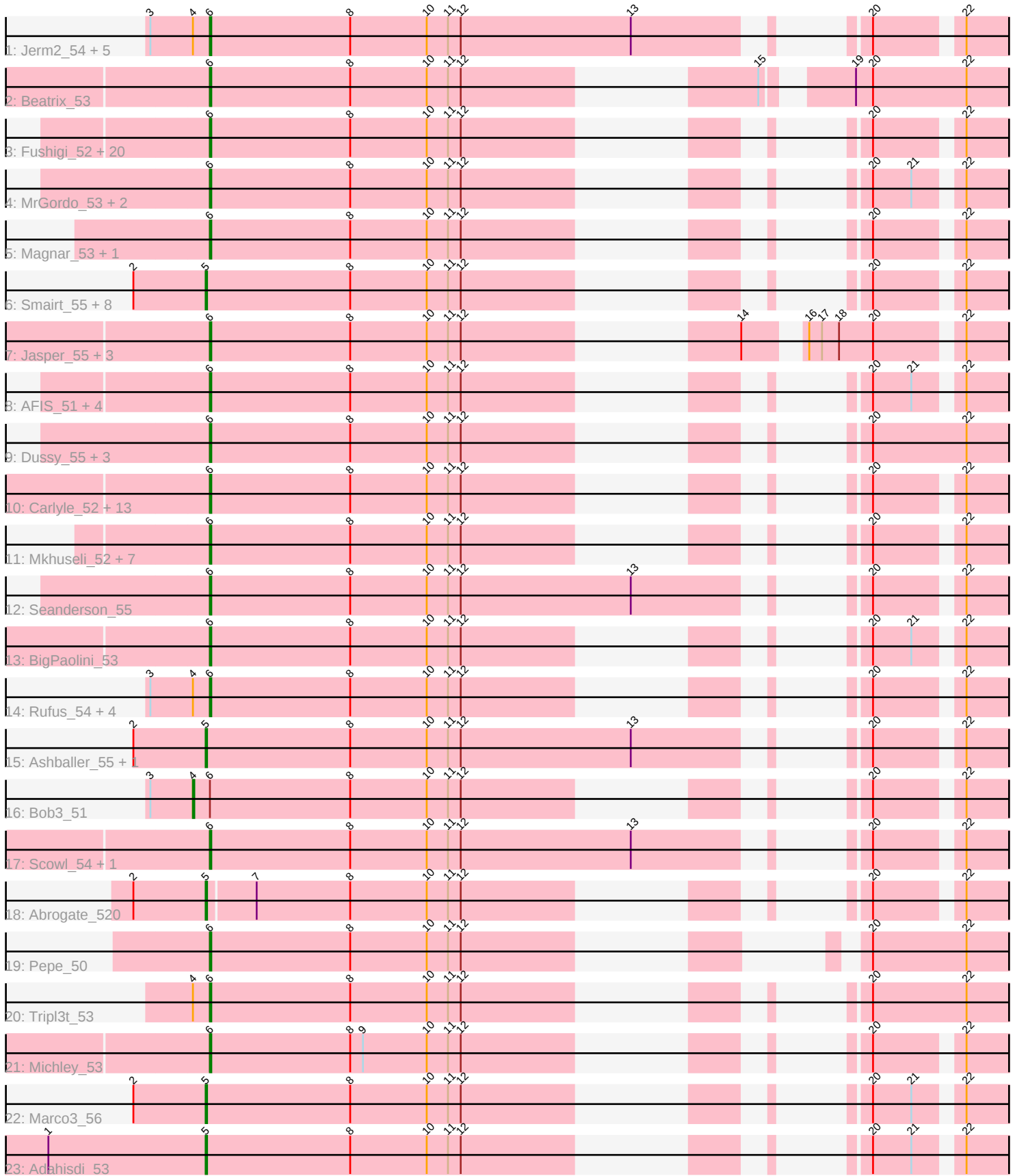


Pham 280304



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 280304 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280304 has 95 members, 6 are drafts.

Phages represented in each track:

- Track 1 : Jerm2_54, PSullivan_53, Rohr_54, BigMau_54, HermioneGrange_53, Pita2_56
- Track 2 : Beatrix_53
- Track 3 : Fushigi_52, Trouble_56, Inyanga_50, Alvin_53, Hami1_47, BluSpix_52, PacerPaul_53, IgnatiusPatJac_54, Ajay_55, Francis47_52, MPlant7149_52, Gompeii16_52, DrFeelGood_51, Applejack_48, Bones_54, Froghopper_51, Agaliana_49, Bircsak_52, ChristmasHams_49, Iqorha_50, Acme_55
- Track 4 : MrGordo_53, Rutherford_55, Big3_53
- Track 5 : Magnar_53, Blue_53
- Track 6 : Smairt_55, Perseus_53, Violet_51, Zeeculate_51, Aeneas_55, Makemake_53, Pelly_53, Mule_50, PhrostyMug_52
- Track 7 : Jasper_55, PherrisBueller_53, Dreamboat_55, Petruchio_53
- Track 8 : AFIS_51, Lesedi_50, SpikeBT_53, Crispicous1_51, GageAP_54
- Track 9 : Dussy_55, Abbyshoes_56, Espresso_53, Kenmech_57
- Track 10 : Carlyle_52, Wheeler_54, Rhynn_52, Manatee_55, Levia_51, Chanagan_50, Teodoridan_52, Anglerfish_55, Payneful_53, PhineBark_53, Marchy_48, Zeuska_52, Niza_56, Euphoria_51
- Track 11 : Mkhuseli_52, LunarLander_55, Monet_56, Graduation_57, Eyeball_55, Treddle_54, Edtherson_53, Cueylyss_55
- Track 12 : Seanderson_55
- Track 13 : BigPaolini_53
- Track 14 : Rufus_54, Arlo_51, Bruns_52, Sibs6_55, TwoPeat_54
- Track 15 : Ashballer_55, JC27_55
- Track 16 : Bob3_51
- Track 17 : Scowl_54, Barriga_54
- Track 18 : Abrogate_520
- Track 19 : Pepe_50
- Track 20 : Tripl3t_53
- Track 21 : Michley_53
- Track 22 : Marco3_56
- Track 23 : Adahisdi_53

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 74 of the 89 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_48, Arlo_51, Barriga_54, Beatrix_53, Big3_53, BigMau_54, BigPaolini_53, Bircsak_52, BluSpix_52, Blue_53, Bones_54, Bruns_52, Carlyle_52, Chanagan_50, ChristmasHams_49, Crispious1_51, Cueyliss_55, DrFeelGood_51, Dreamboat_55, Dussy_55, Edtherson_53, Espresso_53, Euphoria_51, Eyeball_55, Francis47_52, Froghopper_51, Fushigi_52, GageAP_54, Gompei16_52, Graduation_57, Hami1_47, HermioneGrange_53, IgnatiusPatJac_54, Inyanga_50, Iqorha_50, Jasper_55, Jerm2_54, Kenmech_57, Lesedi_50, Levia_51, LunarLander_55, MPlant7149_52, Magnar_53, Manatee_55, Marchy_48, Michley_53, Mkhuseleli_52, Monet_56, MrGordo_53, Niza_56, PSullivan_53, PacerPaul_53, Payneful_53, Pepe_50, Petruchio_53, PherrisBueller_53, PhineBark_53, Pita2_56, Rhynn_52, Rohr_54, Rufus_54, Rutherford_55, Scowl_54, Seanderson_55, Sibs6_55, SpikeBT_53, Teodoridan_52, Treddle_54, Tripl3t_53, Trouble_56, TwoPeat_54, 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, Ashballer_55, JC27_55, Makemake_53, Marco3_56, Mule_50, Pelly_53, Perseus_53, PhrostyMug_52, Smairt_55, Violet_51, Zeeculate_51,

Summary by start number:

Start 4:

- Found in 13 of 95 (13.7%) of genes in pham
- Manual Annotations of this start: 1 of 89
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Bob3_51 (A1),

Start 5:

- Found in 14 of 95 (14.7%) of genes in pham
- Manual Annotations of this start: 14 of 89
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abrogate_520 (A1), Adahisdi_53 (A1), Aeneas_55 (A1), Ashballer_55 (A1), JC27_55 (A1), Makemake_53 (A1), Marco3_56 (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 81 of 95 (85.3%) of genes in pham
- Manual Annotations of this start: 74 of 89
- Called 98.8% 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_48 (A1), Arlo_51 (A1), Barriga_54 (A1), Beatrix_53 (A1), Big3_53 (A1), BigMau_54 (A1), BigPaolini_53 (A1), Bircsak_52 (A1), BluSpix_52 (A1), Blue_53 (A1), Bones_54 (A1), Bruns_52 (A1), Carlyle_52 (A1), Chanagan_50 (A1),

ChristmasHams_49 (A1), Crispicous1_51 (A1), Cueylyss_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), Hami1_47 (A1), HermioneGrange_53 (A1), IgnatiusPatJac_54 (A1), Inyanga_50 (A1), Iqorha_50 (A1), Jasper_55 (A1), Jerm2_54 (A1), Kenmech_57 (A1), Lesedi_50 (A1), Levia_51 (A1), LunarLander_55 (A1), MPlant7149_52 (A1), Magnar_53 (A1), Manatee_55 (A1), Marchy_48 (A1), Michley_53 (A1), Mkhusei_52 (A1), Monet_56 (A1), MrGordo_53 (A1), Niza_56 (A1), PSullivan_53 (A1), PacerPaul_53 (A1), Payneful_53 (A1), Pepe_50 (A1), Petruchio_53 (A1), PherrisBuell_53 (A1), PhineBark_53 (A1), Pita2_56 (A1), Rhynn_52 (A1), Rohr_54 (A1), Rufus_54 (A1), Rutherford_55 (A1), Scowl_54 (A1), Seanderson_55 (A1), Sibs6_55 (A1), SpikeBT_53 (A1), Teodoridan_52 (A1), Treddle_54 (A1), Tripl3t_53 (A1), Trouble_56 (A1), TwoPeat_54 (A1), Wheeler_54 (A1), Zeuska_52 (A1),

Summary by clusters:

There is one cluster represented in this pham: A1

Info for manual annotations of cluster A1:

- Start number 4 was manually annotated 1 time for cluster A1.
- Start number 5 was manually annotated 14 times for cluster A1.
- Start number 6 was manually annotated 74 times for cluster A1.

Gene Information:

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

Candidate Starts for AFIS_51:

(Start: 6 @37581 has 74 MA's), (8, 37482), (10, 37428), (11, 37413), (12, 37404), (20, 37269), (21, 37242), (22, 37215),

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

Candidate Starts for Abbyshoes_56:

(Start: 6 @39189 has 74 MA's), (8, 39090), (10, 39036), (11, 39021), (12, 39012), (20, 38877), (22, 38811),

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

Candidate Starts for Abrogate_520:

(2, 39240), (Start: 5 @39189 has 14 MA's), (7, 39156), (8, 39090), (10, 39036), (11, 39021), (12, 39012), (20, 38877), (22, 38823),

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

Candidate Starts for Acme_55:

(Start: 6 @38115 has 74 MA's), (8, 38016), (10, 37962), (11, 37947), (12, 37938), (20, 37803), (22, 37749),

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

Candidate Starts for Adahisdi_53:

(1, 39033), (Start: 5 @38922 has 14 MA's), (8, 38820), (10, 38766), (11, 38751), (12, 38742), (20, 38607), (21, 38580), (22, 38553),

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

Candidate Starts for Aeneas_55:

(2, 39190), (Start: 5 @39139 has 14 MA's), (8, 39037), (10, 38983), (11, 38968), (12, 38959), (20, 38824), (22, 38770),

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

Candidate Starts for Agaliana_49:

(Start: 6 @35783 has 74 MA's), (8, 35684), (10, 35630), (11, 35615), (12, 35606), (20, 35471), (22, 35417),

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

Candidate Starts for Ajay_55:

(Start: 6 @39243 has 74 MA's), (8, 39144), (10, 39090), (11, 39075), (12, 39066), (20, 38931), (22, 38877),

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

Candidate Starts for Alvin_53:

(Start: 6 @38568 has 74 MA's), (8, 38469), (10, 38415), (11, 38400), (12, 38391), (20, 38256), (22, 38202),

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

Candidate Starts for Anglerfish_55:

(Start: 6 @39478 has 74 MA's), (8, 39379), (10, 39325), (11, 39310), (12, 39301), (20, 39085), (22, 39031),

Gene: Applejack_48 Start: 35405, Stop: 35007, Start Num: 6

Candidate Starts for Applejack_48:

(Start: 6 @35405 has 74 MA's), (8, 35306), (10, 35252), (11, 35237), (12, 35228), (20, 35093), (22, 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 74 MA's), (8, 37328), (10, 37274), (11, 37259), (12, 37250), (20, 37115), (22, 37061),

Gene: Ashballer_55 Start: 39002, Stop: 38520, Start Num: 5

Candidate Starts for Ashballer_55:

(2, 39053), (Start: 5 @39002 has 14 MA's), (8, 38900), (10, 38846), (11, 38831), (12, 38822), (13, 38702), (20, 38606), (22, 38552),

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

Candidate Starts for Barriga_54:

(Start: 6 @37755 has 74 MA's), (8, 37656), (10, 37602), (11, 37587), (12, 37578), (13, 37458), (20, 37362), (22, 37308),

Gene: Beatrix_53 Start: 39461, Stop: 39000, Start Num: 6

Candidate Starts for Beatrix_53:

(Start: 6 @39461 has 74 MA's), (8, 39362), (10, 39308), (11, 39293), (12, 39284), (15, 39155), (19, 39110), (20, 39098), (22, 39032),

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

Candidate Starts for Big3_53:

(Start: 6 @39260 has 74 MA's), (8, 39161), (10, 39107), (11, 39092), (12, 39083), (20, 38948), (21, 38921), (22, 38894),

Gene: BigMau_54 Start: 37762, Stop: 37283, Start Num: 6

Candidate Starts for BigMau_54:

(3, 37804), (Start: 4 @37774 has 1 MA's), (Start: 6 @37762 has 74 MA's), (8, 37663), (10, 37609), (11, 37594), (12, 37585), (13, 37465), (20, 37369), (22, 37315),

Gene: BigPaolini_53 Start: 36840, Stop: 36442, Start Num: 6

Candidate Starts for BigPaolini_53:

(Start: 6 @36840 has 74 MA's), (8, 36741), (10, 36687), (11, 36672), (12, 36663), (20, 36528), (21, 36501), (22, 36474),

Gene: Bircsak_52 Start: 39359, Stop: 38961, Start Num: 6

Candidate Starts for Bircsak_52:

(Start: 6 @39359 has 74 MA's), (8, 39260), (10, 39206), (11, 39191), (12, 39182), (20, 39047), (22, 38993),

Gene: BluSpix_52 Start: 34621, Stop: 34223, Start Num: 6

Candidate Starts for BluSpix_52:

(Start: 6 @34621 has 74 MA's), (8, 34522), (10, 34468), (11, 34453), (12, 34444), (20, 34309), (22, 34255),

Gene: Blue_53 Start: 39272, Stop: 38880, Start Num: 6

Candidate Starts for Blue_53:

(Start: 6 @39272 has 74 MA's), (8, 39173), (10, 39119), (11, 39104), (12, 39095), (20, 38960), (22, 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 74 MA's), (8, 36932), (10, 36878), (11, 36863), (12, 36854), (20, 36719), (22, 36665),

Gene: Bones_54 Start: 38722, Stop: 38324, Start Num: 6

Candidate Starts for Bones_54:

(Start: 6 @38722 has 74 MA's), (8, 38623), (10, 38569), (11, 38554), (12, 38545), (20, 38410), (22, 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 74 MA's), (8, 37500), (10, 37446), (11, 37431), (12, 37422), (20, 37287), (22, 37233),

Gene: Carlyle_52 Start: 36053, Stop: 35655, Start Num: 6

Candidate Starts for Carlyle_52:

(Start: 6 @36053 has 74 MA's), (8, 35954), (10, 35900), (11, 35885), (12, 35876), (20, 35741), (22, 35687),

Gene: Chanagan_50 Start: 36851, Stop: 36453, Start Num: 6

Candidate Starts for Chanagan_50:

(Start: 6 @36851 has 74 MA's), (8, 36752), (10, 36698), (11, 36683), (12, 36674), (20, 36539), (22, 36485),

Gene: ChristmasHams_49 Start: 36257, Stop: 35859, Start Num: 6
Candidate Starts for ChristmasHams_49:
(Start: 6 @36257 has 74 MA's), (8, 36158), (10, 36104), (11, 36089), (12, 36080), (20, 35945), (22, 35891),

Gene: Crispicous1_51 Start: 37176, Stop: 36778, Start Num: 6
Candidate Starts for Crispicous1_51:
(Start: 6 @37176 has 74 MA's), (8, 37077), (10, 37023), (11, 37008), (12, 36999), (20, 36864), (21, 36837), (22, 36810),

Gene: Cueylyss_55 Start: 39855, Stop: 39457, Start Num: 6
Candidate Starts for Cueylyss_55:
(Start: 6 @39855 has 74 MA's), (8, 39756), (10, 39702), (11, 39687), (12, 39678), (20, 39543), (22, 39489),

Gene: DrFeelGood_51 Start: 38016, Stop: 37618, Start Num: 6
Candidate Starts for DrFeelGood_51:
(Start: 6 @38016 has 74 MA's), (8, 37917), (10, 37863), (11, 37848), (12, 37839), (20, 37704), (22, 37650),

Gene: Dreamboat_55 Start: 37826, Stop: 37371, Start Num: 6
Candidate Starts for Dreamboat_55:
(Start: 6 @37826 has 74 MA's), (8, 37727), (10, 37673), (11, 37658), (12, 37649), (14, 37532), (16, 37502), (17, 37493), (18, 37481), (20, 37457), (22, 37403),

Gene: Dussy_55 Start: 39209, Stop: 38799, Start Num: 6
Candidate Starts for Dussy_55:
(Start: 6 @39209 has 74 MA's), (8, 39110), (10, 39056), (11, 39041), (12, 39032), (20, 38897), (22, 38831),

Gene: Edtherson_53 Start: 38507, Stop: 38109, Start Num: 6
Candidate Starts for Edtherson_53:
(Start: 6 @38507 has 74 MA's), (8, 38408), (10, 38354), (11, 38339), (12, 38330), (20, 38195), (22, 38141),

Gene: Espresso_53 Start: 39063, Stop: 38665, Start Num: 6
Candidate Starts for Espresso_53:
(Start: 6 @39063 has 74 MA's), (8, 38964), (10, 38910), (11, 38895), (12, 38886), (20, 38751), (22, 38697),

Gene: Euphoria_51 Start: 38314, Stop: 37916, Start Num: 6
Candidate Starts for Euphoria_51:
(Start: 6 @38314 has 74 MA's), (8, 38215), (10, 38161), (11, 38146), (12, 38137), (20, 38002), (22, 37948),

Gene: Eyeball_55 Start: 38602, Stop: 38204, Start Num: 6
Candidate Starts for Eyeball_55:
(Start: 6 @38602 has 74 MA's), (8, 38503), (10, 38449), (11, 38434), (12, 38425), (20, 38290), (22, 38236),

Gene: Francis47_52 Start: 39627, Stop: 39229, Start Num: 6
Candidate Starts for Francis47_52:

(Start: 6 @39627 has 74 MA's), (8, 39528), (10, 39474), (11, 39459), (12, 39450), (20, 39315), (22, 39261),

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

Candidate Starts for Froghopper_51:

(Start: 6 @37352 has 74 MA's), (8, 37253), (10, 37199), (11, 37184), (12, 37175), (20, 37040), (22, 36986),

Gene: Fushigi_52 Start: 36313, Stop: 35915, Start Num: 6

Candidate Starts for Fushigi_52:

(Start: 6 @36313 has 74 MA's), (8, 36214), (10, 36160), (11, 36145), (12, 36136), (20, 36001), (22, 35947),

Gene: GageAP_54 Start: 39103, Stop: 38705, Start Num: 6

Candidate Starts for GageAP_54:

(Start: 6 @39103 has 74 MA's), (8, 39004), (10, 38950), (11, 38935), (12, 38926), (20, 38791), (21, 38764), (22, 38737),

Gene: Gompeii16_52 Start: 39360, Stop: 38962, Start Num: 6

Candidate Starts for Gompeii16_52:

(Start: 6 @39360 has 74 MA's), (8, 39261), (10, 39207), (11, 39192), (12, 39183), (20, 39048), (22, 38994),

Gene: Graduation_57 Start: 39927, Stop: 39529, Start Num: 6

Candidate Starts for Graduation_57:

(Start: 6 @39927 has 74 MA's), (8, 39828), (10, 39774), (11, 39759), (12, 39750), (20, 39615), (22, 39561),

Gene: Hami1_47 Start: 33410, Stop: 33012, Start Num: 6

Candidate Starts for Hami1_47:

(Start: 6 @33410 has 74 MA's), (8, 33311), (10, 33257), (11, 33242), (12, 33233), (20, 33098), (22, 33044),

Gene: HermioneGrange_53 Start: 38256, Stop: 37777, Start Num: 6

Candidate Starts for HermioneGrange_53:

(3, 38298), (Start: 4 @38268 has 1 MA's), (Start: 6 @38256 has 74 MA's), (8, 38157), (10, 38103), (11, 38088), (12, 38079), (13, 37959), (20, 37863), (22, 37809),

Gene: IgnatiusPatJac_54 Start: 38566, Stop: 38168, Start Num: 6

Candidate Starts for IgnatiusPatJac_54:

(Start: 6 @38566 has 74 MA's), (8, 38467), (10, 38413), (11, 38398), (12, 38389), (20, 38254), (22, 38200),

Gene: Inyanga_50 Start: 36800, Stop: 36402, Start Num: 6

Candidate Starts for Inyanga_50:

(Start: 6 @36800 has 74 MA's), (8, 36701), (10, 36647), (11, 36632), (12, 36623), (20, 36488), (22, 36434),

Gene: Iqorha_50 Start: 36799, Stop: 36401, Start Num: 6

Candidate Starts for Iqorha_50:

(Start: 6 @36799 has 74 MA's), (8, 36700), (10, 36646), (11, 36631), (12, 36622), (20, 36487), (22, 36433),

Gene: JC27_55 Start: 38691, Stop: 38209, Start Num: 5

Candidate Starts for JC27_55:

(2, 38742), (Start: 5 @38691 has 14 MA's), (8, 38589), (10, 38535), (11, 38520), (12, 38511), (13, 38391), (20, 38295), (22, 38241),

Gene: Jasper_55 Start: 37712, Stop: 37257, Start Num: 6

Candidate Starts for Jasper_55:

(Start: 6 @37712 has 74 MA's), (8, 37613), (10, 37559), (11, 37544), (12, 37535), (14, 37418), (16, 37388), (17, 37379), (18, 37367), (20, 37343), (22, 37289),

Gene: Jerm2_54 Start: 38511, Stop: 38032, Start Num: 6

Candidate Starts for Jerm2_54:

(3, 38553), (Start: 4 @38523 has 1 MA's), (Start: 6 @38511 has 74 MA's), (8, 38412), (10, 38358), (11, 38343), (12, 38334), (13, 38214), (20, 38118), (22, 38064),

Gene: Kenmech_57 Start: 40335, Stop: 39925, Start Num: 6

Candidate Starts for Kenmech_57:

(Start: 6 @40335 has 74 MA's), (8, 40236), (10, 40182), (11, 40167), (12, 40158), (20, 40023), (22, 39957),

Gene: Lesedi_50 Start: 37197, Stop: 36799, Start Num: 6

Candidate Starts for Lesedi_50:

(Start: 6 @37197 has 74 MA's), (8, 37098), (10, 37044), (11, 37029), (12, 37020), (20, 36885), (21, 36858), (22, 36831),

Gene: Levia_51 Start: 38035, Stop: 37625, Start Num: 6

Candidate Starts for Levia_51:

(Start: 6 @38035 has 74 MA's), (8, 37936), (10, 37882), (11, 37867), (12, 37858), (20, 37723), (22, 37657),

Gene: LunarLander_55 Start: 38494, Stop: 38096, Start Num: 6

Candidate Starts for LunarLander_55:

(Start: 6 @38494 has 74 MA's), (8, 38395), (10, 38341), (11, 38326), (12, 38317), (20, 38182), (22, 38128),

Gene: MPlant7149_52 Start: 37293, Stop: 36895, Start Num: 6

Candidate Starts for MPlant7149_52:

(Start: 6 @37293 has 74 MA's), (8, 37194), (10, 37140), (11, 37125), (12, 37116), (20, 36981), (22, 36927),

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

Candidate Starts for Magnar_53:

(Start: 6 @38738 has 74 MA's), (8, 38639), (10, 38585), (11, 38570), (12, 38561), (20, 38426), (22, 38372),

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

Candidate Starts for Makemake_53:

(2, 38851), (Start: 5 @38800 has 14 MA's), (8, 38698), (10, 38644), (11, 38629), (12, 38620), (20, 38485), (22, 38431),

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

Candidate Starts for Manatee_55:

(Start: 6 @38824 has 74 MA's), (8, 38725), (10, 38671), (11, 38656), (12, 38647), (20, 38512), (22, 38458),

Gene: Marchy_48 Start: 35728, Stop: 35330, Start Num: 6

Candidate Starts for Marchy_48:

(Start: 6 @35728 has 74 MA's), (8, 35629), (10, 35575), (11, 35560), (12, 35551), (20, 35416), (22, 35362),

Gene: Marco3_56 Start: 40086, Stop: 39685, Start Num: 5

Candidate Starts for Marco3_56:

(2, 40137), (Start: 5 @40086 has 14 MA's), (8, 39984), (10, 39930), (11, 39915), (12, 39906), (20, 39771), (21, 39744), (22, 39717),

Gene: Michley_53 Start: 37767, Stop: 37369, Start Num: 6

Candidate Starts for Michley_53:

(Start: 6 @37767 has 74 MA's), (8, 37668), (9, 37659), (10, 37614), (11, 37599), (12, 37590), (20, 37455), (22, 37401),

Gene: Mkhuseleli_52 Start: 37334, Stop: 36936, Start Num: 6

Candidate Starts for Mkhuseleli_52:

(Start: 6 @37334 has 74 MA's), (8, 37235), (10, 37181), (11, 37166), (12, 37157), (20, 37022), (22, 36968),

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

Candidate Starts for Monet_56:

(Start: 6 @39466 has 74 MA's), (8, 39367), (10, 39313), (11, 39298), (12, 39289), (20, 39154), (22, 39100),

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

Candidate Starts for MrGordo_53:

(Start: 6 @38500 has 74 MA's), (8, 38401), (10, 38347), (11, 38332), (12, 38323), (20, 38188), (21, 38161), (22, 38134),

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

Candidate Starts for Mule_50:

(2, 36485), (Start: 5 @36434 has 14 MA's), (8, 36332), (10, 36278), (11, 36263), (12, 36254), (20, 36119), (22, 36065),

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

Candidate Starts for Niza_56:

(Start: 6 @40289 has 74 MA's), (8, 40190), (10, 40136), (11, 40121), (12, 40112), (20, 39977), (22, 39923),

Gene: PSullivan_53 Start: 37380, Stop: 36901, Start Num: 6

Candidate Starts for PSullivan_53:

(3, 37422), (Start: 4 @37392 has 1 MA's), (Start: 6 @37380 has 74 MA's), (8, 37281), (10, 37227), (11, 37212), (12, 37203), (13, 37083), (20, 36987), (22, 36933),

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

Candidate Starts for PacerPaul_53:

(Start: 6 @38994 has 74 MA's), (8, 38895), (10, 38841), (11, 38826), (12, 38817), (20, 38682), (22, 38628),

Gene: Payneful_53 Start: 38445, Stop: 38047, Start Num: 6

Candidate Starts for Payneful_53:

(Start: 6 @38445 has 74 MA's), (8, 38346), (10, 38292), (11, 38277), (12, 38268), (20, 38133), (22, 38079),

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

Candidate Starts for Pelly_53:

(2, 38450), (Start: 5 @38399 has 14 MA's), (8, 38297), (10, 38243), (11, 38228), (12, 38219), (20, 38084), (22, 38030),

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

Candidate Starts for Pepe_50:

(Start: 6 @37214 has 74 MA's), (8, 37115), (10, 37061), (11, 37046), (12, 37037), (20, 36902), (22, 36836),

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

Candidate Starts for Perseus_53:

(2, 39371), (Start: 5 @39320 has 14 MA's), (8, 39218), (10, 39164), (11, 39149), (12, 39140), (20, 39005), (22, 38951),

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

Candidate Starts for Petruchio_53:

(Start: 6 @38090 has 74 MA's), (8, 37991), (10, 37937), (11, 37922), (12, 37913), (14, 37796), (16, 37766), (17, 37757), (18, 37745), (20, 37721), (22, 37667),

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

Candidate Starts for PherrisBueller_53:

(Start: 6 @37363 has 74 MA's), (8, 37264), (10, 37210), (11, 37195), (12, 37186), (14, 37069), (16, 37021), (17, 37012), (18, 37000), (20, 36976), (22, 36922),

Gene: PhineBark_53 Start: 39053, Stop: 38643, Start Num: 6

Candidate Starts for PhineBark_53:

(Start: 6 @39053 has 74 MA's), (8, 38954), (10, 38900), (11, 38885), (12, 38876), (20, 38741), (22, 38675),

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

Candidate Starts for PhrostyMug_52:

(2, 38650), (Start: 5 @38599 has 14 MA's), (8, 38497), (10, 38443), (11, 38428), (12, 38419), (20, 38284), (22, 38230),

Gene: Pita2_56 Start: 38877, Stop: 38398, Start Num: 6

Candidate Starts for Pita2_56:

(3, 38919), (Start: 4 @38889 has 1 MA's), (Start: 6 @38877 has 74 MA's), (8, 38778), (10, 38724), (11, 38709), (12, 38700), (13, 38580), (20, 38484), (22, 38430),

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

Candidate Starts for Rhynn_52:

(Start: 6 @37733 has 74 MA's), (8, 37634), (10, 37580), (11, 37565), (12, 37556), (20, 37421), (22, 37367),

Gene: Rohr_54 Start: 38557, Stop: 38078, Start Num: 6

Candidate Starts for Rohr_54:

(3, 38599), (Start: 4 @38569 has 1 MA's), (Start: 6 @38557 has 74 MA's), (8, 38458), (10, 38404), (11, 38389), (12, 38380), (13, 38260), (20, 38164), (22, 38110),

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 74 MA's), (8, 38004), (10, 37950), (11, 37935), (12, 37926), (20, 37791), (22, 37737),

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

Candidate Starts for Rutherferd_55:

(Start: 6 @38949 has 74 MA's), (8, 38850), (10, 38796), (11, 38781), (12, 38772), (20, 38637), (21, 38610), (22, 38583),

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

Candidate Starts for Scowl_54:

(Start: 6 @38673 has 74 MA's), (8, 38574), (10, 38520), (11, 38505), (12, 38496), (13, 38376), (20, 38280), (22, 38226),

Gene: Seanderson_55 Start: 40050, Stop: 39571, Start Num: 6

Candidate Starts for Seanderson_55:

(Start: 6 @40050 has 74 MA's), (8, 39951), (10, 39897), (11, 39882), (12, 39873), (13, 39753), (20, 39657), (22, 39603),

Gene: Sib6_55 Start: 37137, Stop: 36739, Start Num: 6

Candidate Starts for Sib6_55:

(3, 37179), (Start: 4 @37149 has 1 MA's), (Start: 6 @37137 has 74 MA's), (8, 37038), (10, 36984), (11, 36969), (12, 36960), (20, 36825), (22, 36771),

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

Candidate Starts for Smairt_55:

(2, 39643), (Start: 5 @39592 has 14 MA's), (8, 39490), (10, 39436), (11, 39421), (12, 39412), (20, 39277), (22, 39223),

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

Candidate Starts for SpikeBT_53:

(Start: 6 @38361 has 74 MA's), (8, 38262), (10, 38208), (11, 38193), (12, 38184), (20, 38049), (21, 38022), (22, 37995),

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

Candidate Starts for Teodoridan_52:

(Start: 6 @37810 has 74 MA's), (8, 37711), (10, 37657), (11, 37642), (12, 37633), (20, 37498), (22, 37432),

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

Candidate Starts for Treddle_54:

(Start: 6 @38978 has 74 MA's), (8, 38879), (10, 38825), (11, 38810), (12, 38801), (20, 38666), (22, 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 74 MA's), (8, 39516), (10, 39462), (11, 39447), (12, 39438), (20, 39303), (22, 39237),

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

Candidate Starts for Trouble_56:

(Start: 6 @39709 has 74 MA's), (8, 39610), (10, 39556), (11, 39541), (12, 39532), (20, 39397), (22, 39343),

Gene: TwoPeat_54 Start: 38091, Stop: 37693, Start Num: 6

Candidate Starts for TwoPeat_54:

(3, 38133), (Start: 4 @38103 has 1 MA's), (Start: 6 @38091 has 74 MA's), (8, 37992), (10, 37938), (11, 37923), (12, 37914), (20, 37779), (22, 37725),

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

Candidate Starts for Violet_51:

(2, 39040), (Start: 5 @38989 has 14 MA's), (8, 38887), (10, 38833), (11, 38818), (12, 38809), (20, 38674), (22, 38620),

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

Candidate Starts for Wheeler_54:

(Start: 6 @38471 has 74 MA's), (8, 38372), (10, 38318), (11, 38303), (12, 38294), (20, 38159), (22, 38105),

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

Candidate Starts for Zeeculate_51:

(2, 39079), (Start: 5 @39028 has 14 MA's), (8, 38926), (10, 38872), (11, 38857), (12, 38848), (20, 38713), (22, 38659),

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

Candidate Starts for Zeuska_52:

(Start: 6 @38962 has 74 MA's), (8, 38863), (10, 38809), (11, 38794), (12, 38785), (20, 38650), (22, 38596),