

Pham 1355



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 1355 Report

This analysis was run 04/28/24 on database version 559.

Pham number 1355 has 82 members, 17 are drafts.

Phages represented in each track:

- Track 1 : Belphegor_46
- Track 2 : Galadriel_46, Charming_47, Paries_49, Tangent_47, Jabberwocky_45, Rofo_47, Love_50
- Track 3 : RiverRaider_48
- Track 4 : JKSyngboy_44, Gustavo_46, Saronaya_46
- Track 5 : Ribeye_47, Derg_44
- Track 6 : Affeca_44, Lennon_46, Geodirt_45, ChadMasterC_47, Keitabear_46, Angelicage_44, Kamashten_44, Sitar_46, Ailee_43, Fosterous_44, Stultus_45, Thing3_44, MoontowerMania_46
- Track 7 : Flatwoods_47
- Track 8 : Tangerine_46, Baumdotcom_45, LilHam_44
- Track 9 : Baddon_46
- Track 10 : Gaea_46
- Track 11 : SchottB_45, Kwobi_47, StorminNorm_46, Tycho_46, Kroos_47
- Track 12 : Fitzgerald_45, Sanjuju_45
- Track 13 : Bibwit_45
- Track 14 : YorkOnyx_47
- Track 15 : Ashertheman_47
- Track 16 : McKinley_48, Barsten_47, Kewpiedoll_46
- Track 17 : Sedona_46, Brandonk123_48, Shivanishola_46
- Track 18 : Vivi2_49
- Track 19 : Nordenberg_41
- Track 20 : Bizzy_47
- Track 21 : BobBob_44
- Track 22 : Hans_47, Ali17_43, Inspectinfecti_46
- Track 23 : EMoore_43
- Track 24 : Phauci_38
- Track 25 : Phinally_45, Leonard_45
- Track 26 : MelBins_46
- Track 27 : RoadKill_40, Twonlo_40, EdmundFerry_41
- Track 28 : Tiamoceli_43
- Track 29 : GTE6_42
- Track 30 : Dxdert_43
- Track 31 : Chickadee_42
- Track 32 : Kwekel_42
- Track 33 : Abblin_47, Scioto_48, Natkenzie_47, Sampson_47
- Track 34 : APunk_48, Tardus_48

- Track 35 : Delrey21_47, Verity_47, Zipp_48, DoctorFroggo_47
- Track 36 : ViaConlectus_47
- Track 37 : Zitch_50
- Track 38 : Lilbeanie_46

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

The start number called the most often in the published annotations is 24, it was called in 56 of the 65 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- APunk_48, Abblin_47, Affeca_44, Ailee_43, Ali17_43, Angelicage_44, Baddon_46, Barsten_47, Baumdotcom_45, Belphegor_46, Bibwit_45, Bizzy_47, Brandonk123_48, ChadMasterC_47, Charming_47, Chickadee_42, Delrey21_47, Derg_44, Dextert_43, DoctorFroggo_47, EMOore_43, EdmundFerry_41, Fitzgerald_45, Flatwoods_47, Fosterous_44, GTE6_42, Gaea_46, Galadriel_46, Geodirt_45, Gustavo_46, Hans_47, Inspectinfecti_46, JKSyngboy_44, Jabberwocky_45, Kamashten_44, Keitabear_46, Kewpiedoll_46, Kroos_47, Kwobi_47, Lennon_46, LilHam_44, Love_50, McKinley_48, MoontowerMania_46, Natkenzie_47, Paries_49, Phauci_38, Ribeye_47, RiverRaider_48, RoadKill_40, Rofo_47, Sampson_47, Sanjuju_45, Saronaya_46, SchottB_45, Scioto_48, Sedona_46, Shivanishola_46, Sitar_46, StorminNorm_46, Stultus_45, Tangent_47, Tangerine_46, Tardus_48, Thing3_44, Tiamoceli_43, Twonlo_40, Tycho_46, Verity_47, ViaConlectus_47, YorkOnyx_47, Zipp_48, Zitch_50,

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

- Ashertheman_47, Kwekel_42, Leonard_45, MelBins_46, Nordenberg_41, Phinally_45,

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

- BobBob_44, Lilbeanie_46, Vivi2_49,

Summary by start number:

Start 15:

- Found in 2 of 82 (2.4%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Kwekel_42 (DE3),

Start 17:

- Found in 3 of 82 (3.7%) of genes in pham
- Manual Annotations of this start: 3 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Leonard_45 (DE2), MelBins_46 (DE2), Phinally_45 (DE2),

Start 22:

- Found in 7 of 82 (8.5%) of genes in pham
- Manual Annotations of this start: 2 of 65

- Called 28.6% of time when present
- Phage (with cluster) where this start called: Ashertheman_47 (DE1), Nordenberg_41 (DE1),

Start 24:

- Found in 79 of 82 (96.3%) of genes in pham
- Manual Annotations of this start: 56 of 65
- Called 92.4% of time when present
- Phage (with cluster) where this start called: APunk_48 (DE4), Abblin_47 (DE4), Affeca_44 (DE1), Ailee_43 (DE1), Ali17_43 (DE2), Angelicage_44 (DE1), Baddon_46 (DE1), Barsten_47 (DE1), Baumdotcom_45 (DE1), Belphegor_46 (DE), Bibwit_45 (DE1), Bizzy_47 (DE1), Brandonk123_48 (DE1), ChadMasterC_47 (DE1), Charming_47 (DE1), Chickadee_42 (DE3), Delrey21_47 (DE4), Derg_44 (DE1), Dextert_43 (DE3), DoctorFroggo_47 (DE4), EMOore_43 (DE2), EdmundFerry_41 (DE3), Fitzgerald_45 (DE1), Flatwoods_47 (DE1), Fosterous_44 (DE1), GTE6_42 (DE3), Gaea_46 (DE1), Galadriel_46 (DE1), Geodirt_45 (DE1), Gustavo_46 (DE1), Hans_47 (DE2), Inspectinfecti_46 (DE2), JKSyngboy_44 (DE1), Jabberwocky_45 (DE1), Kamashten_44 (DE1), Keitabear_46 (DE1), Kewpiedoll_46 (DE1), Kroos_47 (DE1), Kwobi_47 (DE1), Lennon_46 (DE1), LilHam_44 (DE1), Love_50 (DE1), McKinley_48 (DE1), MoontowerMania_46 (DE1), Natkenzie_47 (DE4), Paries_49 (DE1), Phauci_38 (DE2), Ribeye_47 (DE1), RiverRaider_48 (DE1), RoadKill_40 (DE3), Rofo_47 (DE1), Sampson_47 (DE4), Sanjuju_45 (DE1), Saronaya_46 (DE1), SchottB_45 (DE1), Scioto_48 (DE4), Sedona_46 (DE1), Shivanishola_46 (DE1), Sitar_46 (DE1), StorminNorm_46 (DE1), Stultus_45 (DE1), Tangent_47 (DE1), Tangerine_46 (DE1), Tardus_48 (DE4), Thing3_44 (DE1), Tiamoceli_43 (DE3), Twonlo_40 (DE3), Tycho_46 (DE1), Verity_47 (DE4), ViaConlectus_47 (DE4), YorkOnyx_47 (DE1), Zipp_48 (DE4), Zitch_50 (DE4),

Start 25:

- Found in 2 of 82 (2.4%) of genes in pham
- Manual Annotations of this start: 2 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BobBob_44 (DE1), Vivi2_49 (DE1),

Start 28:

- Found in 1 of 82 (1.2%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilbeanie_46 (DE5),

Summary by clusters:

There are 6 clusters represented in this pham: DE, DE1, DE2, DE3, DE4, DE5,

Info for manual annotations of cluster DE1:

- Start number 22 was manually annotated 2 times for cluster DE1.
- Start number 24 was manually annotated 38 times for cluster DE1.
- Start number 25 was manually annotated 2 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 17 was manually annotated 3 times for cluster DE2.
- Start number 24 was manually annotated 4 times for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 15 was manually annotated 1 time for cluster DE3.
- Start number 24 was manually annotated 5 times for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 24 was manually annotated 9 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 28 was manually annotated 1 time for cluster DE5.

Gene Information:

Gene: APunk_48 Start: 40958, Stop: 41353, Start Num: 24

Candidate Starts for APunk_48:

(Start: 24 @40958 has 56 MA's), (34, 41069), (35, 41075), (44, 41165), (57, 41291), (60, 41327),

Gene: Abblin_47 Start: 41491, Stop: 41901, Start Num: 24

Candidate Starts for Abblin_47:

(Start: 24 @41491 has 56 MA's), (33, 41605), (35, 41623), (44, 41713), (60, 41875),

Gene: Affeca_44 Start: 40271, Stop: 40717, Start Num: 24

Candidate Starts for Affeca_44:

(8, 40121), (13, 40160), (Start: 24 @40271 has 56 MA's), (29, 40355), (39, 40460), (62, 40697),

Gene: Ailee_43 Start: 39864, Stop: 40310, Start Num: 24

Candidate Starts for Ailee_43:

(8, 39714), (13, 39753), (Start: 24 @39864 has 56 MA's), (29, 39948), (39, 40053), (62, 40290),

Gene: Ali17_43 Start: 39148, Stop: 39606, Start Num: 24

Candidate Starts for Ali17_43:

(Start: 24 @39148 has 56 MA's), (35, 39268), (42, 39352),

Gene: Angelicage_44 Start: 40689, Stop: 41135, Start Num: 24

Candidate Starts for Angelicage_44:

(8, 40539), (13, 40578), (Start: 24 @40689 has 56 MA's), (29, 40773), (39, 40878), (62, 41115),

Gene: Ashertheman_47 Start: 40663, Stop: 41157, Start Num: 22

Candidate Starts for Ashertheman_47:

(Start: 22 @40663 has 2 MA's), (Start: 24 @40708 has 56 MA's), (33, 40819), (39, 40897), (48, 40966), (62, 41137),

Gene: Baddon_46 Start: 41245, Stop: 41691, Start Num: 24

Candidate Starts for Baddon_46:

(Start: 24 @41245 has 56 MA's), (33, 41356), (39, 41434), (48, 41503),

Gene: Barsten_47 Start: 40844, Stop: 41290, Start Num: 24

Candidate Starts for Barsten_47:

(8, 40694), (13, 40733), (Start: 24 @40844 has 56 MA's), (29, 40928), (39, 41033), (49, 41117), (62, 41270),

Gene: Baumdotcom_45 Start: 40096, Stop: 40563, Start Num: 24
Candidate Starts for Baumdotcom_45:
(Start: 24 @40096 has 56 MA's), (30, 40183), (33, 40207), (40, 40291),

Gene: Belphegor_46 Start: 41206, Stop: 41646, Start Num: 24
Candidate Starts for Belphegor_46:
(21, 41158), (Start: 24 @41206 has 56 MA's), (31, 41290), (32, 41299), (33, 41308), (35, 41326), (36, 41365), (51, 41530), (52, 41548), (54, 41557),

Gene: Bibwit_45 Start: 39801, Stop: 40247, Start Num: 24
Candidate Starts for Bibwit_45:
(8, 39651), (13, 39690), (18, 39747), (Start: 24 @39801 has 56 MA's), (29, 39885), (39, 39990), (62, 40227),

Gene: Bizzy_47 Start: 40402, Stop: 40848, Start Num: 24
Candidate Starts for Bizzy_47:
(Start: 24 @40402 has 56 MA's), (33, 40513), (40, 40597),

Gene: BobBob_44 Start: 39962, Stop: 40408, Start Num: 25
Candidate Starts for BobBob_44:
(6, 39800), (7, 39806), (11, 39839), (12, 39848), (19, 39911), (Start: 25 @39962 has 2 MA's), (29, 40046), (39, 40151),

Gene: Brandonk123_48 Start: 41096, Stop: 41542, Start Num: 24
Candidate Starts for Brandonk123_48:
(Start: 22 @41054 has 2 MA's), (Start: 24 @41096 has 56 MA's), (29, 41180), (39, 41285),

Gene: ChadMasterC_47 Start: 42243, Stop: 42689, Start Num: 24
Candidate Starts for ChadMasterC_47:
(8, 42093), (13, 42132), (Start: 24 @42243 has 56 MA's), (29, 42327), (39, 42432), (62, 42669),

Gene: Charming_47 Start: 40599, Stop: 41045, Start Num: 24
Candidate Starts for Charming_47:
(8, 40449), (13, 40488), (Start: 24 @40599 has 56 MA's), (29, 40683), (49, 40872), (62, 41025),

Gene: Chickadee_42 Start: 37075, Stop: 37500, Start Num: 24
Candidate Starts for Chickadee_42:
(Start: 15 @36967 has 1 MA's), (16, 36988), (20, 37024), (Start: 24 @37075 has 56 MA's), (32, 37174), (39, 37282), (61, 37489),

Gene: Delrey21_47 Start: 42260, Stop: 42667, Start Num: 24
Candidate Starts for Delrey21_47:
(Start: 24 @42260 has 56 MA's), (34, 42371), (35, 42377), (42, 42458), (44, 42467), (58, 42599),

Gene: Derg_44 Start: 39994, Stop: 40443, Start Num: 24
Candidate Starts for Derg_44:
(Start: 24 @39994 has 56 MA's), (29, 40078), (33, 40105), (40, 40189), (45, 40237), (48, 40252), (49, 40267),

Gene: Dexdert_43 Start: 37336, Stop: 37761, Start Num: 24
Candidate Starts for Dexdert_43:
(16, 37249), (20, 37285), (Start: 24 @37336 has 56 MA's), (32, 37426), (56, 37681), (57, 37699),

Gene: DoctorFroggo_47 Start: 42260, Stop: 42667, Start Num: 24
Candidate Starts for DoctorFroggo_47:
(Start: 24 @42260 has 56 MA's), (34, 42371), (35, 42377), (42, 42458), (44, 42467), (58, 42599),

Gene: EMoore_43 Start: 40331, Stop: 40807, Start Num: 24
Candidate Starts for EMoore_43:
(Start: 24 @40331 has 56 MA's), (27, 40376), (32, 40424), (35, 40451), (42, 40553), (50, 40661),

Gene: EdmundFerry_41 Start: 37104, Stop: 37541, Start Num: 24
Candidate Starts for EdmundFerry_41:
(16, 37017), (20, 37053), (Start: 24 @37104 has 56 MA's), (32, 37215), (39, 37323), (61, 37530),

Gene: Fitzgerald_45 Start: 41501, Stop: 41947, Start Num: 24
Candidate Starts for Fitzgerald_45:
(8, 41351), (13, 41390), (Start: 24 @41501 has 56 MA's), (29, 41585), (46, 41747), (62, 41927),

Gene: Flatwoods_47 Start: 40346, Stop: 40792, Start Num: 24
Candidate Starts for Flatwoods_47:
(Start: 24 @40346 has 56 MA's), (30, 40433), (33, 40457),

Gene: Fosterous_44 Start: 40060, Stop: 40506, Start Num: 24
Candidate Starts for Fosterous_44:
(8, 39910), (13, 39949), (Start: 24 @40060 has 56 MA's), (29, 40144), (39, 40249), (62, 40486),

Gene: GTE6_42 Start: 37596, Stop: 38033, Start Num: 24
Candidate Starts for GTE6_42:
(20, 37545), (Start: 24 @37596 has 56 MA's), (39, 37815), (61, 38022),

Gene: Gaea_46 Start: 39989, Stop: 40435, Start Num: 24
Candidate Starts for Gaea_46:
(Start: 24 @39989 has 56 MA's), (29, 40073), (39, 40178), (62, 40415),

Gene: Galadriel_46 Start: 40867, Stop: 41313, Start Num: 24
Candidate Starts for Galadriel_46:
(8, 40717), (13, 40756), (Start: 24 @40867 has 56 MA's), (29, 40951), (49, 41140), (62, 41293),

Gene: Geodirt_45 Start: 41479, Stop: 41925, Start Num: 24
Candidate Starts for Geodirt_45:
(8, 41329), (13, 41368), (Start: 24 @41479 has 56 MA's), (29, 41563), (39, 41668), (62, 41905),

Gene: Gustavo_46 Start: 40162, Stop: 40608, Start Num: 24
Candidate Starts for Gustavo_46:
(Start: 24 @40162 has 56 MA's), (29, 40246), (33, 40273), (39, 40351), (44, 40378), (48, 40420), (49, 40435), (62, 40588),

Gene: Hans_47 Start: 39788, Stop: 40246, Start Num: 24
Candidate Starts for Hans_47:
(Start: 24 @39788 has 56 MA's), (35, 39908), (42, 39992),

Gene: Inspectinfecti_46 Start: 40234, Stop: 40692, Start Num: 24
Candidate Starts for Inspectinfecti_46:
(Start: 24 @40234 has 56 MA's), (35, 40354), (42, 40438),

Gene: JKSyngboy_44 Start: 40761, Stop: 41207, Start Num: 24

Candidate Starts for JKSyngboy_44:

(Start: 24 @40761 has 56 MA's), (29, 40845), (33, 40872), (39, 40950), (44, 40977), (48, 41019), (49, 41034), (62, 41187),

Gene: Jabberwocky_45 Start: 41905, Stop: 42351, Start Num: 24

Candidate Starts for Jabberwocky_45:

(8, 41755), (13, 41794), (Start: 24 @41905 has 56 MA's), (29, 41989), (49, 42178), (62, 42331),

Gene: Kamashten_44 Start: 39840, Stop: 40286, Start Num: 24

Candidate Starts for Kamashten_44:

(8, 39690), (13, 39729), (Start: 24 @39840 has 56 MA's), (29, 39924), (39, 40029), (62, 40266),

Gene: Keitabear_46 Start: 41495, Stop: 41941, Start Num: 24

Candidate Starts for Keitabear_46:

(8, 41345), (13, 41384), (Start: 24 @41495 has 56 MA's), (29, 41579), (39, 41684), (62, 41921),

Gene: Kewpiedoll_46 Start: 40781, Stop: 41227, Start Num: 24

Candidate Starts for Kewpiedoll_46:

(8, 40631), (13, 40670), (Start: 24 @40781 has 56 MA's), (29, 40865), (39, 40970), (49, 41054), (62, 41207),

Gene: Kroos_47 Start: 40902, Stop: 41348, Start Num: 24

Candidate Starts for Kroos_47:

(Start: 24 @40902 has 56 MA's), (30, 40989), (33, 41013), (48, 41160),

Gene: Kwekel_42 Start: 36928, Stop: 37461, Start Num: 15

Candidate Starts for Kwekel_42:

(Start: 15 @36928 has 1 MA's), (16, 36949), (20, 36985), (Start: 24 @37036 has 56 MA's), (32, 37135), (39, 37243), (61, 37450),

Gene: Kwobi_47 Start: 40888, Stop: 41334, Start Num: 24

Candidate Starts for Kwobi_47:

(Start: 24 @40888 has 56 MA's), (30, 40975), (33, 40999), (48, 41146),

Gene: Lennon_46 Start: 41584, Stop: 42030, Start Num: 24

Candidate Starts for Lennon_46:

(8, 41434), (13, 41473), (Start: 24 @41584 has 56 MA's), (29, 41668), (39, 41773), (62, 42010),

Gene: Leonard_45 Start: 39803, Stop: 40336, Start Num: 17

Candidate Starts for Leonard_45:

(1, 39629), (2, 39632), (3, 39647), (14, 39764), (Start: 17 @39803 has 3 MA's), (21, 39827), (Start: 24 @39875 has 56 MA's), (31, 39959), (32, 39968), (35, 39995), (36, 40034), (41, 40076), (51, 40214),

Gene: LilHam_44 Start: 39489, Stop: 39956, Start Num: 24

Candidate Starts for LilHam_44:

(Start: 24 @39489 has 56 MA's), (30, 39576), (33, 39600), (40, 39684),

Gene: Lilbeanie_46 Start: 36194, Stop: 36679, Start Num: 28

Candidate Starts for Lilbeanie_46:

(4, 35894), (16, 36017), (Start: 28 @36194 has 1 MA's), (37, 36341), (38, 36353), (42, 36374), (43, 36377), (63, 36638), (64, 36665),

Gene: Love_50 Start: 42032, Stop: 42478, Start Num: 24

Candidate Starts for Love_50:

(8, 41882), (13, 41921), (Start: 24 @42032 has 56 MA's), (29, 42116), (49, 42305), (62, 42458),

Gene: McKinley_48 Start: 41405, Stop: 41851, Start Num: 24

Candidate Starts for McKinley_48:

(8, 41255), (13, 41294), (Start: 24 @41405 has 56 MA's), (29, 41489), (39, 41594), (49, 41678), (62, 41831),

Gene: MelBins_46 Start: 39953, Stop: 40486, Start Num: 17

Candidate Starts for MelBins_46:

(1, 39779), (2, 39782), (3, 39797), (14, 39914), (Start: 17 @39953 has 3 MA's), (21, 39977), (Start: 24 @40025 has 56 MA's), (31, 40109), (32, 40118), (36, 40184), (41, 40226), (51, 40364),

Gene: MoontowerMania_46 Start: 41240, Stop: 41686, Start Num: 24

Candidate Starts for MoontowerMania_46:

(8, 41090), (13, 41129), (Start: 24 @41240 has 56 MA's), (29, 41324), (39, 41429), (62, 41666),

Gene: Natkenzie_47 Start: 41491, Stop: 41901, Start Num: 24

Candidate Starts for Natkenzie_47:

(Start: 24 @41491 has 56 MA's), (33, 41605), (35, 41623), (44, 41713), (60, 41875),

Gene: Nordenberg_41 Start: 40181, Stop: 40669, Start Num: 22

Candidate Starts for Nordenberg_41:

(Start: 22 @40181 has 2 MA's), (Start: 24 @40223 has 56 MA's), (29, 40307), (39, 40412),

Gene: Paries_49 Start: 41694, Stop: 42140, Start Num: 24

Candidate Starts for Paries_49:

(8, 41544), (13, 41583), (Start: 24 @41694 has 56 MA's), (29, 41778), (49, 41967), (62, 42120),

Gene: Phauci_38 Start: 36727, Stop: 37188, Start Num: 24

Candidate Starts for Phauci_38:

(Start: 24 @36727 has 56 MA's), (31, 36811), (32, 36820), (35, 36847), (36, 36886), (41, 36928), (51, 37066), (55, 37105),

Gene: Phinally_45 Start: 39800, Stop: 40333, Start Num: 17

Candidate Starts for Phinally_45:

(1, 39626), (2, 39629), (3, 39644), (14, 39761), (Start: 17 @39800 has 3 MA's), (21, 39824), (Start: 24 @39872 has 56 MA's), (31, 39956), (32, 39965), (35, 39992), (36, 40031), (41, 40073), (51, 40211),

Gene: Ribeye_47 Start: 41320, Stop: 41769, Start Num: 24

Candidate Starts for Ribeye_47:

(Start: 24 @41320 has 56 MA's), (29, 41404), (33, 41431), (40, 41515), (45, 41563), (48, 41578), (49, 41593),

Gene: RiverRaider_48 Start: 39447, Stop: 39926, Start Num: 24

Candidate Starts for RiverRaider_48:

(9, 39297), (19, 39393), (23, 39432), (Start: 24 @39447 has 56 MA's), (26, 39483), (39, 39663), (45, 39717), (47, 39723), (53, 39816), (59, 39861),

Gene: RoadKill_40 Start: 36599, Stop: 37036, Start Num: 24

Candidate Starts for RoadKill_40:

(16, 36512), (20, 36548), (Start: 24 @36599 has 56 MA's), (32, 36710), (39, 36818), (61, 37025),

Gene: Rofo_47 Start: 41020, Stop: 41466, Start Num: 24

Candidate Starts for Rofo_47:

(8, 40870), (13, 40909), (Start: 24 @41020 has 56 MA's), (29, 41104), (49, 41293), (62, 41446),

Gene: Sampson_47 Start: 41436, Stop: 41846, Start Num: 24

Candidate Starts for Sampson_47:

(Start: 24 @41436 has 56 MA's), (33, 41550), (35, 41568), (44, 41658), (60, 41820),

Gene: Sanjuju_45 Start: 41634, Stop: 42080, Start Num: 24

Candidate Starts for Sanjuju_45:

(8, 41484), (13, 41523), (Start: 24 @41634 has 56 MA's), (29, 41718), (46, 41880), (62, 42060),

Gene: Saronaya_46 Start: 40162, Stop: 40608, Start Num: 24

Candidate Starts for Saronaya_46:

(Start: 24 @40162 has 56 MA's), (29, 40246), (33, 40273), (39, 40351), (44, 40378), (48, 40420), (49, 40435), (62, 40588),

Gene: SchottB_45 Start: 41162, Stop: 41608, Start Num: 24

Candidate Starts for SchottB_45:

(Start: 24 @41162 has 56 MA's), (30, 41249), (33, 41273), (48, 41420),

Gene: Scioto_48 Start: 41492, Stop: 41902, Start Num: 24

Candidate Starts for Scioto_48:

(Start: 24 @41492 has 56 MA's), (33, 41606), (35, 41624), (44, 41714), (60, 41876),

Gene: Sedona_46 Start: 41229, Stop: 41675, Start Num: 24

Candidate Starts for Sedona_46:

(Start: 22 @41187 has 2 MA's), (Start: 24 @41229 has 56 MA's), (29, 41313), (39, 41418),

Gene: Shivanishola_46 Start: 39899, Stop: 40345, Start Num: 24

Candidate Starts for Shivanishola_46:

(Start: 22 @39857 has 2 MA's), (Start: 24 @39899 has 56 MA's), (29, 39983), (39, 40088),

Gene: Sitar_46 Start: 41584, Stop: 42030, Start Num: 24

Candidate Starts for Sitar_46:

(8, 41434), (13, 41473), (Start: 24 @41584 has 56 MA's), (29, 41668), (39, 41773), (62, 42010),

Gene: StorminNorm_46 Start: 40253, Stop: 40699, Start Num: 24

Candidate Starts for StorminNorm_46:

(Start: 24 @40253 has 56 MA's), (30, 40340), (33, 40364), (48, 40511),

Gene: Stultus_45 Start: 40537, Stop: 40983, Start Num: 24

Candidate Starts for Stultus_45:

(8, 40387), (13, 40426), (Start: 24 @40537 has 56 MA's), (29, 40621), (39, 40726), (62, 40963),

Gene: Tangent_47 Start: 40611, Stop: 41057, Start Num: 24

Candidate Starts for Tangent_47:

(8, 40461), (13, 40500), (Start: 24 @40611 has 56 MA's), (29, 40695), (49, 40884), (62, 41037),

Gene: Tangerine_46 Start: 40034, Stop: 40480, Start Num: 24

Candidate Starts for Tangerine_46:

(Start: 24 @40034 has 56 MA's), (30, 40121), (33, 40145), (40, 40229),

Gene: Tardus_48 Start: 40847, Stop: 41242, Start Num: 24

Candidate Starts for Tardus_48:

(Start: 24 @40847 has 56 MA's), (34, 40958), (35, 40964), (44, 41054), (57, 41180), (60, 41216),

Gene: Thing3_44 Start: 39840, Stop: 40286, Start Num: 24

Candidate Starts for Thing3_44:

(8, 39690), (13, 39729), (Start: 24 @39840 has 56 MA's), (29, 39924), (39, 40029), (62, 40266),

Gene: Tiamoceli_43 Start: 37932, Stop: 38357, Start Num: 24

Candidate Starts for Tiamoceli_43:

(20, 37881), (Start: 24 @37932 has 56 MA's), (32, 38031), (39, 38139), (61, 38346),

Gene: Twonlo_40 Start: 36550, Stop: 36987, Start Num: 24

Candidate Starts for Twonlo_40:

(16, 36463), (20, 36499), (Start: 24 @36550 has 56 MA's), (32, 36661), (39, 36769), (61, 36976),

Gene: Tycho_46 Start: 40121, Stop: 40567, Start Num: 24

Candidate Starts for Tycho_46:

(Start: 24 @40121 has 56 MA's), (30, 40208), (33, 40232), (48, 40379),

Gene: Verity_47 Start: 42260, Stop: 42667, Start Num: 24

Candidate Starts for Verity_47:

(Start: 24 @42260 has 56 MA's), (34, 42371), (35, 42377), (42, 42458), (44, 42467), (58, 42599),

Gene: ViaConlectus_47 Start: 40130, Stop: 40525, Start Num: 24

Candidate Starts for ViaConlectus_47:

(Start: 24 @40130 has 56 MA's), (33, 40229), (35, 40247), (44, 40337), (57, 40463), (60, 40499),

Gene: Vivi2_49 Start: 41638, Stop: 42084, Start Num: 25

Candidate Starts for Vivi2_49:

(Start: 22 @41593 has 2 MA's), (Start: 25 @41638 has 2 MA's), (29, 41722), (39, 41827), (46, 41884), (49, 41911), (62, 42064),

Gene: YorkOnyx_47 Start: 40378, Stop: 40824, Start Num: 24

Candidate Starts for YorkOnyx_47:

(5, 40213), (10, 40252), (Start: 22 @40333 has 2 MA's), (Start: 24 @40378 has 56 MA's), (30, 40465), (33, 40489), (48, 40636),

Gene: Zipp_48 Start: 42175, Stop: 42582, Start Num: 24

Candidate Starts for Zipp_48:

(Start: 24 @42175 has 56 MA's), (34, 42286), (35, 42292), (42, 42373), (44, 42382), (58, 42514),

Gene: Zitch_50 Start: 40286, Stop: 40681, Start Num: 24

Candidate Starts for Zitch_50:

(Start: 24 @40286 has 56 MA's), (33, 40385), (35, 40403), (44, 40493), (60, 40655),