), (15, 32163), (Start: 38 @32082 has 33 MA's), (76, 31905),

Gene: Theia_38 Start: 31043, Stop: 30789, Start Num: 49
Candidate Starts for Theia_38:
(Start: 46 @31052 has 33 MA's), (Start: 49 @31043 has 3 MA's), (51, 31034), (57, 31013), (Start: 60 @31001 has 2 MA's), (73, 30917), (79, 30884), (82, 30851),

Gene: Tiffany_50 Start: 32194, Stop: 31946, Start Num: 36
Candidate Starts for Tiffany_50:
(Start: 36 @32194 has 81 MA's), (54, 32140), (72, 32077), (74, 32053), (76, 32044), (82, 31996), (83, 31981),

Gene: Tiger_39 Start: 30576, Stop: 30322, Start Num: 49
Candidate Starts for Tiger_39:
(Start: 46 @30585 has 33 MA's), (Start: 49 @30576 has 3 MA's), (51, 30567), (57, 30546), (Start: 60 @30534 has 2 MA's), (73, 30450), (79, 30417), (82, 30384),

Gene: Timshel_45 Start: 33822, Stop: 33541, Start Num: 40
Candidate Starts for Timshel_45:
(10, 33957), (Start: 40 @33822 has 3 MA's), (59, 33759), (69, 33702), (72, 33672), (84, 33564),

Gene: TinyPebbles_49 Start: 32341, Stop: 32093, Start Num: 36
Candidate Starts for TinyPebbles_49:
(Start: 36 @32341 has 81 MA's), (54, 32287), (72, 32224), (74, 32200), (76, 32191), (82, 32143), (83, 32128),

Gene: Todacoro_46 Start: 32081, Stop: 31806, Start Num: 38
Candidate Starts for Todacoro_46:
(13, 32171), (15, 32162), (Start: 38 @32081 has 33 MA's), (76, 31904),

Gene: Topanga_43 Start: 31489, Stop: 31151, Start Num: 25

Candidate Starts for Topanga_43:

(3, 31633), (9, 31582), (Start: 25 @31489 has 10 MA's), (65, 31339), (67, 31324), (77, 31246),

Gene: Toro_49 Start: 34178, Stop: 33957, Start Num: 55

Candidate Starts for Toro_49:

(Start: 42 @34220 has 1 MA's), (55, 34178), (57, 34169), (68, 34121), (71, 34109), (77, 34052), (84, 33980),

Gene: Twigg_41 Start: 31175, Stop: 30963, Start Num: 60

Candidate Starts for Twigg_41:

(Start: 46 @31226 has 33 MA's), (Start: 49 @31217 has 3 MA's), (51, 31208), (57, 31187), (Start: 60 @31175 has 2 MA's), (73, 31091), (79, 31058), (82, 31025),

Gene: Twister_43 Start: 31400, Stop: 31062, Start Num: 25

Candidate Starts for Twister_43:

(3, 31544), (9, 31493), (Start: 25 @31400 has 10 MA's), (65, 31250), (67, 31235), (77, 31157),

Gene: UhSalsa_37 Start: 28395, Stop: 28123, Start Num: 37

Candidate Starts for UhSalsa_37:

(Start: 37 @28395 has 35 MA's), (56, 28329), (81, 28179), (84, 28143),

Gene: UnionJack_41 Start: 30553, Stop: 30302, Start Num: 46

Candidate Starts for UnionJack_41:

(Start: 17 @30643 has 1 MA's), (20, 30631), (Start: 46 @30553 has 33 MA's), (Start: 49 @30544 has 3 MA's), (Start: 60 @30502 has 2 MA's), (67, 30472), (73, 30418), (79, 30385), (82, 30352),

Gene: Veracruz_45 Start: 32081, Stop: 31806, Start Num: 38

Candidate Starts for Veracruz_45:

(13, 32171), (15, 32162), (Start: 38 @32081 has 33 MA's), (76, 31904),

Gene: Vix_50 Start: 32391, Stop: 32143, Start Num: 36

Candidate Starts for Vix_50:

(Start: 36 @32391 has 81 MA's), (54, 32337), (72, 32274), (74, 32250), (76, 32241), (82, 32193), (83, 32178),

Gene: Waits_49 Start: 30481, Stop: 30188, Start Num: 34

Candidate Starts for Waits_49:

(Start: 34 @30481 has 20 MA's), (66, 30364), (79, 30271),

Gene: WalterMcMickey_43 Start: 31400, Stop: 31062, Start Num: 25

Candidate Starts for WalterMcMickey_43:

(3, 31544), (9, 31493), (Start: 25 @31400 has 10 MA's), (65, 31250), (67, 31235), (77, 31157),

Gene: Warrior24_51 Start: 30688, Stop: 30395, Start Num: 34

Candidate Starts for Warrior24_51:

(Start: 34 @30688 has 20 MA's), (66, 30571), (79, 30478),

Gene: Watson_50 Start: 32300, Stop: 32052, Start Num: 36

Candidate Starts for Watson_50:

(Start: 36 @32300 has 81 MA's), (54, 32246), (72, 32183), (74, 32159), (76, 32150), (82, 32102), (83, 32087),

Gene: Wooldri_52 Start: 32220, Stop: 31972, Start Num: 36

Candidate Starts for Wooldri_52:

(Start: 36 @32220 has 81 MA's), (54, 32166), (72, 32103), (74, 32079), (76, 32070), (82, 32022), (83, 32007),

Gene: Yogi_37 Start: 28368, Stop: 28096, Start Num: 37

Candidate Starts for Yogi_37:

(Start: 37 @28368 has 35 MA's), (56, 28302), (81, 28152), (84, 28116),

Gene: Yoncess_37 Start: 28369, Stop: 28097, Start Num: 37

Candidate Starts for Yoncess_37:

(Start: 37 @28369 has 35 MA's), (56, 28303), (81, 28153), (84, 28117),

Gene: Zetzy_49 Start: 31871, Stop: 31623, Start Num: 36

Candidate Starts for Zetzy_49:

(Start: 36 @31871 has 81 MA's), (54, 31817), (63, 31784), (72, 31754), (74, 31730), (76, 31721), (82, 31673), (83, 31658),

Gene: Zolita_41 Start: 31781, Stop: 31518, Start Num: 46

Candidate Starts for Zolita_41:

(Start: 46 @31781 has 33 MA's), (Start: 49 @31772 has 3 MA's), (Start: 60 @31730 has 2 MA's), (67, 31700), (73, 31646), (79, 31613), (82, 31580),