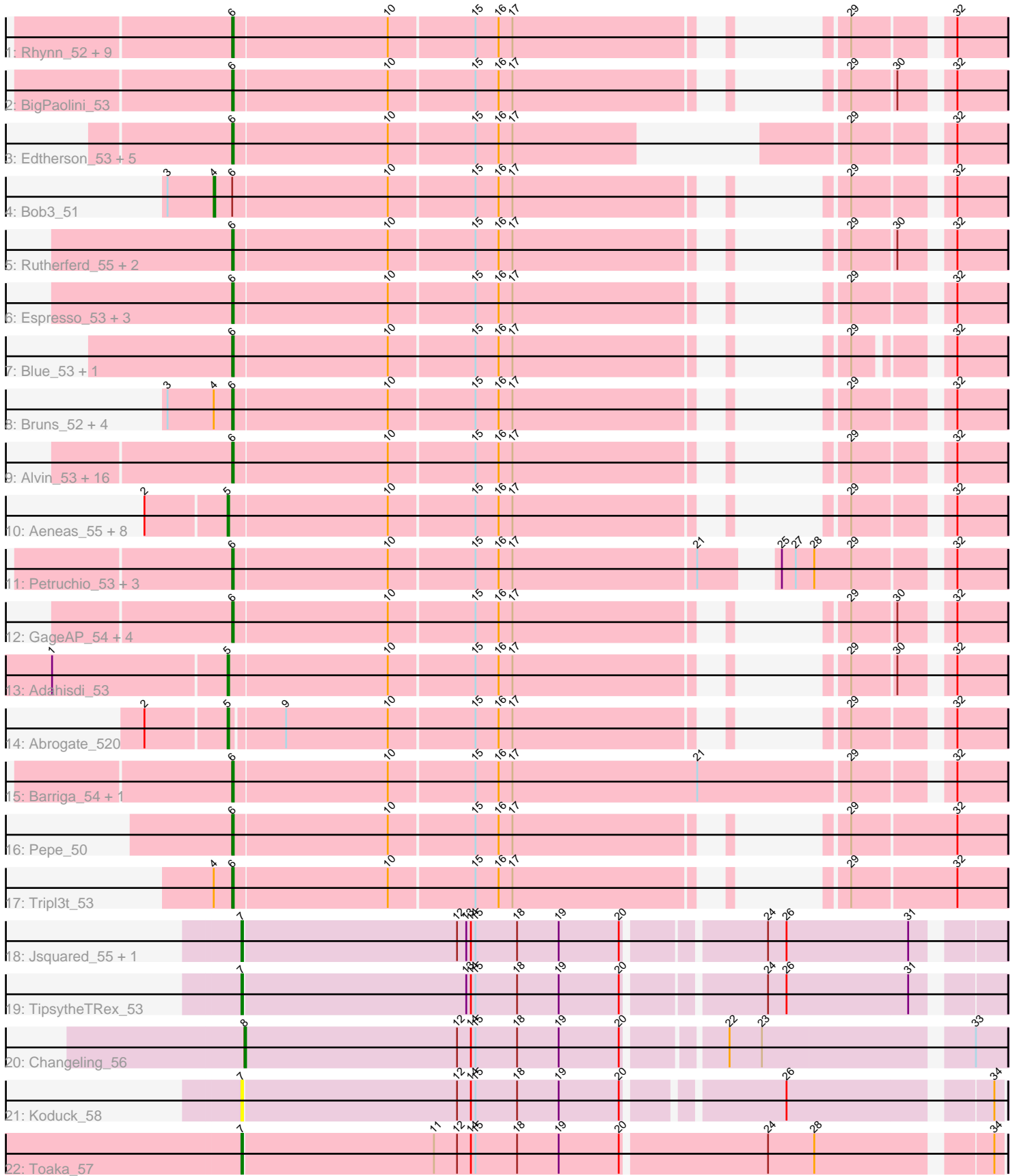


Pham 156320



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 156320 Report

This analysis was run 04/12/24 on database version 558.

Pham number 156320 has 79 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Rhynn_52, Chanagan_50, Zeuska_52, Manatee_55, Carlyle_52, Anglerfish_55, Niza_56, Wheeler_54, Euphoria_51, Teodoridan_52
- Track 2 : BigPaolini_53
- Track 3 : Edtherson_53, Monet_56, Treddle_54, Graduation_57, Eyeball_55, Cueyllyss_55
- Track 4 : Bob3_51
- Track 5 : Rutherford_55, MrGordo_53, Big3_53
- Track 6 : Espresso_53, Kenmech_57, Dussy_55, Abbyshoes_56
- Track 7 : Blue_53, Magnar_53
- Track 8 : Bruns_52, Rufus_54, Arlo_51, Sibs6_55, TwoPeat_53
- Track 9 : Alvin_53, Agaliana_49, Fushigi_52, BluSpix_53, Gompeii16_52, Ajay_55, Francis47_52, Trouble_56, MPlant7149_52, Bircsak_52, Acme_55, DrFeelGood_51, Applejack_49, PacerPaul_53, IgnatiusPatJac_54, Bones_54, Froghopper_51
- Track 10 : Aeneas_55, Zeeculate_51, Violet_51, Makemake_53, Mule_50, PhrostyMug_52, Pelly_53, Smairt_55, Perseus_53
- Track 11 : Petruccio_53, Dreamboat_55, PherrisBueller_53, Jasper_55
- Track 12 : GageAP_54, Lesedi_50, SpikeBT_53, Crispicous1_51, AFIS_51
- Track 13 : Adahisdi_53
- Track 14 : Abrogate_520
- Track 15 : Barriga_54, Scowl_54
- Track 16 : Pepe_50
- Track 17 : Tripl3t_53
- Track 18 : Jsquared_55, Serenity_57
- Track 19 : TipsytheTRex_53
- Track 20 : Changeling_56
- Track 21 : Koduck_58
- Track 22 : Toaka_57

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

The start number called the most often in the published annotations is 6, it was called in 54 of the 70 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AFIS_51, Abbyshoes_56, Acme_55, Agaliana_49, Ajay_55, Alvin_53, Anglerfish_55, Applejack_49, Arlo_51, Barriga_54, Big3_53, BigPaolini_53, Bircsak_52, BluSpix_53, Blue_53, Bones_54, Bruns_52, Carlyle_52, Chanagan_50, Crispicous1_51, Cueyllyss_55, DrFeelGood_51, Dreamboat_55, Dussy_55, Edtherson_53, Espresso_53, Euphoria_51, Eyeball_55, Francis47_52, Froghopper_51, Fushigi_52, GageAP_54, Gompeii16_52, Graduation_57, IgnatiusPatJac_54, Jasper_55, Kenmech_57, Lesedi_50, MPlant7149_52, Magnar_53, Manatee_55, Monet_56, MrGordo_53, Niza_56, PacerPaul_53, Pepe_50, Petruccio_53, PherrisBueller_53, Rhynn_52, Rufus_54, Rutherford_55, Scowl_54, Sibs6_55, SpikeBT_53, Teodoridan_52, Treddle_54, Tripl3t_53, Trouble_56, TwoPeat_53, Wheeler_54, Zeuska_52,

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

- Bob3_51,

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

- Abrogate_520, Adahisdi_53, Aeneas_55, Changeling_56, Jsquared_55, Koduck_58, Makemake_53, Mule_50, Pelly_53, Perseus_53, PhrostyMug_52, Serenity_57, Smairt_55, TipsytheTRex_53, Toaka_57, Violet_51, Zeeculate_51,

Summary by start number:

Start 4:

- Found in 7 of 79 (8.9%) of genes in pham
- Manual Annotations of this start: 1 of 70
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Bob3_51 (A1),

Start 5:

- Found in 11 of 79 (13.9%) of genes in pham
- Manual Annotations of this start: 10 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abrogate_520 (A1), Adahisdi_53 (A1), Aeneas_55 (A1), Makemake_53 (A1), Mule_50 (A1), Pelly_53 (A1), Perseus_53 (A1), PhrostyMug_52 (A1), Smairt_55 (A1), Violet_51 (A1), Zeeculate_51 (A1),

Start 6:

- Found in 62 of 79 (78.5%) of genes in pham
- Manual Annotations of this start: 54 of 70
- Called 98.4% of time when present
- Phage (with cluster) where this start called: AFIS_51 (A1), Abbyshoes_56 (A1), Acme_55 (A1), Agaliana_49 (A1), Ajay_55 (A1), Alvin_53 (A1), Anglerfish_55 (A1), Applejack_49 (A1), Arlo_51 (A1), Barriga_54 (A1), Big3_53 (A1), BigPaolini_53 (A1), Bircsak_52 (A1), BluSpix_53 (A1), Blue_53 (A1), Bones_54 (A1), Bruns_52 (A1), Carlyle_52 (A1), Chanagan_50 (A1), Crispicous1_51 (A1), Cueyllyss_55 (A1), DrFeelGood_51 (A1), Dreamboat_55 (A1), Dussy_55 (A1), Edtherson_53 (A1), Espresso_53 (A1), Euphoria_51 (A1), Eyeball_55 (A1), Francis47_52 (A1), Froghopper_51 (A1), Fushigi_52 (A1), GageAP_54 (A1), Gompeii16_52 (A1), Graduation_57 (A1), IgnatiusPatJac_54 (A1), Jasper_55 (A1), Kenmech_57 (A1), Lesedi_50 (A1), MPlant7149_52 (A1), Magnar_53 (A1), Manatee_55 (A1), Monet_56 (A1), MrGordo_53 (A1), Niza_56 (A1), PacerPaul_53 (A1), Pepe_50 (A1), Petruccio_53 (A1), PherrisBueller_53 (A1), Rhynn_52 (A1), Rufus_54 (A1), Rutherford_55 (A1), Scowl_54 (A1), Sibs6_55 (A1), SpikeBT_53 (A1), Teodoridan_52

(A1), Treddle_54 (A1), Tripl3t_53 (A1), Trouble_56 (A1), TwoPeat_53 (A1), Wheeler_54 (A1), Zeuska_52 (A1),

Start 7:

- Found in 5 of 79 (6.3%) of genes in pham
- Manual Annotations of this start: 4 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jsquared_55 (A2), Koduck_58 (A2), Serenity_57 (A2), TipsytheTRex_53 (A2), Toaka_57 (A9),

Start 8:

- Found in 1 of 79 (1.3%) of genes in pham
- Manual Annotations of this start: 1 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Changeling_56 (A2),

Summary by clusters:

There are 3 clusters represented in this pham: A1, A9, A2,

Info for manual annotations of cluster A1:

- Start number 4 was manually annotated 1 time for cluster A1.
- Start number 5 was manually annotated 10 times for cluster A1.
- Start number 6 was manually annotated 54 times for cluster A1.

Info for manual annotations of cluster A2:

- Start number 7 was manually annotated 3 times for cluster A2.
- Start number 8 was manually annotated 1 time for cluster A2.

Info for manual annotations of cluster A9:

- Start number 7 was manually annotated 1 time for cluster A9.

Gene Information:

Gene: AFIS_51 Start: 37581, Stop: 37183, Start Num: 6

Candidate Starts for AFIS_51:

(Start: 6 @37581 has 54 MA's), (10, 37482), (15, 37428), (16, 37413), (17, 37404), (29, 37269), (30, 37242), (32, 37215),

Gene: Abbyshoes_56 Start: 39189, Stop: 38779, Start Num: 6

Candidate Starts for Abbyshoes_56:

(Start: 6 @39189 has 54 MA's), (10, 39090), (15, 39036), (16, 39021), (17, 39012), (29, 38877), (32, 38811),

Gene: Abrogate_520 Start: 39189, Stop: 38791, Start Num: 5

Candidate Starts for Abrogate_520:

(2, 39240), (Start: 5 @39189 has 10 MA's), (9, 39156), (10, 39090), (15, 39036), (16, 39021), (17, 39012), (29, 38877), (32, 38823),

Gene: Acme_55 Start: 38115, Stop: 37717, Start Num: 6

Candidate Starts for Acme_55:

(Start: 6 @38115 has 54 MA's), (10, 38016), (15, 37962), (16, 37947), (17, 37938), (29, 37803), (32, 37749),

Gene: Adahisdi_53 Start: 38922, Stop: 38521, Start Num: 5

Candidate Starts for Adahisdi_53:

(1, 39033), (Start: 5 @38922 has 10 MA's), (10, 38820), (15, 38766), (16, 38751), (17, 38742), (29, 38607), (30, 38580), (32, 38553),

Gene: Aeneas_55 Start: 39139, Stop: 38738, Start Num: 5

Candidate Starts for Aeneas_55:

(2, 39190), (Start: 5 @39139 has 10 MA's), (10, 39037), (15, 38983), (16, 38968), (17, 38959), (29, 38824), (32, 38770),

Gene: Agaliana_49 Start: 35783, Stop: 35385, Start Num: 6

Candidate Starts for Agaliana_49:

(Start: 6 @35783 has 54 MA's), (10, 35684), (15, 35630), (16, 35615), (17, 35606), (29, 35471), (32, 35417),

Gene: Ajay_55 Start: 39243, Stop: 38845, Start Num: 6

Candidate Starts for Ajay_55:

(Start: 6 @39243 has 54 MA's), (10, 39144), (15, 39090), (16, 39075), (17, 39066), (29, 38931), (32, 38877),

Gene: Alvin_53 Start: 38568, Stop: 38170, Start Num: 6

Candidate Starts for Alvin_53:

(Start: 6 @38568 has 54 MA's), (10, 38469), (15, 38415), (16, 38400), (17, 38391), (29, 38256), (32, 38202),

Gene: Anglerfish_55 Start: 39478, Stop: 38999, Start Num: 6

Candidate Starts for Anglerfish_55:

(Start: 6 @39478 has 54 MA's), (10, 39379), (15, 39325), (16, 39310), (17, 39301), (29, 39085), (32, 39031),

Gene: Applejack_49 Start: 35405, Stop: 35007, Start Num: 6

Candidate Starts for Applejack_49:

(Start: 6 @35405 has 54 MA's), (10, 35306), (15, 35252), (16, 35237), (17, 35228), (29, 35093), (32, 35039),

Gene: Arlo_51 Start: 37427, Stop: 37029, Start Num: 6

Candidate Starts for Arlo_51:

(3, 37469), (Start: 4 @37439 has 1 MA's), (Start: 6 @37427 has 54 MA's), (10, 37328), (15, 37274), (16, 37259), (17, 37250), (29, 37115), (32, 37061),

Gene: Barriga_54 Start: 37755, Stop: 37276, Start Num: 6

Candidate Starts for Barriga_54:

(Start: 6 @37755 has 54 MA's), (10, 37656), (15, 37602), (16, 37587), (17, 37578), (21, 37458), (29, 37362), (32, 37308),

Gene: Big3_53 Start: 39260, Stop: 38862, Start Num: 6

Candidate Starts for Big3_53:

(Start: 6 @39260 has 54 MA's), (10, 39161), (15, 39107), (16, 39092), (17, 39083), (29, 38948), (30, 38921), (32, 38894),

Gene: BigPaolini_53 Start: 36840, Stop: 36442, Start Num: 6
Candidate Starts for BigPaolini_53:
(Start: 6 @36840 has 54 MA's), (10, 36741), (15, 36687), (16, 36672), (17, 36663), (29, 36528), (30, 36501), (32, 36474),

Gene: Bircsak_52 Start: 39359, Stop: 38961, Start Num: 6
Candidate Starts for Bircsak_52:
(Start: 6 @39359 has 54 MA's), (10, 39260), (15, 39206), (16, 39191), (17, 39182), (29, 39047), (32, 38993),

Gene: BluSpix_53 Start: 34621, Stop: 34223, Start Num: 6
Candidate Starts for BluSpix_53:
(Start: 6 @34621 has 54 MA's), (10, 34522), (15, 34468), (16, 34453), (17, 34444), (29, 34309), (32, 34255),

Gene: Blue_53 Start: 39272, Stop: 38880, Start Num: 6
Candidate Starts for Blue_53:
(Start: 6 @39272 has 54 MA's), (10, 39173), (15, 39119), (16, 39104), (17, 39095), (29, 38960), (32, 38912),

Gene: Bob3_51 Start: 37043, Stop: 36633, Start Num: 4
Candidate Starts for Bob3_51:
(3, 37073), (Start: 4 @37043 has 1 MA's), (Start: 6 @37031 has 54 MA's), (10, 36932), (15, 36878), (16, 36863), (17, 36854), (29, 36719), (32, 36665),

Gene: Bones_54 Start: 38722, Stop: 38324, Start Num: 6
Candidate Starts for Bones_54:
(Start: 6 @38722 has 54 MA's), (10, 38623), (15, 38569), (16, 38554), (17, 38545), (29, 38410), (32, 38356),

Gene: Bruns_52 Start: 37599, Stop: 37201, Start Num: 6
Candidate Starts for Bruns_52:
(3, 37641), (Start: 4 @37611 has 1 MA's), (Start: 6 @37599 has 54 MA's), (10, 37500), (15, 37446), (16, 37431), (17, 37422), (29, 37287), (32, 37233),

Gene: Carlyle_52 Start: 36053, Stop: 35655, Start Num: 6
Candidate Starts for Carlyle_52:
(Start: 6 @36053 has 54 MA's), (10, 35954), (15, 35900), (16, 35885), (17, 35876), (29, 35741), (32, 35687),

Gene: Chanagan_50 Start: 36851, Stop: 36453, Start Num: 6
Candidate Starts for Chanagan_50:
(Start: 6 @36851 has 54 MA's), (10, 36752), (15, 36698), (16, 36683), (17, 36674), (29, 36539), (32, 36485),

Gene: Changeling_56 Start: 38803, Stop: 38336, Start Num: 8
Candidate Starts for Changeling_56:
(Start: 8 @38803 has 1 MA's), (12, 38665), (14, 38656), (15, 38653), (18, 38626), (19, 38599), (20, 38560), (22, 38503), (23, 38482), (33, 38356),

Gene: Crispicous1_51 Start: 37176, Stop: 36778, Start Num: 6
Candidate Starts for Crispicous1_51:

(Start: 6 @37176 has 54 MA's), (10, 37077), (15, 37023), (16, 37008), (17, 36999), (29, 36864), (30, 36837), (32, 36810),

Gene: Cueyllyss_55 Start: 39855, Stop: 39457, Start Num: 6

Candidate Starts for Cueyllyss_55:

(Start: 6 @39855 has 54 MA's), (10, 39756), (15, 39702), (16, 39687), (17, 39678), (29, 39543), (32, 39489),

Gene: DrFeelGood_51 Start: 38016, Stop: 37618, Start Num: 6

Candidate Starts for DrFeelGood_51:

(Start: 6 @38016 has 54 MA's), (10, 37917), (15, 37863), (16, 37848), (17, 37839), (29, 37704), (32, 37650),

Gene: Dreamboat_55 Start: 37826, Stop: 37371, Start Num: 6

Candidate Starts for Dreamboat_55:

(Start: 6 @37826 has 54 MA's), (10, 37727), (15, 37673), (16, 37658), (17, 37649), (21, 37532), (25, 37502), (27, 37493), (28, 37481), (29, 37457), (32, 37403),

Gene: Dussy_55 Start: 39209, Stop: 38799, Start Num: 6

Candidate Starts for Dussy_55:

(Start: 6 @39209 has 54 MA's), (10, 39110), (15, 39056), (16, 39041), (17, 39032), (29, 38897), (32, 38831),

Gene: Edtherson_53 Start: 38507, Stop: 38109, Start Num: 6

Candidate Starts for Edtherson_53:

(Start: 6 @38507 has 54 MA's), (10, 38408), (15, 38354), (16, 38339), (17, 38330), (29, 38195), (32, 38141),

Gene: Espresso_53 Start: 39063, Stop: 38665, Start Num: 6

Candidate Starts for Espresso_53:

(Start: 6 @39063 has 54 MA's), (10, 38964), (15, 38910), (16, 38895), (17, 38886), (29, 38751), (32, 38697),

Gene: Euphoria_51 Start: 38314, Stop: 37916, Start Num: 6

Candidate Starts for Euphoria_51:

(Start: 6 @38314 has 54 MA's), (10, 38215), (15, 38161), (16, 38146), (17, 38137), (29, 38002), (32, 37948),

Gene: Eyeball_55 Start: 38602, Stop: 38204, Start Num: 6

Candidate Starts for Eyeball_55:

(Start: 6 @38602 has 54 MA's), (10, 38503), (15, 38449), (16, 38434), (17, 38425), (29, 38290), (32, 38236),

Gene: Francis47_52 Start: 39627, Stop: 39229, Start Num: 6

Candidate Starts for Francis47_52:

(Start: 6 @39627 has 54 MA's), (10, 39528), (15, 39474), (16, 39459), (17, 39450), (29, 39315), (32, 39261),

Gene: Froghopper_51 Start: 37352, Stop: 36957, Start Num: 6

Candidate Starts for Froghopper_51:

(Start: 6 @37352 has 54 MA's), (10, 37253), (15, 37199), (16, 37184), (17, 37175), (29, 37040), (32, 36986),

Gene: Fushigi_52 Start: 36313, Stop: 35915, Start Num: 6
Candidate Starts for Fushigi_52:
(Start: 6 @36313 has 54 MA's), (10, 36214), (15, 36160), (16, 36145), (17, 36136), (29, 36001), (32, 35947),

Gene: GageAP_54 Start: 39103, Stop: 38705, Start Num: 6
Candidate Starts for GageAP_54:
(Start: 6 @39103 has 54 MA's), (10, 39004), (15, 38950), (16, 38935), (17, 38926), (29, 38791), (30, 38764), (32, 38737),

Gene: Gompeii16_52 Start: 39360, Stop: 38962, Start Num: 6
Candidate Starts for Gompeii16_52:
(Start: 6 @39360 has 54 MA's), (10, 39261), (15, 39207), (16, 39192), (17, 39183), (29, 39048), (32, 38994),

Gene: Graduation_57 Start: 39927, Stop: 39529, Start Num: 6
Candidate Starts for Graduation_57:
(Start: 6 @39927 has 54 MA's), (10, 39828), (15, 39774), (16, 39759), (17, 39750), (29, 39615), (32, 39561),

Gene: IgnatiusPatJac_54 Start: 38566, Stop: 38168, Start Num: 6
Candidate Starts for IgnatiusPatJac_54:
(Start: 6 @38566 has 54 MA's), (10, 38467), (15, 38413), (16, 38398), (17, 38389), (29, 38254), (32, 38200),

Gene: Jasper_55 Start: 37712, Stop: 37257, Start Num: 6
Candidate Starts for Jasper_55:
(Start: 6 @37712 has 54 MA's), (10, 37613), (15, 37559), (16, 37544), (17, 37535), (21, 37418), (25, 37388), (27, 37379), (28, 37367), (29, 37343), (32, 37289),

Gene: Jsquared_55 Start: 37136, Stop: 36672, Start Num: 7
Candidate Starts for Jsquared_55:
(Start: 7 @37136 has 4 MA's), (12, 36998), (13, 36992), (14, 36989), (15, 36986), (18, 36959), (19, 36932), (20, 36893), (24, 36812), (26, 36800), (31, 36722),

Gene: Kenmech_57 Start: 40335, Stop: 39925, Start Num: 6
Candidate Starts for Kenmech_57:
(Start: 6 @40335 has 54 MA's), (10, 40236), (15, 40182), (16, 40167), (17, 40158), (29, 40023), (32, 39957),

Gene: Koduck_58 Start: 37415, Stop: 36957, Start Num: 7
Candidate Starts for Koduck_58:
(Start: 7 @37415 has 4 MA's), (12, 37277), (14, 37268), (15, 37265), (18, 37238), (19, 37211), (20, 37172), (26, 37082), (34, 36962),

Gene: Lesedi_50 Start: 37197, Stop: 36799, Start Num: 6
Candidate Starts for Lesedi_50:
(Start: 6 @37197 has 54 MA's), (10, 37098), (15, 37044), (16, 37029), (17, 37020), (29, 36885), (30, 36858), (32, 36831),

Gene: MPlant7149_52 Start: 37293, Stop: 36895, Start Num: 6
Candidate Starts for MPlant7149_52:

(Start: 6 @37293 has 54 MA's), (10, 37194), (15, 37140), (16, 37125), (17, 37116), (29, 36981), (32, 36927),

Gene: Magnar_53 Start: 38738, Stop: 38340, Start Num: 6

Candidate Starts for Magnar_53:

(Start: 6 @38738 has 54 MA's), (10, 38639), (15, 38585), (16, 38570), (17, 38561), (29, 38426), (32, 38372),

Gene: Makemake_53 Start: 38800, Stop: 38399, Start Num: 5

Candidate Starts for Makemake_53:

(2, 38851), (Start: 5 @38800 has 10 MA's), (10, 38698), (15, 38644), (16, 38629), (17, 38620), (29, 38485), (32, 38431),

Gene: Manatee_55 Start: 38824, Stop: 38426, Start Num: 6

Candidate Starts for Manatee_55:

(Start: 6 @38824 has 54 MA's), (10, 38725), (15, 38671), (16, 38656), (17, 38647), (29, 38512), (32, 38458),

Gene: Monet_56 Start: 39466, Stop: 39068, Start Num: 6

Candidate Starts for Monet_56:

(Start: 6 @39466 has 54 MA's), (10, 39367), (15, 39313), (16, 39298), (17, 39289), (29, 39154), (32, 39100),

Gene: MrGordo_53 Start: 38500, Stop: 38102, Start Num: 6

Candidate Starts for MrGordo_53:

(Start: 6 @38500 has 54 MA's), (10, 38401), (15, 38347), (16, 38332), (17, 38323), (29, 38188), (30, 38161), (32, 38134),

Gene: Mule_50 Start: 36434, Stop: 36033, Start Num: 5

Candidate Starts for Mule_50:

(2, 36485), (Start: 5 @36434 has 10 MA's), (10, 36332), (15, 36278), (16, 36263), (17, 36254), (29, 36119), (32, 36065),

Gene: Niza_56 Start: 40289, Stop: 39891, Start Num: 6

Candidate Starts for Niza_56:

(Start: 6 @40289 has 54 MA's), (10, 40190), (15, 40136), (16, 40121), (17, 40112), (29, 39977), (32, 39923),

Gene: PacerPaul_53 Start: 38994, Stop: 38596, Start Num: 6

Candidate Starts for PacerPaul_53:

(Start: 6 @38994 has 54 MA's), (10, 38895), (15, 38841), (16, 38826), (17, 38817), (29, 38682), (32, 38628),

Gene: Pelly_53 Start: 38399, Stop: 37998, Start Num: 5

Candidate Starts for Pelly_53:

(2, 38450), (Start: 5 @38399 has 10 MA's), (10, 38297), (15, 38243), (16, 38228), (17, 38219), (29, 38084), (32, 38030),

Gene: Pepe_50 Start: 37214, Stop: 36804, Start Num: 6

Candidate Starts for Pepe_50:

(Start: 6 @37214 has 54 MA's), (10, 37115), (15, 37061), (16, 37046), (17, 37037), (29, 36902), (32, 36836),

Gene: Perseus_53 Start: 39320, Stop: 38919, Start Num: 5

Candidate Starts for Perseus_53:

(2, 39371), (Start: 5 @39320 has 10 MA's), (10, 39218), (15, 39164), (16, 39149), (17, 39140), (29, 39005), (32, 38951),

Gene: Petruchio_53 Start: 38090, Stop: 37635, Start Num: 6

Candidate Starts for Petruchio_53:

(Start: 6 @38090 has 54 MA's), (10, 37991), (15, 37937), (16, 37922), (17, 37913), (21, 37796), (25, 37766), (27, 37757), (28, 37745), (29, 37721), (32, 37667),

Gene: PherrisBueller_53 Start: 37363, Stop: 36890, Start Num: 6

Candidate Starts for PherrisBueller_53:

(Start: 6 @37363 has 54 MA's), (10, 37264), (15, 37210), (16, 37195), (17, 37186), (21, 37069), (25, 37021), (27, 37012), (28, 37000), (29, 36976), (32, 36922),

Gene: PhrostyMug_52 Start: 38599, Stop: 38198, Start Num: 5

Candidate Starts for PhrostyMug_52:

(2, 38650), (Start: 5 @38599 has 10 MA's), (10, 38497), (15, 38443), (16, 38428), (17, 38419), (29, 38284), (32, 38230),

Gene: Rhynn_52 Start: 37733, Stop: 37335, Start Num: 6

Candidate Starts for Rhynn_52:

(Start: 6 @37733 has 54 MA's), (10, 37634), (15, 37580), (16, 37565), (17, 37556), (29, 37421), (32, 37367),

Gene: Rufus_54 Start: 38103, Stop: 37705, Start Num: 6

Candidate Starts for Rufus_54:

(3, 38145), (Start: 4 @38115 has 1 MA's), (Start: 6 @38103 has 54 MA's), (10, 38004), (15, 37950), (16, 37935), (17, 37926), (29, 37791), (32, 37737),

Gene: Rutherferd_55 Start: 38949, Stop: 38551, Start Num: 6

Candidate Starts for Rutherferd_55:

(Start: 6 @38949 has 54 MA's), (10, 38850), (15, 38796), (16, 38781), (17, 38772), (29, 38637), (30, 38610), (32, 38583),

Gene: Scowl_54 Start: 38673, Stop: 38194, Start Num: 6

Candidate Starts for Scowl_54:

(Start: 6 @38673 has 54 MA's), (10, 38574), (15, 38520), (16, 38505), (17, 38496), (21, 38376), (29, 38280), (32, 38226),

Gene: Serenity_57 Start: 37359, Stop: 36895, Start Num: 7

Candidate Starts for Serenity_57:

(Start: 7 @37359 has 4 MA's), (12, 37221), (13, 37215), (14, 37212), (15, 37209), (18, 37182), (19, 37155), (20, 37116), (24, 37035), (26, 37023), (31, 36945),

Gene: Sibs6_55 Start: 37137, Stop: 36739, Start Num: 6

Candidate Starts for Sibs6_55:

(3, 37179), (Start: 4 @37149 has 1 MA's), (Start: 6 @37137 has 54 MA's), (10, 37038), (15, 36984), (16, 36969), (17, 36960), (29, 36825), (32, 36771),

Gene: Smairt_55 Start: 39592, Stop: 39191, Start Num: 5

Candidate Starts for Smairt_55:

(2, 39643), (Start: 5 @39592 has 10 MA's), (10, 39490), (15, 39436), (16, 39421), (17, 39412), (29, 39277), (32, 39223),

Gene: SpikeBT_53 Start: 38361, Stop: 37963, Start Num: 6

Candidate Starts for SpikeBT_53:

(Start: 6 @38361 has 54 MA's), (10, 38262), (15, 38208), (16, 38193), (17, 38184), (29, 38049), (30, 38022), (32, 37995),

Gene: Teodoridan_52 Start: 37810, Stop: 37400, Start Num: 6

Candidate Starts for Teodoridan_52:

(Start: 6 @37810 has 54 MA's), (10, 37711), (15, 37657), (16, 37642), (17, 37633), (29, 37498), (32, 37432),

Gene: TopsytheTRex_53 Start: 37429, Stop: 36965, Start Num: 7

Candidate Starts for TopsytheTRex_53:

(Start: 7 @37429 has 4 MA's), (13, 37285), (14, 37282), (15, 37279), (18, 37252), (19, 37225), (20, 37186), (24, 37105), (26, 37093), (31, 37015),

Gene: Toaka_57 Start: 37937, Stop: 37467, Start Num: 7

Candidate Starts for Toaka_57:

(Start: 7 @37937 has 4 MA's), (11, 37814), (12, 37799), (14, 37790), (15, 37787), (18, 37760), (19, 37733), (20, 37694), (24, 37604), (28, 37574), (34, 37472),

Gene: Treddle_54 Start: 38978, Stop: 38580, Start Num: 6

Candidate Starts for Treddle_54:

(Start: 6 @38978 has 54 MA's), (10, 38879), (15, 38825), (16, 38810), (17, 38801), (29, 38666), (32, 38612),

Gene: Tripl3t_53 Start: 39615, Stop: 39205, Start Num: 6

Candidate Starts for Tripl3t_53:

(Start: 4 @39627 has 1 MA's), (Start: 6 @39615 has 54 MA's), (10, 39516), (15, 39462), (16, 39447), (17, 39438), (29, 39303), (32, 39237),

Gene: Trouble_56 Start: 39709, Stop: 39311, Start Num: 6

Candidate Starts for Trouble_56:

(Start: 6 @39709 has 54 MA's), (10, 39610), (15, 39556), (16, 39541), (17, 39532), (29, 39397), (32, 39343),

Gene: TwoPeat_53 Start: 38091, Stop: 37693, Start Num: 6

Candidate Starts for TwoPeat_53:

(3, 38133), (Start: 4 @38103 has 1 MA's), (Start: 6 @38091 has 54 MA's), (10, 37992), (15, 37938), (16, 37923), (17, 37914), (29, 37779), (32, 37725),

Gene: Violet_51 Start: 38989, Stop: 38588, Start Num: 5

Candidate Starts for Violet_51:

(2, 39040), (Start: 5 @38989 has 10 MA's), (10, 38887), (15, 38833), (16, 38818), (17, 38809), (29, 38674), (32, 38620),

Gene: Wheeler_54 Start: 38471, Stop: 38073, Start Num: 6

Candidate Starts for Wheeler_54:

(Start: 6 @38471 has 54 MA's), (10, 38372), (15, 38318), (16, 38303), (17, 38294), (29, 38159), (32, 38105),

Gene: Zeeculate_51 Start: 39028, Stop: 38627, Start Num: 5

Candidate Starts for Zeeculate_51:

(2, 39079), (Start: 5 @39028 has 10 MA's), (10, 38926), (15, 38872), (16, 38857), (17, 38848), (29, 38713), (32, 38659),

Gene: Zeuska_52 Start: 38962, Stop: 38564, Start Num: 6

Candidate Starts for Zeuska_52:

(Start: 6 @38962 has 54 MA's), (10, 38863), (15, 38809), (16, 38794), (17, 38785), (29, 38650), (32, 38596),