





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 303159 Report

This analysis was run 06/08/26 on database version 649.

Pham number 303159 has 151 members, 1 are drafts.

Phages represented in each track:

- Track 1 : Pari_63, Squee_61
- Track 2 : Gompeii16_60, Bircsak_60, Buttons_58, Nhonho_59, Crispicious1_58, Papez_63, Snazzy_59, Edtherson_60, KSSJEB_61, JackSparrow_63, Ruotula_63, Traft412_63, Mryolo_57
- Track 3 : Niza_62
- Track 4 : Fushigi_57, PattyP_63, Licorice_62, Zephyr_62, Abrogate_600, Killigrew_60, Marcell_57, Sibs6_63, Kanely_62, PhrostyMug_61, Trouble_62, Altman_63, Briton15_65, Pippin_61, Watermelon_61, Marchy_55, Aeneas_64, Ciao_59, Seabiscuit_64, McGuire_62, HanShotFirst_62
- Track 5 : Ashballer_63
- Track 6 : MrGordo_60, Big3_59
- Track 7 : JuliaChild_62, Sagefire_63, Swole_62, GrecoEtereo_60, GMonster_58, QTRLifeCrisis_61, Tote_57, RidgeCB_60, Doom_59
- Track 8 : JC27_63, Forsytheast_59, Moose_59, SwissCheese_61, Bruns_59, Seanderson_60
- Track 9 : Pinto_61, Rufus_62
- Track 10 : Gwendoluna_63
- Track 11 : Ichabod_64, HermioneGrange_62, MPlant7149_60
- Track 12 : PherrisBueller_59, GageAP_61, Dreamboat_61, Scowl_61, Makemake_62, Graduation_64
- Track 13 : Pepe_57, SkiPole_65
- Track 14 : Hope4ever_62
- Track 15 : BeesKnees_63, PacerPaul_60, Gandalf20_63, Zeeculate_58, Marsha_60, Francis47_59, ConceptII_63, Nerujay_63
- Track 16 : DreamCatcher_64
- Track 17 : SarFire_57, Thor_57
- Track 18 : Pelly_61, Dexes_60
- Track 19 : Kugel_60
- Track 20 : BPBiebs31_62
- Track 21 : MilleFeuille_61, Paraselene_58
- Track 22 : BluSpix_58, Eyeball_62, IgnatiusPatJac_60
- Track 23 : CactusRose_59
- Track 24 : Solon_58, Lesedi_56
- Track 25 : Petp2012_62
- Track 26 : Fajezeel_61, Acme_62, Greg_61
- Track 27 : Tripl3t_63
- Track 28 : KyMonks1A_64

- Track 29 : Magnar_58
- Track 30 : Sunshine924_63
- Track 31 : BarrowTuph_61, Applejack_57
- Track 32 : Jorgensen_61
- Track 33 : Petruchio_59
- Track 34 : Noxious_60, KikiBouba_60
- Track 35 : Switzer_61
- Track 36 : Ringer_60
- Track 37 : Bob3_60, Barriga_62
- Track 38 : Michley_63
- Track 39 : Turj99_59
- Track 40 : PowerRanger_58, Euphoria_58
- Track 41 : Zeuska_60, Teodoridan_58
- Track 42 : Froghopper_58
- Track 43 : Corvo_61
- Track 44 : Paphu_60, Tasp14_64, Parliament_62
- Track 45 : Alvin_59
- Track 46 : Carlyle_60
- Track 47 : Dynamix_62
- Track 48 : EnzoK_60
- Track 49 : TheloniousMonk_61
- Track 50 : Idleandcovert_62, TNguyen7_63, BlueBird_64, MA5_62, Giroux_64
- Track 51 : Phantastic_63, JF2_60, JF4_60, Rockstar_60, MK4_62
- Track 52 : Margo_61, Panamaxus_59, Lambert1_61, QuinnKiro_60, Caviar_61, Pocahontas_61, Todacoro_61, Popcicle_61, Hookmount_61, Noella_61
- Track 53 : BabyRay_62
- Track 54 : Heathen_62
- Track 55 : PP_62
- Track 56 : Sheen_61

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

The start number called the most often in the published annotations is 30, it was called in 135 of the 150 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abrogate_600, Acme_62, Aeneas_64, Altman_63, Alvin_59, Applejack_57, BPBiebs31_62, BabyRay_62, Barriga_62, BarrowTuph_61, BeesKnees_63, Big3_59, Bircsak_60, BluSpix_58, BlueBird_64, Bob3_60, Briton15_65, Bruns_59, Buttons_58, CactusRose_59, Carlyle_60, Ciao_59, Conceptll_63, Corvo_61, Crispicous1_58, Dexes_60, Doom_59, DreamCatcher_64, Dreamboat_61, Dynamix_62, Edtherson_60, Euphoria_58, Eyeball_62, Fajezeel_61, Forsytheast_59, Francis47_59, Froghopper_58, Fushigi_57, GMonster_58, GageAP_61, Gandalf20_63, Giroux_64, Gompeii16_60, Graduation_64, GrecoEtereo_60, Greg_61, Gwendoluna_63, HanShotFirst_62, Heathen_62, HermioneGrange_62, Hope4ever_62, Ichabod_64, Idleandcovert_62, IgnatiusPatJac_60, JC27_63, JF2_60, JF4_60, JackSparrow_63, Jorgensen_61, JuliaChild_62, KSSJEB_61, Kanely_62, KikiBouba_60, Killigrew_60, Kugel_60, KyMonks1A_64, Lesedi_56, Licorice_62, MA5_62, MK4_62, MPlant7149_60, Magnar_58, Makemake_62, Marcell_57, Marchy_55, Marsha_60, McGuire_62, Michley_63, MilleFeuille_61,

Moose_59, MrGordo_60, Mryolo_57, Nerujay_63, Nhonho_59, Niza_62, Noxious_60, PP_62, PacerPaul_60, Papez_63, Paphu_60, Paraselene_58, Pari_63, Parliament_62, PattyP_63, Pelly_61, Petp2012_62, Petruccio_59, Phantastic_63, PherrisBueller_59, PhrostyMug_61, Pinto_61, Pippin_61, PowerRanger_58, QTRLifeCrisis_61, RidgeCB_60, Ringer_60, Rockstar_60, Rufus_62, Ruotula_63, Sagefire_63, SarFire_57, Scowl_61, Seabiscuit_64, Seanderson_60, Sheen_61, Sibs6_63, Snazzy_59, Solon_58, Squee_61, Sunshine924_63, SwissCheese_61, Switzer_61, Swole_62, TNguyen7_63, Tasp14_64, TheloniousMonk_61, Thor_57, Tote_57, Traft412_63, Tripl3t_63, Trouble_62, Turj99_59, Watermelon_61, Zeeculate_58, Zephyr_62,

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

- Ashballer_63, EnzoK_60, Pepe_57, SkiPole_65, Teodoridan_58, Zeuska_60,

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

- Caviar_61, Hookmount_61, Lambert1_61, Margo_61, Noella_61, Panamaxus_59, Pocahontas_61, Popcicle_61, QuinnKiro_60, Todacoro_61,

Summary by start number:

Start 29:

- Found in 24 of 151 (15.9%) of genes in pham
- Manual Annotations of this start: 5 of 150
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Ashballer_63 (A1), EnzoK_60 (A1), Pepe_57 (A1), SkiPole_65 (A1), Teodoridan_58 (A1), Zeuska_60 (A1),

Start 30:

- Found in 141 of 151 (93.4%) of genes in pham
- Manual Annotations of this start: 135 of 150
- Called 95.7% of time when present
- Phage (with cluster) where this start called: Abrogate_600 (A1), Acme_62 (A1), Aeneas_64 (A1), Altman_63 (A1), Alvin_59 (A1), Applejack_57 (A1), BPBiebs31_62 (A1), BabyRay_62 (A3), Barriga_62 (A1), BarrowTuph_61 (A1), BeesKnees_63 (A1), Big3_59 (A1), Bircsak_60 (A1), BluSpix_58 (A1), BlueBird_64 (A3), Bob3_60 (A1), Briton15_65 (A1), Brunns_59 (A1), Buttons_58 (A1), CactusRose_59 (A1), Carlyle_60 (A1), Ciao_59 (A1), Conceptll_63 (A1), Corvo_61 (A1), Crispicous1_58 (A1), Dexes_60 (A1), Doom_59 (A1), DreamCatcher_64 (A1), Dreamboat_61 (A1), Dynamix_62 (A1), Edtherson_60 (A1), Euphoria_58 (A1), Eyeball_62 (A1), Fajezeel_61 (A1), Forsytheast_59 (A1), Francis47_59 (A1), Froghopper_58 (A1), Fushigi_57 (A1), GMonster_58 (A1), GageAP_61 (A1), Gandalf20_63 (A1), Giroux_64 (A3), Gompeii16_60 (A1), Graduation_64 (A1), GrecoEtereo_60 (A1), Greg_61 (A1), Gwendoluna_63 (A1), HanShotFirst_62 (A1), Heathen_62 (A3), HermioneGrange_62 (A1), Hope4ever_62 (A1), Ichabod_64 (A1), Idleandcovert_62 (A3), IgnatiusPatJac_60 (A1), JC27_63 (A1), JF2_60 (A3), JF4_60 (A3), JackSparrow_63 (A1), Jorgensen_61 (A1), JuliaChild_62 (A1), KSSJEB_61 (A1), Kanely_62 (A1), KikiBouba_60 (A1), Killigrew_60 (A1), Kugel_60 (A1), KyMonks1A_64 (A1), Lesedi_56 (A1), Licorice_62 (A1), MA5_62 (A3), MK4_62 (A3), MPlant7149_60 (A1), Magnar_58 (A1), Makemake_62 (A1), Marcell_57 (A1), Marchy_55 (A1), Marsha_60 (A1), McGuire_62 (A1), Michley_63 (A1), MilleFeuille_61 (A1), Moose_59 (A1), MrGordo_60 (A1), Mryolo_57 (A1), Nerujay_63 (A1), Nhonho_59 (A1), Niza_62 (A1), Noxious_60 (A1), PP_62 (A7), PacerPaul_60 (A1), Papez_63 (A1), Paphu_60 (A1), Paraselene_58 (A1), Pari_63 (A1), Parliament_62

(A1), PattyP_63 (A1), Pelly_61 (A1), Petp2012_62 (A1), Petruccio_59 (A1), Phantastic_63 (A3), PherrisBueller_59 (A1), PhrostyMug_61 (A1), Pinto_61 (A1), Pippin_61 (A1), PowerRanger_58 (A1), QTRlifeCrisis_61 (A1), RidgeCB_60 (A1), Ringer_60 (A1), Rockstar_60 (A3), Rufus_62 (A1), Ruotula_63 (A1), Sagefire_63 (A1), SarFire_57 (A1), Scowl_61 (A1), Seabiscuit_64 (A1), Seanderson_60 (A1), Sheen_61 (A7), Sibs6_63 (A1), Snazzy_59 (A1), Solon_58 (A1), Squee_61 (A1), Sunshine924_63 (A1), SwissCheese_61 (A1), Switzer_61 (A1), Swole_62 (A1), TNguyen7_63 (A3), Tasp14_64 (A1), TheloniousMonk_61 (A1), Thor_57 (A1), Tote_57 (A1), Traft412_63 (A1), Tripl3t_63 (A1), Trouble_62 (A1), Turj99_59 (A1), Watermelon_61 (A1), Zeeculate_58 (A1), Zephyr_62 (A1),

Start 32:

- Found in 10 of 151 (6.6%) of genes in pham
- Manual Annotations of this start: 10 of 150
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Caviar_61 (A3), Hookmount_61 (A3), Lambert1_61 (A3), Margo_61 (A3), Noella_61 (A3), Panamaxus_59 (A3), Pocahontas_61 (A3), Popcicle_61 (A3), QuinnKiro_60 (A3), Todacoro_61 (A3),

Summary by clusters:

There are 3 clusters represented in this pham: A1, A3, A7,

Info for manual annotations of cluster A1:

- Start number 29 was manually annotated 5 times for cluster A1.
- Start number 30 was manually annotated 121 times for cluster A1.

Info for manual annotations of cluster A3:

- Start number 30 was manually annotated 12 times for cluster A3.
- Start number 32 was manually annotated 10 times for cluster A3.

Info for manual annotations of cluster A7:

- Start number 30 was manually annotated 2 times for cluster A7.

Gene Information:

Gene: Abrogate_600 Start: 42412, Stop: 42326, Start Num: 30

Candidate Starts for Abrogate_600:

(Start: 30 @42412 has 135 MA's), (42, 42343),

Gene: Acme_62 Start: 40967, Stop: 40881, Start Num: 30

Candidate Starts for Acme_62:

(16, 41027), (Start: 30 @40967 has 135 MA's), (40, 40910),

Gene: Aeneas_64 Start: 42831, Stop: 42745, Start Num: 30

Candidate Starts for Aeneas_64:

(Start: 30 @42831 has 135 MA's), (42, 42762),

Gene: Altman_63 Start: 41128, Stop: 41042, Start Num: 30

Candidate Starts for Altman_63:

(Start: 30 @41128 has 135 MA's), (42, 41059),

Gene: Alvin_59 Start: 40335, Stop: 40249, Start Num: 30

Candidate Starts for Alvin_59:

(Start: 30 @40335 has 135 MA's), (37, 40290),

Gene: Applejack_57 Start: 38781, Stop: 38695, Start Num: 30

Candidate Starts for Applejack_57:

(Start: 29 @38793 has 5 MA's), (Start: 30 @38781 has 135 MA's), (42, 38712),

Gene: Ashballe_63 Start: 41368, Stop: 41270, Start Num: 29

Candidate Starts for Ashballe_63:

(Start: 29 @41368 has 5 MA's), (Start: 30 @41356 has 135 MA's), (42, 41287),

Gene: BPBiabs31_62 Start: 41315, Stop: 41229, Start Num: 30

Candidate Starts for BPBiabs31_62:

(16, 41375), (Start: 30 @41315 has 135 MA's), (37, 41270),

Gene: BabyRay_62 Start: 39415, Stop: 39332, Start Num: 30

Candidate Starts for BabyRay_62:

(Start: 30 @39415 has 135 MA's), (33, 39388), (39, 39364),

Gene: Barriga_62 Start: 39540, Stop: 39454, Start Num: 30

Candidate Starts for Barriga_62:

(3, 39726), (Start: 30 @39540 has 135 MA's),

Gene: BarrowTuph_61 Start: 40453, Stop: 40367, Start Num: 30

Candidate Starts for BarrowTuph_61:

(Start: 29 @40465 has 5 MA's), (Start: 30 @40453 has 135 MA's), (42, 40384),

Gene: BeesKnees_63 Start: 40393, Stop: 40307, Start Num: 30

Candidate Starts for BeesKnees_63:

(Start: 30 @40393 has 135 MA's), (40, 40336), (42, 40324),

Gene: Big3_59 Start: 41093, Stop: 41007, Start Num: 30

Candidate Starts for Big3_59:

(4, 41264), (Start: 30 @41093 has 135 MA's),

Gene: Bircsak_60 Start: 42546, Stop: 42460, Start Num: 30

Candidate Starts for Bircsak_60:

(Start: 30 @42546 has 135 MA's),

Gene: BluSpix_58 Start: 36376, Stop: 36290, Start Num: 30

Candidate Starts for BluSpix_58:

(Start: 29 @36388 has 5 MA's), (Start: 30 @36376 has 135 MA's),

Gene: BlueBird_64 Start: 39459, Stop: 39376, Start Num: 30

Candidate Starts for BlueBird_64:

(Start: 30 @39459 has 135 MA's), (33, 39432),

Gene: Bob3_60 Start: 40364, Stop: 40278, Start Num: 30

Candidate Starts for Bob3_60:

(3, 40550), (Start: 30 @40364 has 135 MA's),

Gene: Briton15_65 Start: 42585, Stop: 42499, Start Num: 30
Candidate Starts for Briton15_65:
(Start: 30 @42585 has 135 MA's), (42, 42516),

Gene: Bruns_59 Start: 39510, Stop: 39424, Start Num: 30
Candidate Starts for Bruns_59:
(Start: 29 @39522 has 5 MA's), (Start: 30 @39510 has 135 MA's), (42, 39441),

Gene: Buttons_58 Start: 38459, Stop: 38373, Start Num: 30
Candidate Starts for Buttons_58:
(Start: 30 @38459 has 135 MA's),

Gene: CactusRose_59 Start: 40649, Stop: 40563, Start Num: 30
Candidate Starts for CactusRose_59:
(22, 40679), (25, 40673), (Start: 30 @40649 has 135 MA's),

Gene: Carlyle_60 Start: 39245, Stop: 39159, Start Num: 30
Candidate Starts for Carlyle_60:
(12, 39329), (Start: 30 @39245 has 135 MA's), (37, 39200),

Gene: Caviar_61 Start: 39418, Stop: 39335, Start Num: 32
Candidate Starts for Caviar_61:
(Start: 32 @39418 has 10 MA's), (36, 39403), (38, 39391),

Gene: Ciao_59 Start: 39917, Stop: 39831, Start Num: 30
Candidate Starts for Ciao_59:
(Start: 30 @39917 has 135 MA's), (42, 39848),

Gene: ConceptII_63 Start: 41983, Stop: 41897, Start Num: 30
Candidate Starts for ConceptII_63:
(Start: 30 @41983 has 135 MA's), (40, 41926), (42, 41914),

Gene: Corvo_61 Start: 41462, Stop: 41376, Start Num: 30
Candidate Starts for Corvo_61:
(Start: 30 @41462 has 135 MA's), (37, 41417),

Gene: Crispicous1_58 Start: 39702, Stop: 39616, Start Num: 30
Candidate Starts for Crispicous1_58:
(Start: 30 @39702 has 135 MA's),

Gene: Dexes_60 Start: 40821, Stop: 40735, Start Num: 30
Candidate Starts for Dexes_60:
(Start: 30 @40821 has 135 MA's), (40, 40764),

Gene: Doom_59 Start: 41395, Stop: 41309, Start Num: 30
Candidate Starts for Doom_59:
(Start: 30 @41395 has 135 MA's), (40, 41338),

Gene: DreamCatcher_64 Start: 41458, Stop: 41372, Start Num: 30
Candidate Starts for DreamCatcher_64:
(2, 41659), (17, 41515), (18, 41512), (Start: 30 @41458 has 135 MA's), (40, 41401),

Gene: Dreamboat_61 Start: 39688, Stop: 39602, Start Num: 30

Candidate Starts for Dreamboat_61:
(Start: 30 @39688 has 135 MA's), (37, 39643),

Gene: Dynamix_62 Start: 40205, Stop: 40119, Start Num: 30
Candidate Starts for Dynamix_62:
(6, 40343), (Start: 30 @40205 has 135 MA's),

Gene: Edtherson_60 Start: 41389, Stop: 41303, Start Num: 30
Candidate Starts for Edtherson_60:
(Start: 30 @41389 has 135 MA's),

Gene: EnzoK_60 Start: 38092, Stop: 37994, Start Num: 29
Candidate Starts for EnzoK_60:
(Start: 29 @38092 has 5 MA's), (Start: 30 @38080 has 135 MA's),

Gene: Euphoria_58 Start: 40112, Stop: 40026, Start Num: 30
Candidate Starts for Euphoria_58:
(Start: 30 @40112 has 135 MA's), (40, 40055),

Gene: Eyeball_62 Start: 41559, Stop: 41473, Start Num: 30
Candidate Starts for Eyeball_62:
(Start: 29 @41571 has 5 MA's), (Start: 30 @41559 has 135 MA's),

Gene: Fajezeel_61 Start: 40257, Stop: 40171, Start Num: 30
Candidate Starts for Fajezeel_61:
(16, 40317), (Start: 30 @40257 has 135 MA's), (40, 40200),

Gene: Forsytheast_59 Start: 39678, Stop: 39592, Start Num: 30
Candidate Starts for Forsytheast_59:
(Start: 29 @39690 has 5 MA's), (Start: 30 @39678 has 135 MA's), (42, 39609),

Gene: Francis47_59 Start: 41463, Stop: 41377, Start Num: 30
Candidate Starts for Francis47_59:
(Start: 30 @41463 has 135 MA's), (40, 41406), (42, 41394),

Gene: Froghopper_58 Start: 39483, Stop: 39397, Start Num: 30
Candidate Starts for Froghopper_58:
(24, 39513), (28, 39504), (Start: 30 @39483 has 135 MA's), (40, 39426),

Gene: Fushigi_57 Start: 38939, Stop: 38853, Start Num: 30
Candidate Starts for Fushigi_57:
(Start: 30 @38939 has 135 MA's), (42, 38870),

Gene: GMonster_58 Start: 40388, Stop: 40302, Start Num: 30
Candidate Starts for GMonster_58:
(Start: 30 @40388 has 135 MA's), (40, 40331),

Gene: GageAP_61 Start: 41027, Stop: 40941, Start Num: 30
Candidate Starts for GageAP_61:
(Start: 30 @41027 has 135 MA's), (37, 40982),

Gene: Gandalf20_63 Start: 42121, Stop: 42035, Start Num: 30
Candidate Starts for Gandalf20_63:

(Start: 30 @42121 has 135 MA's), (40, 42064), (42, 42052),

Gene: Giroux_64 Start: 39458, Stop: 39375, Start Num: 30

Candidate Starts for Giroux_64:

(Start: 30 @39458 has 135 MA's), (33, 39431),

Gene: Gompeii16_60 Start: 42547, Stop: 42461, Start Num: 30

Candidate Starts for Gompeii16_60:

(Start: 30 @42547 has 135 MA's),

Gene: Graduation_64 Start: 41860, Stop: 41774, Start Num: 30

Candidate Starts for Graduation_64:

(Start: 30 @41860 has 135 MA's), (37, 41815),

Gene: GrecoEtereo_60 Start: 40025, Stop: 39939, Start Num: 30

Candidate Starts for GrecoEtereo_60:

(Start: 30 @40025 has 135 MA's), (40, 39968),

Gene: Greg_61 Start: 40257, Stop: 40171, Start Num: 30

Candidate Starts for Greg_61:

(16, 40317), (Start: 30 @40257 has 135 MA's), (40, 40200),

Gene: Gwendoluna_63 Start: 42377, Stop: 42291, Start Num: 30

Candidate Starts for Gwendoluna_63:

(20, 42422), (Start: 29 @42389 has 5 MA's), (Start: 30 @42377 has 135 MA's),

Gene: HanShotFirst_62 Start: 42534, Stop: 42448, Start Num: 30

Candidate Starts for HanShotFirst_62:

(Start: 30 @42534 has 135 MA's), (42, 42465),

Gene: Heathen_62 Start: 39153, Stop: 39070, Start Num: 30

Candidate Starts for Heathen_62:

(15, 39222), (Start: 30 @39153 has 135 MA's), (33, 39126), (37, 39108),

Gene: HermioneGrange_62 Start: 41601, Stop: 41515, Start Num: 30

Candidate Starts for HermioneGrange_62:

(Start: 30 @41601 has 135 MA's), (37, 41556),

Gene: Hookmount_61 Start: 39419, Stop: 39336, Start Num: 32

Candidate Starts for Hookmount_61:

(Start: 32 @39419 has 10 MA's), (36, 39404), (38, 39392),

Gene: Hope4ever_62 Start: 41007, Stop: 40921, Start Num: 30

Candidate Starts for Hope4ever_62:

(1, 41217), (2, 41208), (17, 41064), (18, 41061), (Start: 30 @41007 has 135 MA's), (42, 40938),

Gene: Ichabod_64 Start: 41728, Stop: 41642, Start Num: 30

Candidate Starts for Ichabod_64:

(Start: 30 @41728 has 135 MA's), (37, 41683),

Gene: Idleandcovert_62 Start: 39459, Stop: 39376, Start Num: 30

Candidate Starts for Idleandcovert_62:

(Start: 30 @39459 has 135 MA's), (33, 39432),

Gene: IgnatiusPatJac_60 Start: 40321, Stop: 40235, Start Num: 30
Candidate Starts for IgnatiusPatJac_60:
(Start: 29 @40333 has 5 MA's), (Start: 30 @40321 has 135 MA's),

Gene: JC27_63 Start: 41045, Stop: 40959, Start Num: 30
Candidate Starts for JC27_63:
(Start: 29 @41057 has 5 MA's), (Start: 30 @41045 has 135 MA's), (42, 40976),

Gene: JF2_60 Start: 37619, Stop: 37536, Start Num: 30
Candidate Starts for JF2_60:
(Start: 30 @37619 has 135 MA's), (33, 37592), (35, 37586),

Gene: JF4_60 Start: 37619, Stop: 37536, Start Num: 30
Candidate Starts for JF4_60:
(Start: 30 @37619 has 135 MA's), (33, 37592), (35, 37586),

Gene: JackSparrow_63 Start: 40917, Stop: 40831, Start Num: 30
Candidate Starts for JackSparrow_63:
(Start: 30 @40917 has 135 MA's),

Gene: Jorgensen_61 Start: 40326, Stop: 40240, Start Num: 30
Candidate Starts for Jorgensen_61:
(11, 40416), (13, 40398), (19, 40371), (23, 40356), (Start: 30 @40326 has 135 MA's),

Gene: JuliaChild_62 Start: 41341, Stop: 41255, Start Num: 30
Candidate Starts for JuliaChild_62:
(Start: 30 @41341 has 135 MA's), (40, 41284),

Gene: KSSJEB_61 Start: 40326, Stop: 40240, Start Num: 30
Candidate Starts for KSSJEB_61:
(Start: 30 @40326 has 135 MA's),

Gene: Kanely_62 Start: 40905, Stop: 40819, Start Num: 30
Candidate Starts for Kanely_62:
(Start: 30 @40905 has 135 MA's), (42, 40836),

Gene: KikiBouba_60 Start: 40507, Stop: 40421, Start Num: 30
Candidate Starts for KikiBouba_60:
(Start: 30 @40507 has 135 MA's), (39, 40456), (42, 40438),

Gene: Killigrew_60 Start: 41100, Stop: 41014, Start Num: 30
Candidate Starts for Killigrew_60:
(Start: 30 @41100 has 135 MA's), (42, 41031),

Gene: Kugel_60 Start: 41153, Stop: 41067, Start Num: 30
Candidate Starts for Kugel_60:
(8, 41258), (10, 41249), (Start: 29 @41165 has 5 MA's), (Start: 30 @41153 has 135 MA's),

Gene: KyMonks1A_64 Start: 40904, Stop: 40818, Start Num: 30
Candidate Starts for KyMonks1A_64:
(2, 41105), (17, 40961), (18, 40958), (Start: 30 @40904 has 135 MA's),

Gene: Lambert1_61 Start: 39418, Stop: 39335, Start Num: 32
Candidate Starts for Lambert1_61:
(Start: 32 @39418 has 10 MA's), (36, 39403), (38, 39391),

Gene: Lesedi_56 Start: 38890, Stop: 38804, Start Num: 30
Candidate Starts for Lesedi_56:
(16, 38950), (Start: 30 @38890 has 135 MA's),

Gene: Licorice_62 Start: 42392, Stop: 42306, Start Num: 30
Candidate Starts for Licorice_62:
(Start: 30 @42392 has 135 MA's), (42, 42323),

Gene: MA5_62 Start: 38819, Stop: 38736, Start Num: 30
Candidate Starts for MA5_62:
(Start: 30 @38819 has 135 MA's), (33, 38792),

Gene: MK4_62 Start: 38903, Stop: 38820, Start Num: 30
Candidate Starts for MK4_62:
(Start: 30 @38903 has 135 MA's), (33, 38876), (35, 38870),

Gene: MPlant7149_60 Start: 39489, Stop: 39403, Start Num: 30
Candidate Starts for MPlant7149_60:
(Start: 30 @39489 has 135 MA's), (37, 39444),

Gene: Magnar_58 Start: 40505, Stop: 40419, Start Num: 30
Candidate Starts for Magnar_58:
(21, 40544), (27, 40526), (Start: 30 @40505 has 135 MA's),

Gene: Makemake_62 Start: 41962, Stop: 41876, Start Num: 30
Candidate Starts for Makemake_62:
(Start: 30 @41962 has 135 MA's), (37, 41917),

Gene: Marcell_57 Start: 39512, Stop: 39426, Start Num: 30
Candidate Starts for Marcell_57:
(Start: 30 @39512 has 135 MA's), (42, 39443),

Gene: Marchy_55 Start: 37600, Stop: 37514, Start Num: 30
Candidate Starts for Marchy_55:
(Start: 30 @37600 has 135 MA's), (42, 37531),

Gene: Margo_61 Start: 39444, Stop: 39361, Start Num: 32
Candidate Starts for Margo_61:
(Start: 32 @39444 has 10 MA's), (36, 39429), (38, 39417),

Gene: Marsha_60 Start: 41987, Stop: 41901, Start Num: 30
Candidate Starts for Marsha_60:
(Start: 30 @41987 has 135 MA's), (40, 41930), (42, 41918),

Gene: McGuire_62 Start: 40165, Stop: 40079, Start Num: 30
Candidate Starts for McGuire_62:
(Start: 30 @40165 has 135 MA's), (42, 40096),

Gene: Michley_63 Start: 41093, Stop: 41007, Start Num: 30

Candidate Starts for Michley_63:
(Start: 29 @41105 has 5 MA's), (Start: 30 @41093 has 135 MA's),

Gene: MilleFeuille_61 Start: 40336, Stop: 40250, Start Num: 30
Candidate Starts for MilleFeuille_61:
(Start: 30 @40336 has 135 MA's), (37, 40291),

Gene: Moose_59 Start: 39678, Stop: 39592, Start Num: 30
Candidate Starts for Moose_59:
(Start: 29 @39690 has 5 MA's), (Start: 30 @39678 has 135 MA's), (42, 39609),

Gene: MrGordo_60 Start: 40333, Stop: 40247, Start Num: 30
Candidate Starts for MrGordo_60:
(4, 40504), (Start: 30 @40333 has 135 MA's),

Gene: Mryolo_57 Start: 40375, Stop: 40289, Start Num: 30
Candidate Starts for Mryolo_57:
(Start: 30 @40375 has 135 MA's),

Gene: Nerujay_63 Start: 42121, Stop: 42035, Start Num: 30
Candidate Starts for Nerujay_63:
(Start: 30 @42121 has 135 MA's), (40, 42064), (42, 42052),

Gene: Nhonho_59 Start: 41389, Stop: 41303, Start Num: 30
Candidate Starts for Nhonho_59:
(Start: 30 @41389 has 135 MA's),

Gene: Niza_62 Start: 41988, Stop: 41902, Start Num: 30
Candidate Starts for Niza_62:
(Start: 30 @41988 has 135 MA's), (40, 41931), (42, 41919),

Gene: Noella_61 Start: 39419, Stop: 39336, Start Num: 32
Candidate Starts for Noella_61:
(Start: 32 @39419 has 10 MA's), (36, 39404), (38, 39392),

Gene: Noxious_60 Start: 40698, Stop: 40612, Start Num: 30
Candidate Starts for Noxious_60:
(Start: 30 @40698 has 135 MA's), (39, 40647), (42, 40629),

Gene: PP_62 Start: 43352, Stop: 43272, Start Num: 30
Candidate Starts for PP_62:
(15, 43421), (Start: 30 @43352 has 135 MA's), (34, 43322), (35, 43319), (42, 43283),

Gene: PacerPaul_60 Start: 40830, Stop: 40744, Start Num: 30
Candidate Starts for PacerPaul_60:
(Start: 30 @40830 has 135 MA's), (40, 40773), (42, 40761),

Gene: Panamaxus_59 Start: 39418, Stop: 39335, Start Num: 32
Candidate Starts for Panamaxus_59:
(Start: 32 @39418 has 10 MA's), (36, 39403), (38, 39391),

Gene: Papez_63 Start: 42358, Stop: 42272, Start Num: 30
Candidate Starts for Papez_63:

(Start: 30 @42358 has 135 MA's),

Gene: Paphu_60 Start: 41264, Stop: 41178, Start Num: 30

Candidate Starts for Paphu_60:

(20, 41309), (27, 41288), (Start: 29 @41276 has 5 MA's), (Start: 30 @41264 has 135 MA's),

Gene: Paraselene_58 Start: 40895, Stop: 40809, Start Num: 30

Candidate Starts for Paraselene_58:

(Start: 30 @40895 has 135 MA's), (37, 40850),

Gene: Pari_63 Start: 40356, Stop: 40270, Start Num: 30

Candidate Starts for Pari_63:

(Start: 30 @40356 has 135 MA's), (37, 40311),

Gene: Parliament_62 Start: 43056, Stop: 42970, Start Num: 30

Candidate Starts for Parliament_62:

(20, 43101), (27, 43080), (Start: 29 @43068 has 5 MA's), (Start: 30 @43056 has 135 MA's),

Gene: PattyP_63 Start: 42048, Stop: 41962, Start Num: 30

Candidate Starts for PattyP_63:

(Start: 30 @42048 has 135 MA's), (42, 41979),

Gene: Pelly_61 Start: 42060, Stop: 41974, Start Num: 30

Candidate Starts for Pelly_61:

(Start: 30 @42060 has 135 MA's), (40, 42003),

Gene: Pepe_57 Start: 39121, Stop: 39023, Start Num: 29

Candidate Starts for Pepe_57:

(Start: 29 @39121 has 5 MA's), (Start: 30 @39109 has 135 MA's),

Gene: Petp2012_62 Start: 42556, Stop: 42470, Start Num: 30

Candidate Starts for Petp2012_62:

(3, 42742), (Start: 30 @42556 has 135 MA's), (40, 42499),

Gene: Petruccio_59 Start: 39783, Stop: 39697, Start Num: 30

Candidate Starts for Petruccio_59:

(Start: 30 @39783 has 135 MA's),

Gene: Phantastic_63 Start: 39080, Stop: 38997, Start Num: 30

Candidate Starts for Phantastic_63:

(Start: 30 @39080 has 135 MA's), (33, 39053), (35, 39047),

Gene: PherrisBueller_59 Start: 39225, Stop: 39139, Start Num: 30

Candidate Starts for PherrisBueller_59:

(Start: 30 @39225 has 135 MA's), (37, 39180),

Gene: PhrostyMug_61 Start: 42378, Stop: 42292, Start Num: 30

Candidate Starts for PhrostyMug_61:

(Start: 30 @42378 has 135 MA's), (42, 42309),

Gene: Pinto_61 Start: 40708, Stop: 40622, Start Num: 30

Candidate Starts for Pinto_61:

(2, 40909), (17, 40765), (18, 40762), (Start: 30 @40708 has 135 MA's), (40, 40651),

Gene: Pippin_61 Start: 40310, Stop: 40224, Start Num: 30
Candidate Starts for Pippin_61:
(Start: 30 @40310 has 135 MA's), (42, 40241),

Gene: Pocahontas_61 Start: 39415, Stop: 39332, Start Num: 32
Candidate Starts for Pocahontas_61:
(Start: 32 @39415 has 10 MA's), (36, 39400), (38, 39388),

Gene: Popcicle_61 Start: 39415, Stop: 39332, Start Num: 32
Candidate Starts for Popcicle_61:
(Start: 32 @39415 has 10 MA's), (36, 39400), (38, 39388),

Gene: PowerRanger_58 Start: 41531, Stop: 41445, Start Num: 30
Candidate Starts for PowerRanger_58:
(Start: 30 @41531 has 135 MA's), (40, 41474),

Gene: QTRlifeCrisis_61 Start: 41246, Stop: 41160, Start Num: 30
Candidate Starts for QTRlifeCrisis_61:
(Start: 30 @41246 has 135 MA's), (40, 41189),

Gene: QuinnKiro_60 Start: 39418, Stop: 39335, Start Num: 32
Candidate Starts for QuinnKiro_60:
(Start: 32 @39418 has 10 MA's), (36, 39403), (38, 39391),

Gene: RidgeCB_60 Start: 40684, Stop: 40598, Start Num: 30
Candidate Starts for RidgeCB_60:
(Start: 30 @40684 has 135 MA's), (40, 40627),

Gene: Ringer_60 Start: 41576, Stop: 41490, Start Num: 30
Candidate Starts for Ringer_60:
(17, 41633), (Start: 30 @41576 has 135 MA's), (37, 41531),

Gene: Rockstar_60 Start: 38912, Stop: 38829, Start Num: 30
Candidate Starts for Rockstar_60:
(Start: 30 @38912 has 135 MA's), (33, 38885), (35, 38879),

Gene: Rufus_62 Start: 41185, Stop: 41099, Start Num: 30
Candidate Starts for Rufus_62:
(2, 41386), (17, 41242), (18, 41239), (Start: 30 @41185 has 135 MA's), (40, 41128),

Gene: Ruotula_63 Start: 42698, Stop: 42612, Start Num: 30
Candidate Starts for Ruotula_63:
(Start: 30 @42698 has 135 MA's),

Gene: Sagefire_63 Start: 42564, Stop: 42478, Start Num: 30
Candidate Starts for Sagefire_63:
(Start: 30 @42564 has 135 MA's), (40, 42507),

Gene: SarFire_57 Start: 39630, Stop: 39544, Start Num: 30
Candidate Starts for SarFire_57:
(7, 39738), (9, 39726), (20, 39675), (Start: 30 @39630 has 135 MA's), (37, 39585),

Gene: Scowl_61 Start: 40456, Stop: 40370, Start Num: 30

Candidate Starts for Scowl_61:

(Start: 30 @40456 has 135 MA's), (37, 40411),

Gene: Seabiscuit_64 Start: 40427, Stop: 40341, Start Num: 30

Candidate Starts for Seabiscuit_64:

(Start: 30 @40427 has 135 MA's), (42, 40358),

Gene: Seanderson_60 Start: 41890, Stop: 41804, Start Num: 30

Candidate Starts for Seanderson_60:

(Start: 29 @41902 has 5 MA's), (Start: 30 @41890 has 135 MA's), (42, 41821),

Gene: Sheen_61 Start: 42251, Stop: 42171, Start Num: 30

Candidate Starts for Sheen_61:

(5, 42407), (15, 42317), (Start: 30 @42251 has 135 MA's), (31, 42236), (41, 42185),

Gene: Sibs6_63 Start: 39536, Stop: 39450, Start Num: 30

Candidate Starts for Sibs6_63:

(Start: 30 @39536 has 135 MA's), (42, 39467),

Gene: SkiPole_65 Start: 41165, Stop: 41067, Start Num: 29

Candidate Starts for SkiPole_65:

(Start: 29 @41165 has 5 MA's), (Start: 30 @41153 has 135 MA's),

Gene: Snazzy_59 Start: 39990, Stop: 39904, Start Num: 30

Candidate Starts for Snazzy_59:

(Start: 30 @39990 has 135 MA's),

Gene: Solon_58 Start: 39862, Stop: 39776, Start Num: 30

Candidate Starts for Solon_58:

(16, 39922), (Start: 30 @39862 has 135 MA's),

Gene: Squee_61 Start: 40708, Stop: 40622, Start Num: 30

Candidate Starts for Squee_61:

(Start: 30 @40708 has 135 MA's), (37, 40663),

Gene: Sunshine924_63 Start: 40103, Stop: 40017, Start Num: 30

Candidate Starts for Sunshine924_63:

(20, 40145), (Start: 30 @40103 has 135 MA's), (37, 40058),

Gene: SwissCheese_61 Start: 40178, Stop: 40092, Start Num: 30

Candidate Starts for SwissCheese_61:

(Start: 29 @40190 has 5 MA's), (Start: 30 @40178 has 135 MA's), (42, 40109),

Gene: Switzer_61 Start: 42225, Stop: 42139, Start Num: 30

Candidate Starts for Switzer_61:

(Start: 30 @42225 has 135 MA's),

Gene: Swole_62 Start: 40815, Stop: 40729, Start Num: 30

Candidate Starts for Swole_62:

(Start: 30 @40815 has 135 MA's), (40, 40758),

Gene: TNguyen7_63 Start: 39425, Stop: 39342, Start Num: 30

Candidate Starts for TNguyen7_63:
(Start: 30 @39425 has 135 MA's), (33, 39398),

Gene: Tasp14_64 Start: 42545, Stop: 42459, Start Num: 30
Candidate Starts for Tasp14_64:
(20, 42590), (27, 42569), (Start: 29 @42557 has 5 MA's), (Start: 30 @42545 has 135 MA's),

Gene: Teodoridan_58 Start: 39685, Stop: 39587, Start Num: 29
Candidate Starts for Teodoridan_58:
(Start: 29 @39685 has 5 MA's), (Start: 30 @39673 has 135 MA's),

Gene: TheloniousMonk_61 Start: 42308, Stop: 42222, Start Num: 30
Candidate Starts for TheloniousMonk_61:
(14, 42380), (Start: 30 @42308 has 135 MA's),

Gene: Thor_57 Start: 38988, Stop: 38902, Start Num: 30
Candidate Starts for Thor_57:
(7, 39096), (9, 39084), (20, 39033), (Start: 30 @38988 has 135 MA's), (37, 38943),

Gene: Todacoro_61 Start: 39418, Stop: 39335, Start Num: 32
Candidate Starts for Todacoro_61:
(Start: 32 @39418 has 10 MA's), (36, 39403), (38, 39391),

Gene: Tote_57 Start: 38082, Stop: 37996, Start Num: 30
Candidate Starts for Tote_57:
(Start: 30 @38082 has 135 MA's), (40, 38025),

Gene: Traft412_63 Start: 41489, Stop: 41403, Start Num: 30
Candidate Starts for Traft412_63:
(Start: 30 @41489 has 135 MA's),

Gene: Tripl3t_63 Start: 43200, Stop: 43114, Start Num: 30
Candidate Starts for Tripl3t_63:
(26, 43227), (Start: 29 @43212 has 5 MA's), (Start: 30 @43200 has 135 MA's),

Gene: Trouble_62 Start: 41402, Stop: 41316, Start Num: 30
Candidate Starts for Trouble_62:
(Start: 30 @41402 has 135 MA's), (42, 41333),

Gene: Turj99_59 Start: 41800, Stop: 41714, Start Num: 30
Candidate Starts for Turj99_59:
(2, 42001), (17, 41857), (18, 41854), (Start: 30 @41800 has 135 MA's),

Gene: Watermelon_61 Start: 40365, Stop: 40279, Start Num: 30
Candidate Starts for Watermelon_61:
(Start: 30 @40365 has 135 MA's), (42, 40296),

Gene: Zeeculate_58 Start: 41115, Stop: 41029, Start Num: 30
Candidate Starts for Zeeculate_58:
(Start: 30 @41115 has 135 MA's), (40, 41058), (42, 41046),

Gene: Zephyr_62 Start: 40532, Stop: 40446, Start Num: 30
Candidate Starts for Zephyr_62:

(Start: 30 @40532 has 135 MA's), (42, 40463),

Gene: Zeuska_60 Start: 41858, Stop: 41760, Start Num: 29

Candidate Starts for Zeuska_60:

(Start: 29 @41858 has 5 MA's), (Start: 30 @41846 has 135 MA's),