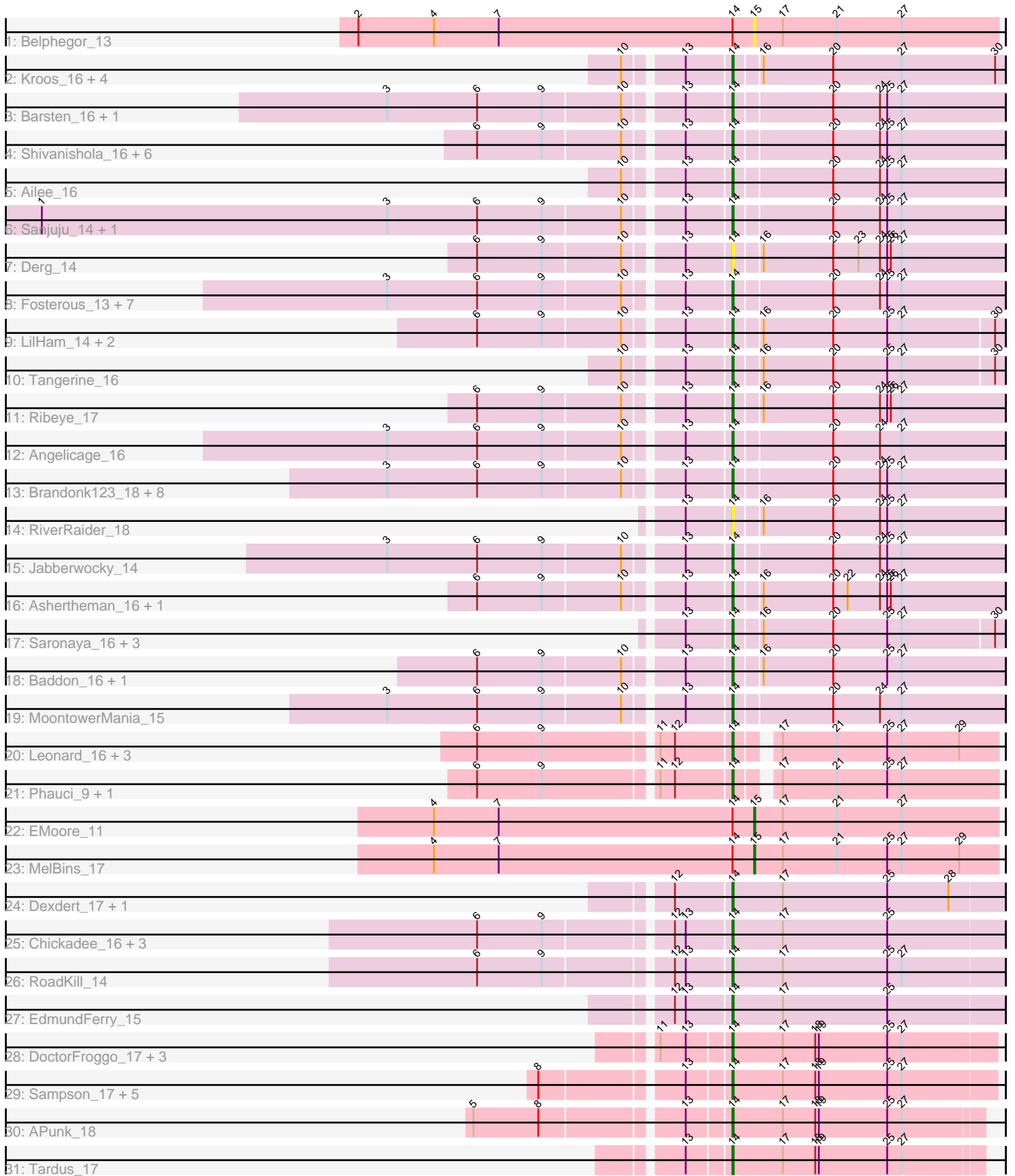


Pham 157800



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 157800 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157800 has 81 members, 17 are drafts.

Phages represented in each track:

- Track 1 : Belphegor_13
- Track 2 : Kroos_16, Flatwoods_17, Bizzy_17, StorminNorm_16, Tycho_16
- Track 3 : Barsten_16, ChadMasterC_16
- Track 4 : Shivanishola_16, Sitar_17, Stultus_16, Kewpiedoll_17, Lennon_17, Bibwit_16, Geodirt_15
- Track 5 : Ailee_16
- Track 6 : Sanjuju_14, Fitzgerald_14
- Track 7 : Derg_14
- Track 8 : Fosterous_13, Rofo_15, Keitabear_17, Affeca_16, Vivi2_15, Kamashten_17, Sedona_17, Thing3_17
- Track 9 : LilHam_14, YorkOnyx_16, SchottB_15
- Track 10 : Tangerine_16
- Track 11 : Ribeye_17
- Track 12 : Angelicage_16
- Track 13 : Brandonk123_18, Paries_16, Nordenberg_10, Tangent_13, McKinley_17, Galadriel_17, Charming_13, Love_17, BobBob_13
- Track 14 : RiverRaider_18
- Track 15 : Jabberwocky_14
- Track 16 : Ashertheman_16, JKSyngboy_15
- Track 17 : Saronaya_16, Gaea_16, Baumdotcom_16, Gustavo_16
- Track 18 : Baddon_16, Kwobi_16
- Track 19 : MoontowerMania_15
- Track 20 : Leonard_16, Inspectinfecti_17, Ali17_14, Phinally_16
- Track 21 : Phauci_9, Hans_18
- Track 22 : EMoore_11
- Track 23 : MelBins_17
- Track 24 : Dextert_17, Kwekel_16
- Track 25 : Chickadee_16, GTE6_17, Tiamoceli_17, Twonlo_14
- Track 26 : RoadKill_14
- Track 27 : EdmundFerry_15
- Track 28 : DoctorFroggo_17, Zipp_17, Delrey21_17, Verity_17
- Track 29 : Sampson_17, Scioto_17, ViaConlectus_17, Natkenzie_17, Abblin_17, Zitch_18
- Track 30 : APunk_18
- Track 31 : Tardus_17

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

The start number called the most often in the published annotations is 14, it was called in 62 of the 64 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- APunk_18, Abblin_17, Affeca_16, Ailee_16, Ali17_14, Angelicage_16, Ashertheman_16, Baddon_16, Barsten_16, Baumdotcom_16, Bibwit_16, Bizzy_17, BobBob_13, Brandonk123_18, ChadMasterC_16, Charming_13, Chickadee_16, Delrey21_17, Derg_14, Dexdert_17, DoctorFroggo_17, EdmundFerry_15, Fitzgerald_14, Flatwoods_17, Fosterous_13, GTE6_17, Gaea_16, Galadriel_17, Geodirt_15, Gustavo_16, Hans_18, Inspectinfecti_17, JKSyngboy_15, Jabberwocky_14, Kamashten_17, Keitabear_17, Kewpiedoll_17, Kroos_16, Kwekel_16, Kwobi_16, Lennon_17, Leonard_16, LilHam_14, Love_17, McKinley_17, MoontowerMania_15, Natkenzie_17, Nordenberg_10, Paries_16, Phauci_9, Phinally_16, Ribeye_17, RiverRaider_18, RoadKill_14, Rofo_15, Sampson_17, Sanjuju_14, Saronaya_16, SchottB_15, Scioto_17, Sedona_17, Shivanishola_16, Sitar_17, StorminNorm_16, Stultus_16, Tangent_13, Tangerine_16, Tardus_17, Thing3_17, Tiamoceli_17, Twonlo_14, Tycho_16, Verity_17, ViaConlectus_17, Vivi2_15, YorkOnyx_16, Zipp_17, Zitch_18,

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

- Belphegor_13, EMoore_11, MelBins_17,

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

-

Summary by start number:

Start 14:

- Found in 81 of 81 (100.0%) of genes in pham
- Manual Annotations of this start: 62 of 64
- Called 96.3% of time when present
- Phage (with cluster) where this start called: APunk_18 (DE4), Abblin_17 (DE4), Affeca_16 (DE1), Ailee_16 (DE1), Ali17_14 (DE2), Angelicage_16 (DE1), Ashertheman_16 (DE1), Baddon_16 (DE1), Barsten_16 (DE1), Baumdotcom_16 (DE1), Bibwit_16 (DE1), Bizzy_17 (DE1), BobBob_13 (DE1), Brandonk123_18 (DE1), ChadMasterC_16 (DE1), Charming_13 (DE1), Chickadee_16 (DE3), Delrey21_17 (DE4), Derg_14 (DE1), Dexdert_17 (DE3), DoctorFroggo_17 (DE4), EdmundFerry_15 (DE3), Fitzgerald_14 (DE1), Flatwoods_17 (DE1), Fosterous_13 (DE1), GTE6_17 (DE3), Gaea_16 (DE1), Galadriel_17 (DE1), Geodirt_15 (DE1), Gustavo_16 (DE1), Hans_18 (DE2), Inspectinfecti_17 (DE2), JKSyngboy_15 (DE1), Jabberwocky_14 (DE1), Kamashten_17 (DE1), Keitabear_17 (DE1), Kewpiedoll_17 (DE1), Kroos_16 (DE1), Kwekel_16 (DE3), Kwobi_16 (DE1), Lennon_17 (DE1), Leonard_16 (DE2), LilHam_14 (DE1), Love_17 (DE1), McKinley_17 (DE1), MoontowerMania_15 (DE1), Natkenzie_17 (DE4), Nordenberg_10 (DE1), Paries_16 (DE1), Phauci_9 (DE2), Phinally_16 (DE2), Ribeye_17 (DE1), RiverRaider_18 (DE1), RoadKill_14 (DE3), Rofo_15 (DE1), Sampson_17 (DE4), Sanjuju_14 (DE1), Saronaya_16 (DE1), SchottB_15 (DE1), Scioto_17 (DE4), Sedona_17 (DE1), Shivanishola_16 (DE1), Sitar_17 (DE1), StorminNorm_16 (DE1), Stultus_16 (DE1), Tangent_13 (DE1), Tangerine_16 (DE1), Tardus_17 (DE4), Thing3_17 (DE1), Tiamoceli_17 (DE3), Twonlo_14 (DE3), Tycho_16 (DE1), Verity_17 (DE4),

ViaConlectus_17 (DE4), Vivi2_15 (DE1), YorkOnyx_16 (DE1), Zipp_17 (DE4), Zitch_18 (DE4),

Start 15:

- Found in 3 of 81 (3.7%) of genes in pham
- Manual Annotations of this start: 2 of 64
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Belphegor_13 (DE), EMoore_11 (DE2), MelBins_17 (DE2),

Summary by clusters:

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

Info for manual annotations of cluster DE1:

- Start number 14 was manually annotated 42 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 14 was manually annotated 5 times for cluster DE2.
- Start number 15 was manually annotated 2 times for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 14 was manually annotated 6 times for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 14 was manually annotated 9 times for cluster DE4.

Gene Information:

Gene: APunk_18 Start: 12612, Stop: 12815, Start Num: 14

Candidate Starts for APunk_18:

(5, 12417), (8, 12471), (13, 12579), (Start: 14 @12612 has 62 MA's), (17, 12651), (18, 12678), (19, 12681), (25, 12738), (27, 12750),

Gene: Abblin_17 Start: 12098, Stop: 12313, Start Num: 14

Candidate Starts for Abblin_17:

(8, 11957), (13, 12065), (Start: 14 @12098 has 62 MA's), (17, 12137), (18, 12164), (19, 12167), (25, 12224), (27, 12236),

Gene: Affeca_16 Start: 12078, Stop: 12296, Start Num: 14

Candidate Starts for Affeca_16:

(3, 11808), (6, 11883), (9, 11937), (10, 12000), (13, 12042), (Start: 14 @12078 has 62 MA's), (20, 12153), (24, 12192), (25, 12198), (27, 12210),

Gene: Ailee_16 Start: 11968, Stop: 12186, Start Num: 14

Candidate Starts for Ailee_16:

(10, 11890), (13, 11932), (Start: 14 @11968 has 62 MA's), (20, 12043), (24, 12082), (25, 12088), (27, 12100),

Gene: Ali17_14 Start: 10793, Stop: 10996, Start Num: 14

Candidate Starts for Ali17_14:

(6, 10595), (9, 10649), (11, 10736), (12, 10748), (Start: 14 @10793 has 62 MA's), (17, 10817), (21, 10862), (25, 10904), (27, 10916), (29, 10964),

Gene: Angelicage_16 Start: 12501, Stop: 12719, Start Num: 14

Candidate Starts for Angelicage_16:

(3, 12231), (6, 12306), (9, 12360), (10, 12423), (13, 12465), (Start: 14 @12501 has 62 MA's), (20, 12576), (24, 12615), (27, 12633),

Gene: Ashertheman_16 Start: 10750, Stop: 10968, Start Num: 14

Candidate Starts for Ashertheman_16:

(6, 10555), (9, 10609), (10, 10672), (13, 10714), (Start: 14 @10750 has 62 MA's), (16, 10768), (20, 10825), (22, 10837), (24, 10864), (25, 10870), (26, 10873), (27, 10882),

Gene: Baddon_16 Start: 11337, Stop: 11555, Start Num: 14

Candidate Starts for Baddon_16:

(6, 11142), (9, 11196), (10, 11259), (13, 11301), (Start: 14 @11337 has 62 MA's), (16, 11355), (20, 11412), (25, 11457), (27, 11469),

Gene: Barsten_16 Start: 11562, Stop: 11780, Start Num: 14

Candidate Starts for Barsten_16:

(3, 11292), (6, 11367), (9, 11421), (10, 11484), (13, 11526), (Start: 14 @11562 has 62 MA's), (20, 11637), (24, 11676), (25, 11682), (27, 11694),

Gene: Baumdotcom_16 Start: 10671, Stop: 10886, Start Num: 14

Candidate Starts for Baumdotcom_16:

(13, 10635), (Start: 14 @10671 has 62 MA's), (16, 10689), (20, 10746), (25, 10791), (27, 10803), (30, 10878),

Gene: Belphegor_13 Start: 10042, Stop: 10245, Start Num: 15

Candidate Starts for Belphegor_13:

(2, 9712), (4, 9775), (7, 9829), (Start: 14 @10024 has 62 MA's), (Start: 15 @10042 has 2 MA's), (17, 10066), (21, 10111), (27, 10165),

Gene: Bibwit_16 Start: 11809, Stop: 12027, Start Num: 14

Candidate Starts for Bibwit_16:

(6, 11614), (9, 11668), (10, 11731), (13, 11773), (Start: 14 @11809 has 62 MA's), (20, 11884), (24, 11923), (25, 11929), (27, 11941),

Gene: Bizzy_17 Start: 10947, Stop: 11165, Start Num: 14

Candidate Starts for Bizzy_17:

(10, 10869), (13, 10911), (Start: 14 @10947 has 62 MA's), (16, 10965), (20, 11022), (27, 11079), (30, 11157),

Gene: BobBob_13 Start: 10392, Stop: 10610, Start Num: 14

Candidate Starts for BobBob_13:

(3, 10122), (6, 10197), (9, 10251), (10, 10314), (13, 10356), (Start: 14 @10392 has 62 MA's), (20, 10467), (24, 10506), (25, 10512), (27, 10524),

Gene: Brandonk123_18 Start: 11539, Stop: 11757, Start Num: 14

Candidate Starts for Brandonk123_18:

(3, 11269), (6, 11344), (9, 11398), (10, 11461), (13, 11503), (Start: 14 @11539 has 62 MA's), (20, 11614), (24, 11653), (25, 11659), (27, 11671),

Gene: ChadMasterC_16 Start: 11192, Stop: 11410, Start Num: 14

Candidate Starts for ChadMasterC_16:

(3, 10922), (6, 10997), (9, 11051), (10, 11114), (13, 11156), (Start: 14 @11192 has 62 MA's), (20, 11267), (24, 11306), (25, 11312), (27, 11324),

Gene: Charming_13 Start: 10394, Stop: 10612, Start Num: 14

Candidate Starts for Charming_13:

(3, 10124), (6, 10199), (9, 10253), (10, 10316), (13, 10358), (Start: 14 @10394 has 62 MA's), (20, 10469), (24, 10508), (25, 10514), (27, 10526),

Gene: Chickadee_16 Start: 10244, Stop: 10465, Start Num: 14

Candidate Starts for Chickadee_16:

(6, 10049), (9, 10103), (12, 10199), (13, 10208), (Start: 14 @10244 has 62 MA's), (17, 10283), (25, 10370),

Gene: Delrey21_17 Start: 11558, Stop: 11773, Start Num: 14

Candidate Starts for Delrey21_17:

(11, 11504), (13, 11525), (Start: 14 @11558 has 62 MA's), (17, 11597), (18, 11624), (19, 11627), (25, 11684), (27, 11696),

Gene: Derg_14 Start: 9963, Stop: 10181, Start Num: 14

Candidate Starts for Derg_14:

(6, 9768), (9, 9822), (10, 9885), (13, 9927), (Start: 14 @9963 has 62 MA's), (16, 9981), (20, 10038), (23, 10059), (24, 10077), (25, 10083), (26, 10086), (27, 10095),

Gene: Dextert_17 Start: 10675, Stop: 10896, Start Num: 14

Candidate Starts for Dextert_17:

(12, 10630), (Start: 14 @10675 has 62 MA's), (17, 10714), (25, 10801), (28, 10852),

Gene: DoctorFroggo_17 Start: 11558, Stop: 11773, Start Num: 14

Candidate Starts for DoctorFroggo_17:

(11, 11504), (13, 11525), (Start: 14 @11558 has 62 MA's), (17, 11597), (18, 11624), (19, 11627), (25, 11684), (27, 11696),

Gene: EMoore_11 Start: 9124, Stop: 9327, Start Num: 15

Candidate Starts for EMoore_11:

(4, 8857), (7, 8911), (Start: 14 @9106 has 62 MA's), (Start: 15 @9124 has 2 MA's), (17, 9148), (21, 9193), (27, 9247),

Gene: EdmundFerry_15 Start: 10262, Stop: 10483, Start Num: 14

Candidate Starts for EdmundFerry_15:

(12, 10217), (13, 10226), (Start: 14 @10262 has 62 MA's), (17, 10301), (25, 10388),

Gene: Fitzgerald_14 Start: 11299, Stop: 11517, Start Num: 14

Candidate Starts for Fitzgerald_14:

(1, 10741), (3, 11029), (6, 11104), (9, 11158), (10, 11221), (13, 11263), (Start: 14 @11299 has 62 MA's), (20, 11374), (24, 11413), (25, 11419), (27, 11431),

Gene: Flatwoods_17 Start: 10951, Stop: 11169, Start Num: 14

Candidate Starts for Flatwoods_17:

(10, 10873), (13, 10915), (Start: 14 @10951 has 62 MA's), (16, 10969), (20, 11026), (27, 11083), (30, 11161),

Gene: Fosterous_13 Start: 11322, Stop: 11540, Start Num: 14

Candidate Starts for Fosterous_13:

(3, 11052), (6, 11127), (9, 11181), (10, 11244), (13, 11286), (Start: 14 @11322 has 62 MA's), (20, 11397), (24, 11436), (25, 11442), (27, 11454),

Gene: GTE6_17 Start: 10760, Stop: 10981, Start Num: 14

Candidate Starts for GTE6_17:

(6, 10565), (9, 10619), (12, 10715), (13, 10724), (Start: 14 @10760 has 62 MA's), (17, 10799), (25, 10886),

Gene: Gaea_16 Start: 10651, Stop: 10866, Start Num: 14

Candidate Starts for Gaea_16:

(13, 10615), (Start: 14 @10651 has 62 MA's), (16, 10669), (20, 10726), (25, 10771), (27, 10783), (30, 10858),

Gene: Galadriel_17 Start: 11160, Stop: 11378, Start Num: 14

Candidate Starts for Galadriel_17:

(3, 10890), (6, 10965), (9, 11019), (10, 11082), (13, 11124), (Start: 14 @11160 has 62 MA's), (20, 11235), (24, 11274), (25, 11280), (27, 11292),

Gene: Geodirt_15 Start: 11049, Stop: 11267, Start Num: 14

Candidate Starts for Geodirt_15:

(6, 10854), (9, 10908), (10, 10971), (13, 11013), (Start: 14 @11049 has 62 MA's), (20, 11124), (24, 11163), (25, 11169), (27, 11181),

Gene: Gustavo_16 Start: 10762, Stop: 10977, Start Num: 14

Candidate Starts for Gustavo_16:

(13, 10726), (Start: 14 @10762 has 62 MA's), (16, 10780), (20, 10837), (25, 10882), (27, 10894), (30, 10969),

Gene: Hans_18 Start: 11337, Stop: 11540, Start Num: 14

Candidate Starts for Hans_18:

(6, 11139), (9, 11193), (11, 11280), (12, 11292), (Start: 14 @11337 has 62 MA's), (17, 11361), (21, 11406), (25, 11448), (27, 11460),

Gene: Inspectinfecti_17 Start: 11796, Stop: 11999, Start Num: 14

Candidate Starts for Inspectinfecti_17:

(6, 11598), (9, 11652), (11, 11739), (12, 11751), (Start: 14 @11796 has 62 MA's), (17, 11820), (21, 11865), (25, 11907), (27, 11919), (29, 11967),

Gene: JKSyngboy_15 Start: 11150, Stop: 11368, Start Num: 14

Candidate Starts for JKSyngboy_15:

(6, 10955), (9, 11009), (10, 11072), (13, 11114), (Start: 14 @11150 has 62 MA's), (16, 11168), (20, 11225), (22, 11237), (24, 11264), (25, 11270), (26, 11273), (27, 11282),

Gene: Jabberwocky_14 Start: 11712, Stop: 11930, Start Num: 14

Candidate Starts for Jabberwocky_14:

(3, 11442), (6, 11517), (9, 11571), (10, 11634), (13, 11676), (Start: 14 @11712 has 62 MA's), (20, 11787), (24, 11826), (25, 11832), (27, 11844),

Gene: Kamashten_17 Start: 12392, Stop: 12610, Start Num: 14

Candidate Starts for Kamashten_17:

(3, 12122), (6, 12197), (9, 12251), (10, 12314), (13, 12356), (Start: 14 @12392 has 62 MA's), (20, 12467), (24, 12506), (25, 12512), (27, 12524),

Gene: Keitabear_17 Start: 13525, Stop: 13743, Start Num: 14

Candidate Starts for Keitabear_17:

(3, 13255), (6, 13330), (9, 13384), (10, 13447), (13, 13489), (Start: 14 @13525 has 62 MA's), (20, 13600), (24, 13639), (25, 13645), (27, 13657),

Gene: Kewpiedoll_17 Start: 11773, Stop: 11991, Start Num: 14

Candidate Starts for Kewpiedoll_17:

(6, 11578), (9, 11632), (10, 11695), (13, 11737), (Start: 14 @11773 has 62 MA's), (20, 11848), (24, 11887), (25, 11893), (27, 11905),

Gene: Kroos_16 Start: 10788, Stop: 11006, Start Num: 14

Candidate Starts for Kroos_16:

(10, 10710), (13, 10752), (Start: 14 @10788 has 62 MA's), (16, 10806), (20, 10863), (27, 10920), (30, 10998),

Gene: Kwekel_16 Start: 10216, Stop: 10437, Start Num: 14

Candidate Starts for Kwekel_16:

(12, 10171), (Start: 14 @10216 has 62 MA's), (17, 10255), (25, 10342), (28, 10393),

Gene: Kwobi_16 Start: 10753, Stop: 10971, Start Num: 14

Candidate Starts for Kwobi_16:

(6, 10558), (9, 10612), (10, 10675), (13, 10717), (Start: 14 @10753 has 62 MA's), (16, 10771), (20, 10828), (25, 10873), (27, 10885),

Gene: Lennon_17 Start: 12632, Stop: 12850, Start Num: 14

Candidate Starts for Lennon_17:

(6, 12437), (9, 12491), (10, 12554), (13, 12596), (Start: 14 @12632 has 62 MA's), (20, 12707), (24, 12746), (25, 12752), (27, 12764),

Gene: Leonard_16 Start: 11391, Stop: 11594, Start Num: 14

Candidate Starts for Leonard_16:

(6, 11193), (9, 11247), (11, 11334), (12, 11346), (Start: 14 @11391 has 62 MA's), (17, 11415), (21, 11460), (25, 11502), (27, 11514), (29, 11562),

Gene: LilHam_14 Start: 10069, Stop: 10284, Start Num: 14

Candidate Starts for LilHam_14:

(6, 9874), (9, 9928), (10, 9991), (13, 10033), (Start: 14 @10069 has 62 MA's), (16, 10087), (20, 10144), (25, 10189), (27, 10201), (30, 10276),

Gene: Love_17 Start: 11471, Stop: 11689, Start Num: 14

Candidate Starts for Love_17:

(3, 11201), (6, 11276), (9, 11330), (10, 11393), (13, 11435), (Start: 14 @11471 has 62 MA's), (20, 11546), (24, 11585), (25, 11591), (27, 11603),

Gene: McKinley_17 Start: 11930, Stop: 12148, Start Num: 14

Candidate Starts for McKinley_17:

(3, 11660), (6, 11735), (9, 11789), (10, 11852), (13, 11894), (Start: 14 @11930 has 62 MA's), (20, 12005), (24, 12044), (25, 12050), (27, 12062),

Gene: MelBins_17 Start: 11587, Stop: 11790, Start Num: 15

Candidate Starts for MelBins_17:

(4, 11320), (7, 11374), (Start: 14 @11569 has 62 MA's), (Start: 15 @11587 has 2 MA's), (17, 11611), (21, 11656), (25, 11698), (27, 11710), (29, 11758),

Gene: MoontowerMania_15 Start: 10935, Stop: 11153, Start Num: 14

Candidate Starts for MoontowerMania_15:

(3, 10665), (6, 10740), (9, 10794), (10, 10857), (13, 10899), (Start: 14 @10935 has 62 MA's), (20, 11010), (24, 11049), (27, 11067),

Gene: Natkenzie_17 Start: 12098, Stop: 12313, Start Num: 14

Candidate Starts for Natkenzie_17:

(8, 11957), (13, 12065), (Start: 14 @12098 has 62 MA's), (17, 12137), (18, 12164), (19, 12167), (25, 12224), (27, 12236),

Gene: Nordenberg_10 Start: 9821, Stop: 10039, Start Num: 14

Candidate Starts for Nordenberg_10:

(3, 9551), (6, 9626), (9, 9680), (10, 9743), (13, 9785), (Start: 14 @9821 has 62 MA's), (20, 9896), (24, 9935), (25, 9941), (27, 9953),

Gene: Paries_16 Start: 11162, Stop: 11380, Start Num: 14

Candidate Starts for Paries_16:

(3, 10892), (6, 10967), (9, 11021), (10, 11084), (13, 11126), (Start: 14 @11162 has 62 MA's), (20, 11237), (24, 11276), (25, 11282), (27, 11294),

Gene: Phauci_9 Start: 7921, Stop: 8124, Start Num: 14

Candidate Starts for Phauci_9:

(6, 7723), (9, 7777), (11, 7864), (12, 7876), (Start: 14 @7921 has 62 MA's), (17, 7945), (21, 7990), (25, 8032), (27, 8044),

Gene: Phinally_16 Start: 11388, Stop: 11591, Start Num: 14

Candidate Starts for Phinally_16:

(6, 11190), (9, 11244), (11, 11331), (12, 11343), (Start: 14 @11388 has 62 MA's), (17, 11412), (21, 11457), (25, 11499), (27, 11511), (29, 11559),

Gene: Ribeye_17 Start: 10948, Stop: 11166, Start Num: 14

Candidate Starts for Ribeye_17:

(6, 10753), (9, 10807), (10, 10870), (13, 10912), (Start: 14 @10948 has 62 MA's), (16, 10966), (20, 11023), (24, 11062), (25, 11068), (26, 11071), (27, 11080),

Gene: RiverRaider_18 Start: 10375, Stop: 10593, Start Num: 14

Candidate Starts for RiverRaider_18:

(13, 10339), (Start: 14 @10375 has 62 MA's), (16, 10393), (20, 10450), (24, 10489), (25, 10495), (27, 10507),

Gene: RoadKill_14 Start: 9718, Stop: 9939, Start Num: 14

Candidate Starts for RoadKill_14:

(6, 9523), (9, 9577), (12, 9673), (13, 9682), (Start: 14 @9718 has 62 MA's), (17, 9757), (25, 9844), (27, 9856),

Gene: Rofo_15 Start: 11414, Stop: 11632, Start Num: 14

Candidate Starts for Rofo_15:

(3, 11144), (6, 11219), (9, 11273), (10, 11336), (13, 11378), (Start: 14 @11414 has 62 MA's), (20, 11489), (24, 11528), (25, 11534), (27, 11546),

Gene: Sampson_17 Start: 12043, Stop: 12258, Start Num: 14

Candidate Starts for Sampson_17:

(8, 11902), (13, 12010), (Start: 14 @12043 has 62 MA's), (17, 12082), (18, 12109), (19, 12112), (25, 12169), (27, 12181),

Gene: Sanjuju_14 Start: 11339, Stop: 11557, Start Num: 14

Candidate Starts for Sanjuju_14:

(1, 10781), (3, 11069), (6, 11144), (9, 11198), (10, 11261), (13, 11303), (Start: 14 @11339 has 62 MA's), (20, 11414), (24, 11453), (25, 11459), (27, 11471),

Gene: Saronaya_16 Start: 10762, Stop: 10977, Start Num: 14

Candidate Starts for Saronaya_16:

(13, 10726), (Start: 14 @10762 has 62 MA's), (16, 10780), (20, 10837), (25, 10882), (27, 10894), (30, 10969),

Gene: SchottB_15 Start: 11751, Stop: 11966, Start Num: 14

Candidate Starts for SchottB_15:

(6, 11556), (9, 11610), (10, 11673), (13, 11715), (Start: 14 @11751 has 62 MA's), (16, 11769), (20, 11826), (25, 11871), (27, 11883), (30, 11958),

Gene: Scioto_17 Start: 12098, Stop: 12313, Start Num: 14

Candidate Starts for Scioto_17:

(8, 11957), (13, 12065), (Start: 14 @12098 has 62 MA's), (17, 12137), (18, 12164), (19, 12167), (25, 12224), (27, 12236),

Gene: Sedona_17 Start: 13258, Stop: 13476, Start Num: 14

Candidate Starts for Sedona_17:

(3, 12988), (6, 13063), (9, 13117), (10, 13180), (13, 13222), (Start: 14 @13258 has 62 MA's), (20, 13333), (24, 13372), (25, 13378), (27, 13390),

Gene: Shivanishola_16 Start: 11656, Stop: 11874, Start Num: 14

Candidate Starts for Shivanishola_16:

(6, 11461), (9, 11515), (10, 11578), (13, 11620), (Start: 14 @11656 has 62 MA's), (20, 11731), (24, 11770), (25, 11776), (27, 11788),

Gene: Sitar_17 Start: 12632, Stop: 12850, Start Num: 14

Candidate Starts for Sitar_17:

(6, 12437), (9, 12491), (10, 12554), (13, 12596), (Start: 14 @12632 has 62 MA's), (20, 12707), (24, 12746), (25, 12752), (27, 12764),

Gene: StorminNorm_16 Start: 10639, Stop: 10857, Start Num: 14

Candidate Starts for StorminNorm_16:

(10, 10561), (13, 10603), (Start: 14 @10639 has 62 MA's), (16, 10657), (20, 10714), (27, 10771), (30, 10849),

Gene: Stultus_16 Start: 11631, Stop: 11849, Start Num: 14

Candidate Starts for Stultus_16:

(6, 11436), (9, 11490), (10, 11553), (13, 11595), (Start: 14 @11631 has 62 MA's), (20, 11706), (24, 11745), (25, 11751), (27, 11763),

Gene: Tangent_13 Start: 10394, Stop: 10612, Start Num: 14

Candidate Starts for Tangent_13:

(3, 10124), (6, 10199), (9, 10253), (10, 10316), (13, 10358), (Start: 14 @10394 has 62 MA's), (20, 10469), (24, 10508), (25, 10514), (27, 10526),

Gene: Tangerine_16 Start: 10648, Stop: 10863, Start Num: 14

Candidate Starts for Tangerine_16:

(10, 10570), (13, 10612), (Start: 14 @10648 has 62 MA's), (16, 10666), (20, 10723), (25, 10768), (27, 10780), (30, 10855),

Gene: Tardus_17 Start: 10346, Stop: 10549, Start Num: 14

Candidate Starts for Tardus_17:

(13, 10313), (Start: 14 @10346 has 62 MA's), (17, 10385), (18, 10412), (19, 10415), (25, 10472), (27, 10484),

Gene: Thing3_17 Start: 12392, Stop: 12610, Start Num: 14

Candidate Starts for Thing3_17:

(3, 12122), (6, 12197), (9, 12251), (10, 12314), (13, 12356), (Start: 14 @12392 has 62 MA's), (20, 12467), (24, 12506), (25, 12512), (27, 12524),

Gene: Tiamoceli_17 Start: 11101, Stop: 11322, Start Num: 14

Candidate Starts for Tiamoceli_17:

(6, 10906), (9, 10960), (12, 11056), (13, 11065), (Start: 14 @11101 has 62 MA's), (17, 11140), (25, 11227),

Gene: Twonlo_14 Start: 9718, Stop: 9939, Start Num: 14

Candidate Starts for Twonlo_14:

(6, 9523), (9, 9577), (12, 9673), (13, 9682), (Start: 14 @9718 has 62 MA's), (17, 9757), (25, 9844),

Gene: Tycho_16 Start: 10762, Stop: 10980, Start Num: 14

Candidate Starts for Tycho_16:

(10, 10684), (13, 10726), (Start: 14 @10762 has 62 MA's), (16, 10780), (20, 10837), (27, 10894), (30, 10972),

Gene: Verity_17 Start: 11558, Stop: 11773, Start Num: 14

Candidate Starts for Verity_17:

(11, 11504), (13, 11525), (Start: 14 @11558 has 62 MA's), (17, 11597), (18, 11624), (19, 11627), (25, 11684), (27, 11696),

Gene: ViaConlectus_17 Start: 12113, Stop: 12328, Start Num: 14

Candidate Starts for ViaConlectus_17:

(8, 11972), (13, 12080), (Start: 14 @12113 has 62 MA's), (17, 12152), (18, 12179), (19, 12182), (25, 12239), (27, 12251),

Gene: Vivi2_15 Start: 11586, Stop: 11804, Start Num: 14

Candidate Starts for Vivi2_15:

(3, 11316), (6, 11391), (9, 11445), (10, 11508), (13, 11550), (Start: 14 @11586 has 62 MA's), (20, 11661), (24, 11700), (25, 11706), (27, 11718),

Gene: YorkOnyx_16 Start: 10597, Stop: 10812, Start Num: 14

Candidate Starts for YorkOnyx_16:

(6, 10402), (9, 10456), (10, 10519), (13, 10561), (Start: 14 @10597 has 62 MA's), (16, 10615), (20, 10672), (25, 10717), (27, 10729), (30, 10804),

Gene: Zipp_17 Start: 11703, Stop: 11918, Start Num: 14

Candidate Starts for Zipp_17:

(11, 11649), (13, 11670), (Start: 14 @11703 has 62 MA's), (17, 11742), (18, 11769), (19, 11772), (25, 11829), (27, 11841),

Gene: Zitch_18 Start: 11028, Stop: 11231, Start Num: 14

Candidate Starts for Zitch_18:

(8, 10887), (13, 10995), (Start: 14 @11028 has 62 MA's), (17, 11067), (18, 11094), (19, 11097), (25, 11154), (27, 11166),