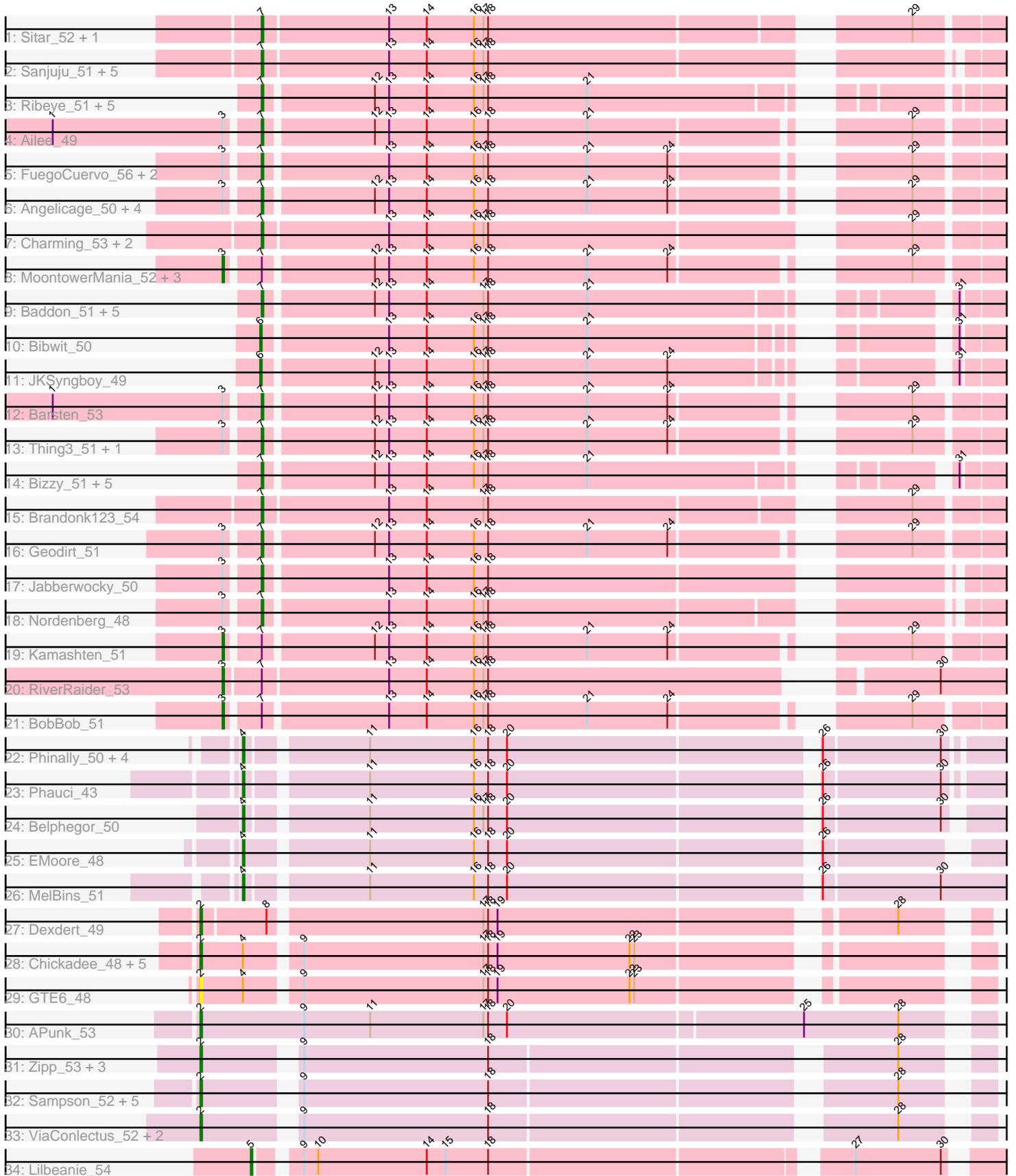# Pham 291060

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 291060 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291060 has 86 members, 7 are drafts.

Phages represented in each track:
• Track 1 : Sitar_52, Lennon_52
• Track 2 : Sanjuju_51, Fitzgerald_51, Galadriel_53, Love_57, Paries_56, McCrothy_53
• Track 3 : Ribeye_51, Ashertheman_51, Gustavo_51, Saronaya_51, LilHam_48, Tangerine_50
• Track 4 : Ailee_49
• Track 5 : FuegoCuervo_56, Vivi2_56, Fosterous_53
• Track 6 : Angelicage_50, McKinley_55, Stultus_50, Sedona_52, ChadMasterC_53
• Track 7 : Charming_53, Tangent_53, Rofo_52
• Track 8 : MoontowerMania_52, Affeca_50, Keitabear_52, Shivanishola_52
• Track 9 : Baddon_51, SchottB_49, Tycho_50, Baumdotcom_49, StorminNorm_50, Gaea_50
• Track 10 : Bibwit_50
• Track 11 : JKSyngboy_49
• Track 12 : Barsten_53
• Track 13 : Thing3_51, Kewpiedoll_53
• Track 14 : Bizzy_51, YorkOnyx_52, Derg_46, Kwobi_53, Flatwoods_51, Kroos_51
• Track 15 : Brandonk123_54
• Track 16 : Geodirt_51
• Track 17 : Jabberwocky_50
• Track 18 : Nordenberg_48
• Track 19 : Kamashten_51
• Track 20 : RiverRaider_53
• Track 21 : BobBob_51
• Track 22 : Phinally_50, Leonard_50, Inspectinfecti_51, Hans_52, Ali17_48
• Track 23 : Phauci_43
• Track 24 : Belphegor_50
• Track 25 : EMoore_48
• Track 26 : MelBins_51
• Track 27 : Dexdert_49
• Track 28 : Chickadee_48, EdmundFerry_47, Kwekel_48, Tiamoceli_49, Twonlo_46, RoadKill_46
• Track 29 : GTE6_48
• Track 30 : APunk_53
• Track 31 : Zipp_53, Delrey21_52, DoctorFroggo_52, Verity_52
• Track 32 : Sampson_52, Zitch_55, Scioto_53, Pumpkiney_53, Natkenzie_52, Abblin_52

• Track 33 : ViaConlectus_52, Tardus_54, BigHunkinEater_54
• Track 34 : Lilbeanie_54

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

The start number called the most often in the published annotations is 7, it was called in 44 of the 79 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Ailee_49, Angelicage_50, Ashertheman_51, Baddon_51, Barsten_53, Baumdotcom_49, Bizzy_51, Brandonk123_54, ChadMasterC_53, Charming_53, Derg_46, Fitzgerald_51, Flatwoods_51, Fosterous_53, FuegoCuervo_56, Gaea_50, Galadriel_53, Geodirt_51, Gustavo_51, Jabberwocky_50, Kewpiedoll_53, Kroos_51, Kwobi_53, Lennon_52, LilHam_48, Love_57, McCrothy_53, McKinley_55, Nordenberg_48, Paries_56, Ribeye_51, Rofo_52, Sanjuju_51, Saronaya_51, SchottB_49, Sedona_52, Sitar_52, StorminNorm_50, Stultus_50, Tangent_53, Tangerine_50, Thing3_51, Tycho_50, Vivi2_56, YorkOnyx_52,

Genes that have the "Most Annotated" start but do not call it:
• Affeca_50, BobBob_51, Kamashten_51, Keitabear_52, MoontowerMania_52, RiverRaider_53, Shivanishola_52,

Genes that do not have the "Most Annotated" start:
• APunk_53, Abblin_52, Ali17_48, Belphegor_50, Bibwit_50, BigHunkinEater_54, Chickadee_48, Delrey21_52, Dexdert_49, DoctorFroggo_52, EMoore_48, EdmundFerry_47, GTE6_48, Hans_52, Inspectinfecti_51, JKSyngboy_49, Kwekel_48, Leonard_50, Lilbeanie_54, MelBins_51, Natkenzie_52, Phauci_43, Phinally_50, Pumpkiney_53, RoadKill_46, Sampson_52, Scioto_53, Tardus_54, Tiamoceli_49, Twonlo_46, Verity_52, ViaConlectus_52, Zipp_53, Zitch_55,

Summary by start number:

Start 2:
• Found in 22 of 86 (25.6%) of genes in pham
• Manual Annotations of this start: 16 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: APunk_53 (DE4), Abblin_52 (DE4), BigHunkinEater_54 (DE4), Chickadee_48 (DE3), Delrey21_52 (DE4), Dexdert_49 (DE3), DoctorFroggo_52 (DE4), EdmundFerry_47 (DE3), GTE6_48 (DE3), Kwekel_48 (DE3), Natkenzie_52 (DE4), Pumpkiney_53 (DE4), RoadKill_46 (DE3), Sampson_52 (DE4), Scioto_53 (DE4), Tardus_54 (DE4), Tiamoceli_49 (DE3), Twonlo_46 (DE3), Verity_52 (DE4), ViaConlectus_52 (DE4), Zipp_53 (DE4), Zitch_55 (DE4),

Start 3:
• Found in 22 of 86 (25.6%) of genes in pham
• Manual Annotations of this start: 7 of 79
• Called 31.8% of time when present
• Phage (with cluster) where this start called: Affeca_50 (DE1), BobBob_51 (DE1), Kamashten_51 (DE1), Keitabear_52 (DE1), MoontowerMania_52 (DE1),

RiverRaider_53 (DE1), Shivanishola_52 (DE1),

Start 4:
• Found in 16 of 86 (18.6%) of genes in pham
• Manual Annotations of this start: 9 of 79
• Called 56.2% of time when present
• Phage (with cluster) where this start called: Ali17_48 (DE2), Belphegor_50 (DE2), EMoore_48 (DE2), Hans_52 (DE2), Inspectinfecti_51 (DE2), Leonard_50 (DE2), MelBins_51 (DE2), Phauci_43 (DE2), Phinally_50 (DE2),

Start 5:
• Found in 1 of 86 (1.2%) of genes in pham
• Manual Annotations of this start: 1 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Lilbeanie_54 (DE5),

Start 6:
• Found in 2 of 86 (2.3%) of genes in pham
• Manual Annotations of this start: 2 of 79
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Bibwit_50 (DE1), JKSyngboy_49 (DE1),

Start 7:
• Found in 52 of 86 (60.5%) of genes in pham
• Manual Annotations of this start: 44 of 79
• Called 86.5% of time when present
• Phage (with cluster) where this start called: Ailee_49 (DE1), Angelicage_50 (DE1), Ashertheman_51 (DE1), Baddon_51 (DE1), Barsten_53 (DE1), Baumdotcom_49 (DE1), Bizzy_51 (DE1), Brandonk123_54 (DE1), ChadMasterC_53 (DE1), Charming_53 (DE1), Derg_46 (DE1), Fitzgerald_51 (DE1), Flatwoods_51 (DE1), Fosterous_53 (DE1), FuegoCuervo_56 (DE1), Gaea_50 (DE1), Galadriel_53 (DE1), Geodirt_51 (DE1), Gustavo_51 (DE1), Jabberwocky_50 (DE1), Kewpiedoll_53 (DE1), Kroos_51 (DE1), Kwobi_53 (DE1), Lennon_52 (DE1), LilHam_48 (DE1), Love_57 (DE1), McCrothy_53 (DE1), McKinley_55 (DE1), Nordenberg_48 (DE1), Paries_56 (DE1), Ribeye_51 (DE1), Rofo_52 (DE1), Sanjuju_51 (DE1), Saronaya_51 (DE1), SchottB_49 (DE1), Sedona_52 (DE1), Sitar_52 (DE1), StorminNorm_50 (DE1), Stultus_50 (DE1), Tangent_53 (DE1), Tangerine_50 (DE1), Thing3_51 (DE1), Tycho_50 (DE1), Vivi2_56 (DE1), YorkOnyx_52 (DE1),

Summary by clusters:

There are 5 clusters represented in this pham: DE1, DE2, DE3, DE4, DE5,

Info for manual annotations of cluster DE1:
•Start number 3 was manually annotated 7 times for cluster DE1.
•Start number 6 was manually annotated 2 times for cluster DE1.
•Start number 7 was manually annotated 44 times for cluster DE1.

Info for manual annotations of cluster DE2:
•Start number 4 was manually annotated 9 times for cluster DE2.

Info for manual annotations of cluster DE3:
•Start number 2 was manually annotated 7 times for cluster DE3.

Info for manual annotations of cluster DE4:
•Start number 2 was manually annotated 9 times for cluster DE4.

Info for manual annotations of cluster DE5:
•Start number 5 was manually annotated 1 time for cluster DE5.

Gene Information:

Gene: APunk_53 Start: 44131, Stop: 44613, Start Num: 2
Candidate Starts for APunk_53:
(Start: 2 @44131 has 16 MA's), (9, 44197), (11, 44239), (17, 44311), (18, 44314), (20, 44326), (25, 44509), (28, 44569),

Gene: Abblin_52 Start: 44653, Stop: 45099, Start Num: 2
Candidate Starts for Abblin_52:
(Start: 2 @44653 has 16 MA's), (9, 44704), (18, 44821), (28, 45055),

Gene: Affeca_50 Start: 43913, Stop: 44362, Start Num: 3
Candidate Starts for Affeca_50:
(Start: 3 @43913 has 7 MA's), (Start: 7 @43931 has 44 MA's), (12, 43997), (13, 44006), (14, 44030), (16, 44060), (18, 44069), (21, 44132), (24, 44183), (29, 44303),

Gene: Ailee_49 Start: 43539, Stop: 43970, Start Num: 7
Candidate Starts for Ailee_49:
(1, 43413), (Start: 3 @43521 has 7 MA's), (Start: 7 @43539 has 44 MA's), (12, 43605), (13, 43614), (14, 43638), (16, 43668), (18, 43677), (21, 43740), (29, 43911),

Gene: Ali17_48 Start: 42350, Stop: 42817, Start Num: 4
Candidate Starts for Ali17_48:
(Start: 4 @42350 has 9 MA's), (11, 42419), (16, 42485), (18, 42494), (20, 42506), (26, 42692), (30, 42764),

Gene: Angelicage_50 Start: 44346, Stop: 44777, Start Num: 7
Candidate Starts for Angelicage_50:
(Start: 3 @44328 has 7 MA's), (Start: 7 @44346 has 44 MA's), (12, 44412), (13, 44421), (14, 44445), (16, 44475), (18, 44484), (21, 44547), (24, 44598), (29, 44718),

Gene: Ashertheman_51 Start: 43652, Stop: 44077, Start Num: 7
Candidate Starts for Ashertheman_51:
(Start: 7 @43652 has 44 MA's), (12, 43718), (13, 43727), (14, 43751), (16, 43781), (17, 43787), (18, 43790), (21, 43853),

Gene: Baddon_51 Start: 44646, Stop: 45065, Start Num: 7
Candidate Starts for Baddon_51:
(Start: 7 @44646 has 44 MA's), (12, 44712), (13, 44721), (14, 44745), (17, 44781), (18, 44784), (21, 44847), (31, 45033),

Gene: Barsten_53 Start: 44302, Stop: 44733, Start Num: 7
Candidate Starts for Barsten_53:

(1, 44176), (Start: 3 @44284 has 7 MA's), (Start: 7 @44302 has 44 MA's), (12, 44368), (13, 44377), (14, 44401), (16, 44431), (17, 44437), (18, 44440), (21, 44503), (24, 44554), (29, 44674),

Gene: Baumdotcom_49 Start: 43073, Stop: 43492, Start Num: 7
Candidate Starts for Baumdotcom_49:
(Start: 7 @43073 has 44 MA's), (12, 43139), (13, 43148), (14, 43172), (17, 43208), (18, 43211), (21, 43274), (31, 43460),

Gene: Belphegor_50 Start: 44214, Stop: 44669, Start Num: 4
Candidate Starts for Belphegor_50:
(Start: 4 @44214 has 9 MA's), (11, 44283), (16, 44349), (17, 44355), (18, 44358), (20, 44370), (26, 44556), (30, 44628),

Gene: Bibwit_50 Start: 43184, Stop: 43603, Start Num: 6
Candidate Starts for Bibwit_50:
(Start: 6 @43184 has 2 MA's), (13, 43259), (14, 43283), (16, 43313), (17, 43319), (18, 43322), (21, 43385), (31, 43571),

Gene: BigHunkinEater_54 Start: 43913, Stop: 44359, Start Num: 2
Candidate Starts for BigHunkinEater_54:
(Start: 2 @43913 has 16 MA's), (9, 43964), (18, 44081), (28, 44315),

Gene: Bizzy_51 Start: 43361, Stop: 43780, Start Num: 7
Candidate Starts for Bizzy_51:
(Start: 7 @43361 has 44 MA's), (12, 43427), (13, 43436), (14, 43460), (16, 43490), (17, 43496), (18, 43499), (21, 43562), (31, 43748),

Gene: BobBob_51 Start: 43511, Stop: 43960, Start Num: 3
Candidate Starts for BobBob_51:
(Start: 3 @43511 has 7 MA's), (Start: 7 @43529 has 44 MA's), (13, 43604), (14, 43628), (16, 43658), (17, 43664), (18, 43667), (21, 43730), (24, 43781), (29, 43901),

Gene: Brandonk123_54 Start: 44483, Stop: 44920, Start Num: 7
Candidate Starts for Brandonk123_54:
(Start: 7 @44483 has 44 MA's), (13, 44561), (14, 44585), (17, 44621), (18, 44624), (29, 44861),

Gene: ChadMasterC_53 Start: 45701, Stop: 46132, Start Num: 7
Candidate Starts for ChadMasterC_53:
(Start: 3 @45683 has 7 MA's), (Start: 7 @45701 has 44 MA's), (12, 45767), (13, 45776), (14, 45800), (16, 45830), (18, 45839), (21, 45902), (24, 45953), (29, 46073),

Gene: Charming_53 Start: 43974, Stop: 44414, Start Num: 7
Candidate Starts for Charming_53:
(Start: 7 @43974 has 44 MA's), (13, 44052), (14, 44076), (16, 44106), (17, 44112), (18, 44115), (29, 44355),

Gene: Chickadee_48 Start: 40446, Stop: 40898, Start Num: 2
Candidate Starts for Chickadee_48:
(Start: 2 @40446 has 16 MA's), (Start: 4 @40473 has 9 MA's), (9, 40503), (17, 40617), (18, 40620), (19, 40626), (22, 40710), (23, 40713),

Gene: Delrey21_52 Start: 45424, Stop: 45870, Start Num: 2
Candidate Starts for Delrey21_52:

(Start: 2 @45424 has 16 MA's), (9, 45475), (18, 45592), (28, 45826),

Gene: Derg_46 Start: 42953, Stop: 43372, Start Num: 7
Candidate Starts for Derg_46:
(Start: 7 @42953 has 44 MA's), (12, 43019), (13, 43028), (14, 43052), (16, 43082), (17, 43088), (18, 43091), (21, 43154), (31, 43340),

Gene: Dexdert_49 Start: 40735, Stop: 41181, Start Num: 2
Candidate Starts for Dexdert_49:
(Start: 2 @40735 has 16 MA's), (8, 40774), (17, 40903), (18, 40906), (19, 40912), (28, 41140),

Gene: DoctorFroggo_52 Start: 45424, Stop: 45870, Start Num: 2
Candidate Starts for DoctorFroggo_52:
(Start: 2 @45424 has 16 MA's), (9, 45475), (18, 45592), (28, 45826),

Gene: EMoore_48 Start: 43562, Stop: 44014, Start Num: 4
Candidate Starts for EMoore_48:
(Start: 4 @43562 has 9 MA's), (11, 43634), (16, 43700), (18, 43709), (20, 43721), (26, 43907),

Gene: EdmundFerry_47 Start: 40514, Stop: 40966, Start Num: 2
Candidate Starts for EdmundFerry_47:
(Start: 2 @40514 has 16 MA's), (Start: 4 @40541 has 9 MA's), (9, 40571), (17, 40685), (18, 40688), (19, 40694), (22, 40778), (23, 40781),

Gene: Fitzgerald_51 Start: 44965, Stop: 45399, Start Num: 7
Candidate Starts for Fitzgerald_51:
(Start: 7 @44965 has 44 MA's), (13, 45043), (14, 45067), (16, 45097), (17, 45103), (18, 45106),

Gene: Flatwoods_51 Start: 43302, Stop: 43721, Start Num: 7
Candidate Starts for Flatwoods_51:
(Start: 7 @43302 has 44 MA's), (12, 43368), (13, 43377), (14, 43401), (16, 43431), (17, 43437), (18, 43440), (21, 43503), (31, 43689),

Gene: Fosterous_53 Start: 44435, Stop: 44866, Start Num: 7
Candidate Starts for Fosterous_53:
(Start: 3 @44417 has 7 MA's), (Start: 7 @44435 has 44 MA's), (13, 44510), (14, 44534), (16, 44564), (17, 44570), (18, 44573), (21, 44636), (24, 44687), (29, 44807),

Gene: FuegoCuervo_56 Start: 43572, Stop: 44003, Start Num: 7
Candidate Starts for FuegoCuervo_56:
(Start: 3 @43554 has 7 MA's), (Start: 7 @43572 has 44 MA's), (13, 43647), (14, 43671), (16, 43701), (17, 43707), (18, 43710), (21, 43773), (24, 43824), (29, 43944),

Gene: GTE6_48 Start: 40982, Stop: 41434, Start Num: 2
Candidate Starts for GTE6_48:
(Start: 2 @40982 has 16 MA's), (Start: 4 @41009 has 9 MA's), (9, 41039), (17, 41153), (18, 41156), (19, 41162), (22, 41246), (23, 41249),

Gene: Gaea_50 Start: 42958, Stop: 43377, Start Num: 7
Candidate Starts for Gaea_50:
(Start: 7 @42958 has 44 MA's), (12, 43024), (13, 43033), (14, 43057), (17, 43093), (18, 43096), (21, 43159), (31, 43345),

Gene: Galadriel_53 Start: 44431, Stop: 44862, Start Num: 7
Candidate Starts for Galadriel_53:
(Start: 7 @44431 has 44 MA's), (13, 44509), (14, 44533), (16, 44563), (17, 44569), (18, 44572),

Gene: Geodirt_51 Start: 45050, Stop: 45481, Start Num: 7
Candidate Starts for Geodirt_51:
(Start: 3 @45032 has 7 MA's), (Start: 7 @45050 has 44 MA's), (12, 45116), (13, 45125), (14, 45149), (16, 45179), (18, 45188), (21, 45251), (24, 45302), (29, 45422),

Gene: Gustavo_51 Start: 43578, Stop: 44003, Start Num: 7
Candidate Starts for Gustavo_51:
(Start: 7 @43578 has 44 MA's), (12, 43644), (13, 43653), (14, 43677), (16, 43707), (17, 43713), (18, 43716), (21, 43779),

Gene: Hans_52 Start: 42990, Stop: 43457, Start Num: 4
Candidate Starts for Hans_52:
(Start: 4 @42990 has 9 MA's), (11, 43059), (16, 43125), (18, 43134), (20, 43146), (26, 43332), (30, 43404),

Gene: Inspectinfecti_51 Start: 43436, Stop: 43903, Start Num: 4
Candidate Starts for Inspectinfecti_51:
(Start: 4 @43436 has 9 MA's), (11, 43505), (16, 43571), (18, 43580), (20, 43592), (26, 43778), (30, 43850),

Gene: JKSyngboy_49 Start: 44177, Stop: 44596, Start Num: 6
Candidate Starts for JKSyngboy_49:
(Start: 6 @44177 has 2 MA's), (12, 44243), (13, 44252), (14, 44276), (16, 44306), (17, 44312), (18, 44315), (21, 44378), (24, 44429), (31, 44564),

Gene: Jabberwocky_50 Start: 45110, Stop: 45541, Start Num: 7
Candidate Starts for Jabberwocky_50:
(Start: 3 @45092 has 7 MA's), (Start: 7 @45110 has 44 MA's), (13, 45185), (14, 45209), (16, 45239), (18, 45248),

Gene: Kamashten_51 Start: 43624, Stop: 44073, Start Num: 3
Candidate Starts for Kamashten_51:
(Start: 3 @43624 has 7 MA's), (Start: 7 @43642 has 44 MA's), (12, 43708), (13, 43717), (14, 43741), (16, 43771), (17, 43777), (18, 43780), (21, 43843), (24, 43894), (29, 44014),

Gene: Keitabear_52 Start: 45143, Stop: 45592, Start Num: 3
Candidate Starts for Keitabear_52:
(Start: 3 @45143 has 7 MA's), (Start: 7 @45161 has 44 MA's), (12, 45227), (13, 45236), (14, 45260), (16, 45290), (18, 45299), (21, 45362), (24, 45413), (29, 45533),

Gene: Kewpiedoll_53 Start: 44593, Stop: 45024, Start Num: 7
Candidate Starts for Kewpiedoll_53:
(Start: 3 @44575 has 7 MA's), (Start: 7 @44593 has 44 MA's), (12, 44659), (13, 44668), (14, 44692), (16, 44722), (17, 44728), (18, 44731), (21, 44794), (24, 44845), (29, 44965),

Gene: Kroos_51 Start: 43861, Stop: 44280, Start Num: 7
Candidate Starts for Kroos_51:
(Start: 7 @43861 has 44 MA's), (12, 43927), (13, 43936), (14, 43960), (16, 43990), (17, 43996), (18, 43999), (21, 44062), (31, 44248),

Gene: Kwekel_48 Start: 40407, Stop: 40859, Start Num: 2
Candidate Starts for Kwekel_48:
(Start: 2 @40407 has 16 MA's), (Start: 4 @40434 has 9 MA's), (9, 40464), (17, 40578), (18, 40581), (19, 40587), (22, 40671), (23, 40674),

Gene: Kwobi_53 Start: 44287, Stop: 44706, Start Num: 7
Candidate Starts for Kwobi_53:
(Start: 7 @44287 has 44 MA's), (12, 44353), (13, 44362), (14, 44386), (16, 44416), (17, 44422), (18, 44425), (21, 44488), (31, 44674),

Gene: Lennon_52 Start: 45259, Stop: 45696, Start Num: 7
Candidate Starts for Lennon_52:
(Start: 7 @45259 has 44 MA's), (13, 45337), (14, 45361), (16, 45391), (17, 45397), (18, 45400), (29, 45637),

Gene: Leonard_50 Start: 43083, Stop: 43541, Start Num: 4
Candidate Starts for Leonard_50:
(Start: 4 @43083 has 9 MA's), (11, 43152), (16, 43218), (18, 43227), (20, 43239), (26, 43425), (30, 43497),

Gene: LilHam_48 Start: 42466, Stop: 42891, Start Num: 7
Candidate Starts for LilHam_48:
(Start: 7 @42466 has 44 MA's), (12, 42532), (13, 42541), (14, 42565), (16, 42595), (17, 42601), (18, 42604), (21, 42667),

Gene: Lilbeanie_54 Start: 40084, Stop: 40515, Start Num: 5
Candidate Starts for Lilbeanie_54:
(Start: 5 @40084 has 1 MA's), (9, 40105), (10, 40114), (14, 40183), (15, 40195), (18, 40222), (27, 40432), (30, 40486),

Gene: Love_57 Start: 45871, Stop: 46302, Start Num: 7
Candidate Starts for Love_57:
(Start: 7 @45871 has 44 MA's), (13, 45949), (14, 45973), (16, 46003), (17, 46009), (18, 46012),

Gene: McCrothy_53 Start: 45001, Stop: 45432, Start Num: 7
Candidate Starts for McCrothy_53:
(Start: 7 @45001 has 44 MA's), (13, 45079), (14, 45103), (16, 45133), (17, 45139), (18, 45142),

Gene: McKinley_55 Start: 44999, Stop: 45430, Start Num: 7
Candidate Starts for McKinley_55:
(Start: 3 @44981 has 7 MA's), (Start: 7 @44999 has 44 MA's), (12, 45065), (13, 45074), (14, 45098), (16, 45128), (18, 45137), (21, 45200), (24, 45251), (29, 45371),

Gene: MelBins_51 Start: 43331, Stop: 43798, Start Num: 4
Candidate Starts for MelBins_51:
(Start: 4 @43331 has 9 MA's), (11, 43400), (16, 43466), (18, 43475), (20, 43487), (26, 43673), (30, 43745),

Gene: MoontowerMania_52 Start: 44858, Stop: 45307, Start Num: 3
Candidate Starts for MoontowerMania_52:
(Start: 3 @44858 has 7 MA's), (Start: 7 @44876 has 44 MA's), (12, 44942), (13, 44951), (14, 44975), (16, 45005), (18, 45014), (21, 45077), (24, 45128), (29, 45248),

Gene: Natkenzie_52 Start: 44653, Stop: 45099, Start Num: 2
Candidate Starts for Natkenzie_52:
(Start: 2 @44653 has 16 MA's), (9, 44704), (18, 44821), (28, 45055),

Gene: Nordenberg_48 Start: 43784, Stop: 44212, Start Num: 7
Candidate Starts for Nordenberg_48:
(Start: 3 @43766 has 7 MA's), (Start: 7 @43784 has 44 MA's), (13, 43859), (14, 43883), (16, 43913), (17, 43919), (18, 43922),

Gene: Paries_56 Start: 45258, Stop: 45689, Start Num: 7
Candidate Starts for Paries_56:
(Start: 7 @45258 has 44 MA's), (13, 45336), (14, 45360), (16, 45390), (17, 45396), (18, 45399),

Gene: Phauci_43 Start: 40003, Stop: 40461, Start Num: 4
Candidate Starts for Phauci_43:
(Start: 4 @40003 has 9 MA's), (11, 40072), (16, 40138), (18, 40147), (20, 40159), (26, 40345), (30, 40417),

Gene: Phinally_50 Start: 43080, Stop: 43538, Start Num: 4
Candidate Starts for Phinally_50:
(Start: 4 @43080 has 9 MA's), (11, 43149), (16, 43215), (18, 43224), (20, 43236), (26, 43422), (30, 43494),

Gene: Pumpkiney_53 Start: 41990, Stop: 42436, Start Num: 2
Candidate Starts for Pumpkiney_53:
(Start: 2 @41990 has 16 MA's), (9, 42041), (18, 42158), (28, 42392),

Gene: Ribeye_51 Start: 44279, Stop: 44704, Start Num: 7
Candidate Starts for Ribeye_51:
(Start: 7 @44279 has 44 MA's), (12, 44345), (13, 44354), (14, 44378), (16, 44408), (17, 44414), (18, 44417), (21, 44480),

Gene: RiverRaider_53 Start: 42945, Stop: 43403, Start Num: 3
Candidate Starts for RiverRaider_53:
(Start: 3 @42945 has 7 MA's), (Start: 7 @42966 has 44 MA's), (13, 43044), (14, 43068), (16, 43098), (17, 43104), (18, 43107), (30, 43353),

Gene: RoadKill_46 Start: 40012, Stop: 40464, Start Num: 2
Candidate Starts for RoadKill_46:
(Start: 2 @40012 has 16 MA's), (Start: 4 @40039 has 9 MA's), (9, 40069), (17, 40183), (18, 40186), (19, 40192), (22, 40276), (23, 40279),

Gene: Rofo_52 Start: 44363, Stop: 44803, Start Num: 7
Candidate Starts for Rofo_52:
(Start: 7 @44363 has 44 MA's), (13, 44441), (14, 44465), (16, 44495), (17, 44501), (18, 44504), (29, 44744),

Gene: Sampson_52 Start: 44598, Stop: 45044, Start Num: 2
Candidate Starts for Sampson_52:
(Start: 2 @44598 has 16 MA's), (9, 44649), (18, 44766), (28, 45000),

Gene: Sanjuju_51 Start: 45098, Stop: 45532, Start Num: 7

Candidate Starts for Sanjuju_51:
(Start: 7 @45098 has 44 MA's), (13, 45176), (14, 45200), (16, 45230), (17, 45236), (18, 45239),

Gene: Saronaya_51 Start: 43578, Stop: 44003, Start Num: 7
Candidate Starts for Saronaya_51:
(Start: 7 @43578 has 44 MA's), (12, 43644), (13, 43653), (14, 43677), (16, 43707), (17, 43713), (18, 43716), (21, 43779),

Gene: SchottB_49 Start: 44121, Stop: 44540, Start Num: 7
Candidate Starts for SchottB_49:
(Start: 7 @44121 has 44 MA's), (12, 44187), (13, 44196), (14, 44220), (17, 44256), (18, 44259), (21, 44322), (31, 44508),

Gene: Scioto_53 Start: 44654, Stop: 45100, Start Num: 2
Candidate Starts for Scioto_53:
(Start: 2 @44654 has 16 MA's), (9, 44705), (18, 44822), (28, 45056),

Gene: Sedona_52 Start: 44841, Stop: 45272, Start Num: 7
Candidate Starts for Sedona_52:
(Start: 3 @44823 has 7 MA's), (Start: 7 @44841 has 44 MA's), (12, 44907), (13, 44916), (14, 44940), (16, 44970), (18, 44979), (21, 45042), (24, 45093), (29, 45213),

Gene: Shivanishola_52 Start: 43544, Stop: 43993, Start Num: 3
Candidate Starts for Shivanishola_52:
(Start: 3 @43544 has 7 MA's), (Start: 7 @43562 has 44 MA's), (12, 43628), (13, 43637), (14, 43661), (16, 43691), (18, 43700), (21, 43763), (24, 43814), (29, 43934),

Gene: Sitar_52 Start: 45259, Stop: 45696, Start Num: 7
Candidate Starts for Sitar_52:
(Start: 7 @45259 has 44 MA's), (13, 45337), (14, 45361), (16, 45391), (17, 45397), (18, 45400), (29, 45637),

Gene: StorminNorm_50 Start: 43212, Stop: 43631, Start Num: 7
Candidate Starts for StorminNorm_50:
(Start: 7 @43212 has 44 MA's), (12, 43278), (13, 43287), (14, 43311), (17, 43347), (18, 43350), (21, 43413), (31, 43599),

Gene: Stultus_50 Start: 43742, Stop: 44173, Start Num: 7
Candidate Starts for Stultus_50:
(Start: 3 @43724 has 7 MA's), (Start: 7 @43742 has 44 MA's), (12, 43808), (13, 43817), (14, 43841), (16, 43871), (18, 43880), (21, 43943), (24, 43994), (29, 44114),

Gene: Tangent_53 Start: 43986, Stop: 44426, Start Num: 7
Candidate Starts for Tangent_53:
(Start: 7 @43986 has 44 MA's), (13, 44064), (14, 44088), (16, 44118), (17, 44124), (18, 44127), (29, 44367),

Gene: Tangerine_50 Start: 42990, Stop: 43415, Start Num: 7
Candidate Starts for Tangerine_50:
(Start: 7 @42990 has 44 MA's), (12, 43056), (13, 43065), (14, 43089), (16, 43119), (17, 43125), (18, 43128), (21, 43191),

Gene: Tardus_54 Start: 44355, Stop: 44801, Start Num: 2

Candidate Starts for Tardus_54:
(Start: 2 @44355 has 16 MA's), (9, 44406), (18, 44523), (28, 44757),

Gene: Thing3_51 Start: 43642, Stop: 44073, Start Num: 7
Candidate Starts for Thing3_51:
(Start: 3 @43624 has 7 MA's), (Start: 7 @43642 has 44 MA's), (12, 43708), (13, 43717), (14, 43741), (16, 43771), (17, 43777), (18, 43780), (21, 43843), (24, 43894), (29, 44014),

Gene: Tiamoceli_49 Start: 41303, Stop: 41755, Start Num: 2
Candidate Starts for Tiamoceli_49:
(Start: 2 @41303 has 16 MA's), (Start: 4 @41330 has 9 MA's), (9, 41360), (17, 41474), (18, 41477), (19, 41483), (22, 41567), (23, 41570),

Gene: Twonlo_46 Start: 39933, Stop: 40385, Start Num: 2
Candidate Starts for Twonlo_46:
(Start: 2 @39933 has 16 MA's), (Start: 4 @39960 has 9 MA's), (9, 39990), (17, 40104), (18, 40107), (19, 40113), (22, 40197), (23, 40200),

Gene: Tycho_50 Start: 43080, Stop: 43499, Start Num: 7
Candidate Starts for Tycho_50:
(Start: 7 @43080 has 44 MA's), (12, 43146), (13, 43155), (14, 43179), (17, 43215), (18, 43218), (21, 43281), (31, 43467),

Gene: Verity_52 Start: 45424, Stop: 45870, Start Num: 2
Candidate Starts for Verity_52:
(Start: 2 @45424 has 16 MA's), (9, 45475), (18, 45592), (28, 45826),

Gene: ViaConlectus_52 Start: 43307, Stop: 43753, Start Num: 2
Candidate Starts for ViaConlectus_52:
(Start: 2 @43307 has 16 MA's), (9, 43358), (18, 43475), (28, 43709),

Gene: Vivi2_56 Start: 45472, Stop: 45903, Start Num: 7
Candidate Starts for Vivi2_56:
(Start: 3 @45454 has 7 MA's), (Start: 7 @45472 has 44 MA's), (13, 45547), (14, 45571), (16, 45601), (17, 45607), (18, 45610), (21, 45673), (24, 45724), (29, 45844),

Gene: YorkOnyx_52 Start: 43776, Stop: 44195, Start Num: 7
Candidate Starts for YorkOnyx_52:
(Start: 7 @43776 has 44 MA's), (12, 43842), (13, 43851), (14, 43875), (16, 43905), (17, 43911), (18, 43914), (21, 43977), (31, 44163),

Gene: Zipp_53 Start: 45339, Stop: 45785, Start Num: 2
Candidate Starts for Zipp_53:
(Start: 2 @45339 has 16 MA's), (9, 45390), (18, 45507), (28, 45741),

Gene: Zitch_55 Start: 43462, Stop: 43908, Start Num: 2
Candidate Starts for Zitch_55:
(Start: 2 @43462 has 16 MA's), (9, 43513), (18, 43630), (28, 43864),