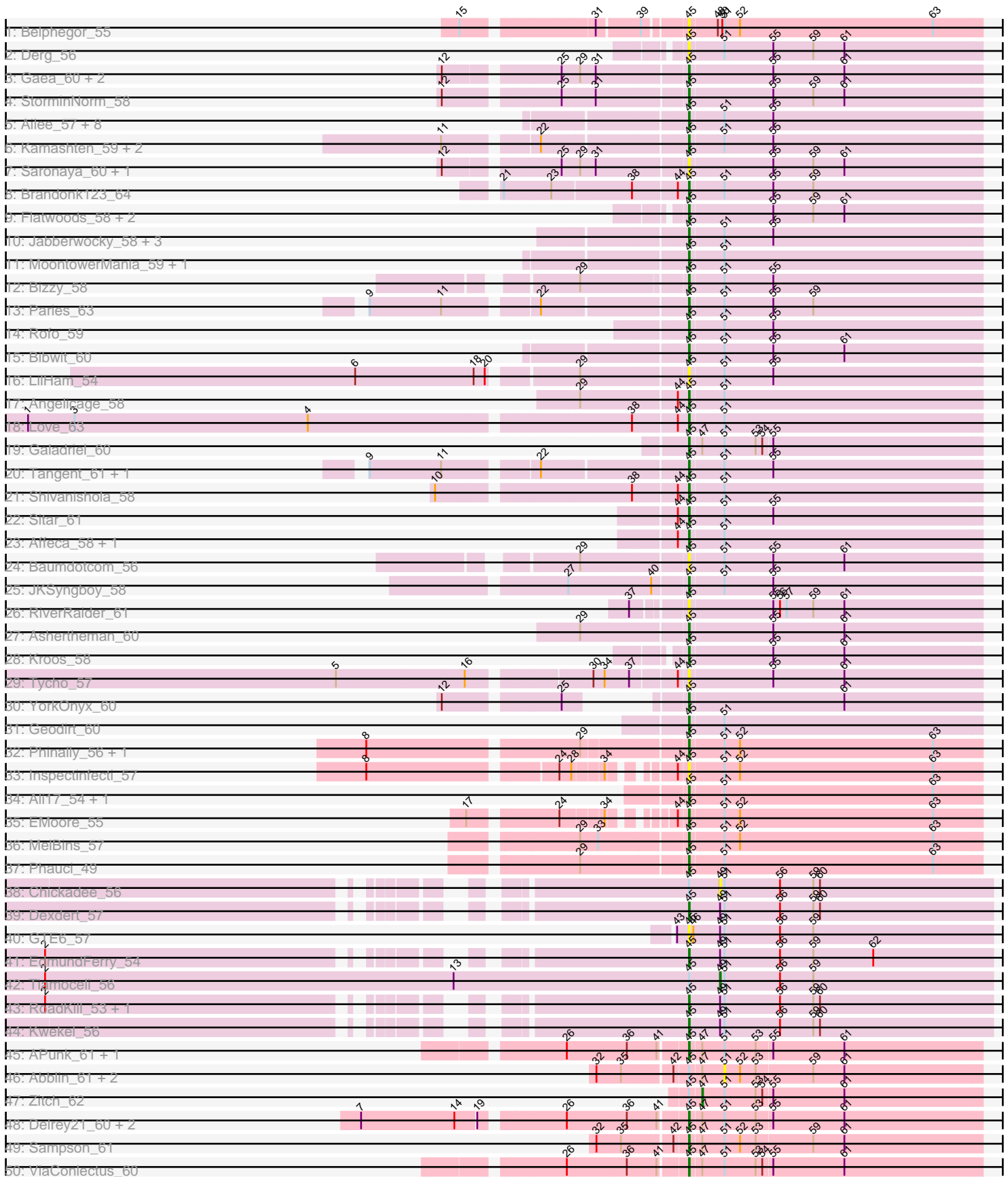
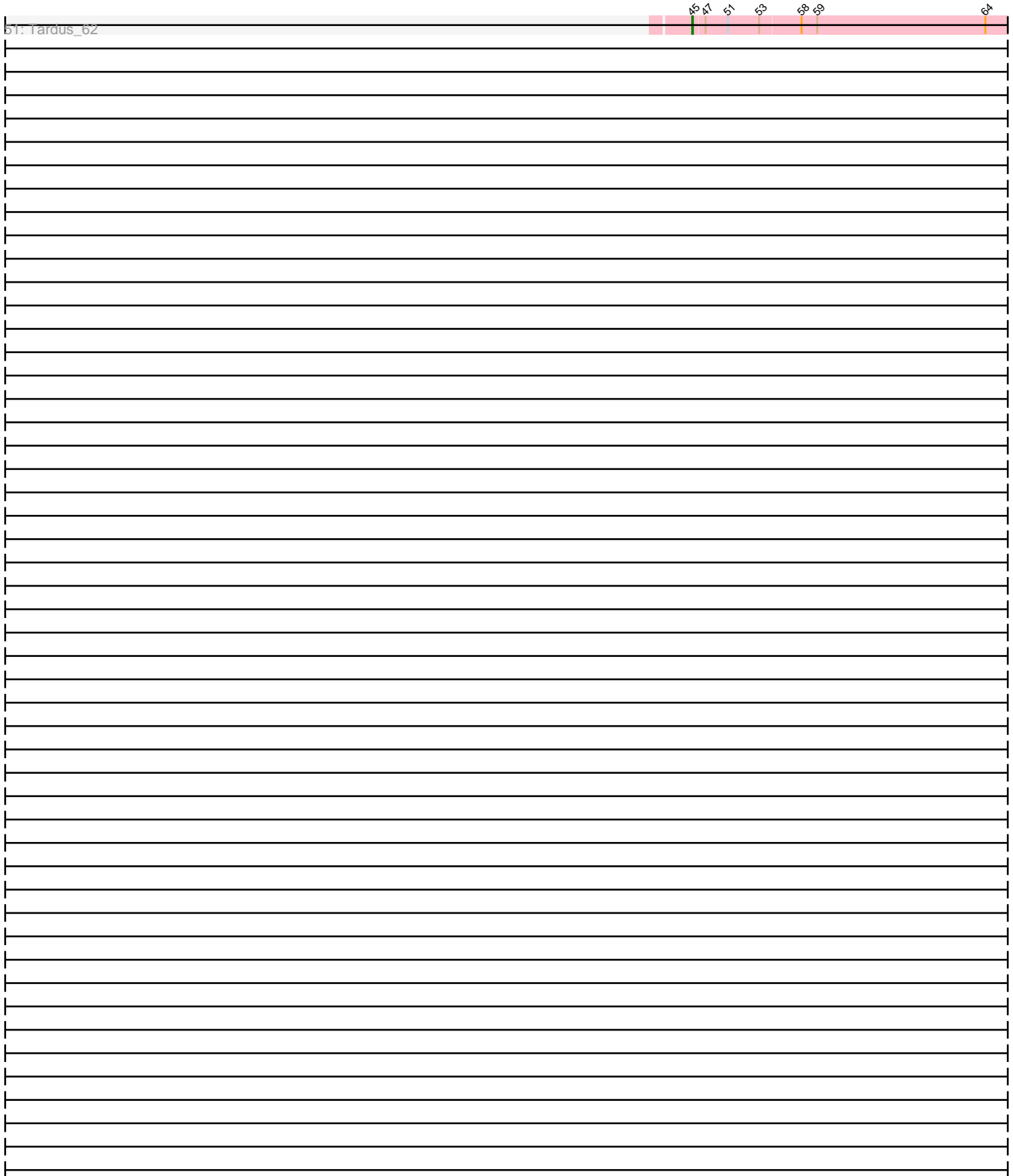


Pham 1413





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 1413 Report

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

Pham number 1413 has 80 members, 17 are drafts.

Phages represented in each track:

- Track 1 : Belphegor_55
- Track 2 : Derg_56
- Track 3 : Gaea_60, SchottB_57, Tangerine_59
- Track 4 : StorminNorm_58
- Track 5 : Ailee_57, Vivi2_64, Charming_62, ChadMasterC_61, Stultus_57, Lennon_61, Nordenberg_57, Kewpiedoll_60, Keitabear_60
- Track 6 : Kamashten_59, Thing3_59, BobBob_59
- Track 7 : Saronaya_60, Gustavo_60
- Track 8 : Brandonk123_64
- Track 9 : Flatwoods_58, Ribeye_58, Kwobi_60
- Track 10 : Jabberwocky_58, Sanjuju_58, McKinley_62, Fitzgerald_57
- Track 11 : MoontowerMania_59, Barsten_61
- Track 12 : Bizzy_58
- Track 13 : Paries_63
- Track 14 : Rofo_59
- Track 15 : Bibwit_60
- Track 16 : LilHam_54
- Track 17 : Angelicage_58
- Track 18 : Love_63
- Track 19 : Galadriel_60
- Track 20 : Tangent_61, Fosterous_62
- Track 21 : Shivanishola_58
- Track 22 : Sitar_61
- Track 23 : Affeca_58, Sedona_59
- Track 24 : Baumdotcom_56
- Track 25 : JKSyngboy_58
- Track 26 : RiverRaider_61
- Track 27 : Ashertheman_60
- Track 28 : Kroos_58
- Track 29 : Tycho_57
- Track 30 : YorkOnyx_60
- Track 31 : Geodirt_60
- Track 32 : Phinally_56, Leonard_56
- Track 33 : Inspectinfecti_57
- Track 34 : Ali17_54, Hans_58
- Track 35 : EMoore_55
- Track 36 : MelBins_57

- Track 37 : Phauci_49
- Track 38 : Chickadee_56
- Track 39 : Dexdert_57
- Track 40 : GTE6_57
- Track 41 : EdmundFerry_54
- Track 42 : Tiamoceli_56
- Track 43 : RoadKill_53, Twonlo_53
- Track 44 : Kwekel_56
- Track 45 : APunk_61, Zipp_61
- Track 46 : Abblin_61, Scioto_61, Natkenzie_61
- Track 47 : Zitch_62
- Track 48 : Delrey21_60, DoctorFroggo_60, Verity_60
- Track 49 : Sampson_61
- Track 50 : ViaConlectus_60
- Track 51 : Tardus_62

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

The start number called the most often in the published annotations is 45, it was called in 61 of the 63 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• APunk_61, Affeca_58, Ailee_57, Ali17_54, Angelicage_58, Ashertheman_60, Barsten_61, Baumdotcom_56, Belphegor_55, Bibwit_60, Bizzy_58, BobBob_59, Brandonk123_64, ChadMasterC_61, Charming_62, Delrey21_60, Derg_56, Dexdert_57, DoctorFroggo_60, EMOore_55, EdmundFerry_54, Fitzgerald_57, Flatwoods_58, Fosterous_62, GTE6_57, Gaea_60, Galadriel_60, Geodirt_60, Gustavo_60, Hans_58, Inspectinfecti_57, JKSyngboy_58, Jabberwocky_58, Kamashten_59, Keitabear_60, Kewpiedoll_60, Kroos_58, Kwekel_56, Kwobi_60, Lennon_61, Leonard_56, LilHam_54, Love_63, McKinley_62, MelBins_57, MoontowerMania_59, Nordenberg_57, Paries_63, Phauci_49, Phinally_56, Ribeye_58, RiverRaider_61, RoadKill_53, Rofo_59, Sampson_61, Sanjuju_58, Saronaya_60, SchottB_57, Sedona_59, Shivanishola_58, Sitar_61, StorminNorm_58, Stultus_57, Tangent_61, Tangerine_59, Tardus_62, Thing3_59, Twonlo_53, Tycho_57, Verity_60, ViaConlectus_60, Vivi2_64, YorkOnyx_60, Zipp_61,

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

• Abblin_61, Chickadee_56, Natkenzie_61, Scioto_61, Tiamoceli_56, Zitch_62,

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

•

Summary by start number:

Start 45:

- Found in 80 of 80 (100.0%) of genes in pham
- Manual Annotations of this start: 61 of 63
- Called 92.5% of time when present
- Phage (with cluster) where this start called: APunk_61 (DE4), Affeca_58 (DE1), Ailee_57 (DE1), Ali17_54 (DE2), Angelicage_58 (DE1), Ashertheman_60 (DE1),

Barsten_61 (DE1), Baumdotcom_56 (DE1), Belphegor_55 (DE), Bibwit_60 (DE1), Bizzy_58 (DE1), BobBob_59 (DE1), Brandonk123_64 (DE1), ChadMasterC_61 (DE1), Charming_62 (DE1), Delrey21_60 (DE4), Derg_56 (DE1), Dexdert_57 (DE3), DoctorFroggo_60 (DE4), EMOore_55 (DE2), EdmundFerry_54 (DE3), Fitzgerald_57 (DE1), Flatwoods_58 (DE1), Fosterous_62 (DE1), GTE6_57 (DE3), Gaea_60 (DE1), Galadriel_60 (DE1), Geodirt_60 (DE1), Gustavo_60 (DE1), Hans_58 (DE2), Inspectinfecti_57 (DE2), JKSyngboy_58 (DE1), Jabberwocky_58 (DE1), Kamashten_59 (DE1), Keitabear_60 (DE1), Kewpiedoll_60 (DE1), Kroos_58 (DE1), Kwekel_56 (DE3), Kwobi_60 (DE1), Lennon_61 (DE1), Leonard_56 (DE2), LilHam_54 (DE1), Love_63 (DE1), McKinley_62 (DE1), MelBins_57 (DE2), MoontowerMania_59 (DE1), Nordenberg_57 (DE1), Paries_63 (DE1), Phauci_49 (DE2), Phinally_56 (DE2), Ribeye_58 (DE1), RiverRaider_61 (DE1), RoadKill_53 (DE3), Rofo_59 (DE1), Sampson_61 (DE4), Sanjuju_58 (DE1), Saronaya_60 (DE1), SchottB_57 (DE1), Sedona_59 (DE1), Shivanishola_58 (DE1), Sitar_61 (DE1), StorminNorm_58 (DE1), Stultus_57 (DE1), Tangent_61 (DE1), Tangerine_59 (DE1), Tardus_62 (DE4), Thing3_59 (DE1), Twonlo_53 (DE3), Tycho_57 (DE1), Verity_60 (DE4), ViaConlectus_60 (DE4), Vivi2_64 (DE1), YorkOnyx_60 (DE1), Zipp_61 (DE4),

Start 47:

- Found in 13 of 80 (16.2%) of genes in pham
- Manual Annotations of this start: 1 of 63
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Zitch_62 (DE4),

Start 49:

- Found in 8 of 80 (10.0%) of genes in pham
- Manual Annotations of this start: 1 of 63
- Called 25.0% of time when present
- Phage (with cluster) where this start called: Chickadee_56 (DE3), Tiamoceli_56 (DE3),

Start 51:

- Found in 66 of 80 (82.5%) of genes in pham
- No Manual Annotations of this start.
- Called 4.5% of time when present
- Phage (with cluster) where this start called: Abblin_61 (DE4), Natkenzie_61 (DE4), Scioto_61 (DE4),

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 45 was manually annotated 41 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 45 was manually annotated 7 times for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 45 was manually annotated 5 times for cluster DE3.
- Start number 49 was manually annotated 1 time for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 45 was manually annotated 8 times for cluster DE4.
- Start number 47 was manually annotated 1 time for cluster DE4.

Gene Information:

Gene: APunk_61 Start: 47546, Stop: 47935, Start Num: 45

Candidate Starts for APunk_61:

(26, 47399), (36, 47477), (41, 47513), (Start: 45 @47546 has 61 MA's), (Start: 47 @47561 has 1 MA's), (51, 47591), (53, 47633), (55, 47654), (61, 47750),

Gene: Abblin_61 Start: 47958, Stop: 48302, Start Num: 51

Candidate Starts for Abblin_61:

(32, 47802), (35, 47835), (42, 47898), (Start: 45 @47913 has 61 MA's), (Start: 47 @47928 has 1 MA's), (51, 47958), (52, 47979), (53, 48000), (59, 48075), (61, 48117),

Gene: Affeca_58 Start: 48296, Stop: 48688, Start Num: 45

Candidate Starts for Affeca_58:

(44, 48284), (Start: 45 @48296 has 61 MA's), (51, 48341),

Gene: Ailee_57 Start: 47718, Stop: 48110, Start Num: 45

Candidate Starts for Ailee_57:

(Start: 45 @47718 has 61 MA's), (51, 47763), (55, 47829),

Gene: Ali17_54 Start: 45308, Stop: 45700, Start Num: 45

Candidate Starts for Ali17_54:

(Start: 45 @45308 has 61 MA's), (51, 45353), (63, 45635),

Gene: Angelicage_58 Start: 48369, Stop: 48761, Start Num: 45

Candidate Starts for Angelicage_58:

(29, 48231), (44, 48357), (Start: 45 @48369 has 61 MA's), (51, 48414),

Gene: Ashertheman_60 Start: 47515, Stop: 47907, Start Num: 45

Candidate Starts for Ashertheman_60:

(29, 47377), (Start: 45 @47515 has 61 MA's), (55, 47626), (61, 47722),

Gene: Barsten_61 Start: 48511, Stop: 48903, Start Num: 45

Candidate Starts for Barsten_61:

(Start: 45 @48511 has 61 MA's), (51, 48556),

Gene: Baumdotcom_56 Start: 46312, Stop: 46704, Start Num: 45

Candidate Starts for Baumdotcom_56:

(29, 46174), (Start: 45 @46312 has 61 MA's), (51, 46357), (55, 46423), (61, 46519),

Gene: Belphegor_55 Start: 47101, Stop: 47493, Start Num: 45

Candidate Starts for Belphegor_55:

(15, 46837), (31, 46996), (39, 47050), (Start: 45 @47101 has 61 MA's), (48, 47137), (50, 47143), (51, 47146), (52, 47167), (63, 47428),

Gene: Bibwit_60 Start: 47764, Stop: 48156, Start Num: 45

Candidate Starts for Bibwit_60:

(Start: 45 @47764 has 61 MA's), (51, 47809), (55, 47875), (61, 47971),

Gene: Bizzy_58 Start: 47100, Stop: 47492, Start Num: 45

Candidate Starts for Bizzy_58:

(29, 46965), (Start: 45 @47100 has 61 MA's), (51, 47145), (55, 47211),

Gene: BobBob_59 Start: 47585, Stop: 47977, Start Num: 45

Candidate Starts for BobBob_59:

(11, 47291), (22, 47402), (Start: 45 @47585 has 61 MA's), (51, 47630), (55, 47696),

Gene: Brandonk123_64 Start: 48259, Stop: 48651, Start Num: 45

Candidate Starts for Brandonk123_64:

(21, 48025), (23, 48085), (38, 48187), (44, 48244), (Start: 45 @48259 has 61 MA's), (51, 48304), (55, 48370), (59, 48424),

Gene: ChadMasterC_61 Start: 49919, Stop: 50311, Start Num: 45

Candidate Starts for ChadMasterC_61:

(Start: 45 @49919 has 61 MA's), (51, 49964), (55, 50030),

Gene: Charming_62 Start: 47373, Stop: 47765, Start Num: 45

Candidate Starts for Charming_62:

(Start: 45 @47373 has 61 MA's), (51, 47418), (55, 47484),

Gene: Chickadee_56 Start: 43331, Stop: 43699, Start Num: 49

Candidate Starts for Chickadee_56:

(Start: 45 @43289 has 61 MA's), (Start: 49 @43331 has 1 MA's), (51, 43337), (56, 43412), (59, 43457), (60, 43466),

Gene: Delrey21_60 Start: 48679, Stop: 49068, Start Num: 45

Candidate Starts for Delrey21_60:

(7, 48280), (14, 48406), (19, 48433), (26, 48532), (36, 48610), (41, 48646), (Start: 45 @48679 has 61 MA's), (Start: 47 @48694 has 1 MA's), (51, 48724), (53, 48766), (55, 48787), (61, 48883),

Gene: Derg_56 Start: 45806, Stop: 46198, Start Num: 45

Candidate Starts for Derg_56:

(Start: 45 @45806 has 61 MA's), (51, 45851), (55, 45917), (59, 45971), (61, 46013),

Gene: Dextert_57 Start: 43593, Stop: 44003, Start Num: 45

Candidate Starts for Dextert_57:

(Start: 45 @43593 has 61 MA's), (Start: 49 @43635 has 1 MA's), (51, 43641), (56, 43716), (59, 43761), (60, 43770),

Gene: DoctorFroggo_60 Start: 48679, Stop: 49068, Start Num: 45

Candidate Starts for DoctorFroggo_60:

(7, 48280), (14, 48406), (19, 48433), (26, 48532), (36, 48610), (41, 48646), (Start: 45 @48679 has 61 MA's), (Start: 47 @48694 has 1 MA's), (51, 48724), (53, 48766), (55, 48787), (61, 48883),

Gene: EMoore_55 Start: 46821, Stop: 47213, Start Num: 45

Candidate Starts for EMoore_55:

(17, 46602), (24, 46701), (34, 46752), (44, 46809), (Start: 45 @46821 has 61 MA's), (51, 46866), (52, 46887), (63, 47148),

Gene: EdmundFerry_54 Start: 43253, Stop: 43663, Start Num: 45

Candidate Starts for EdmundFerry_54:

(2, 42518), (Start: 45 @43253 has 61 MA's), (Start: 49 @43295 has 1 MA's), (51, 43301), (56, 43376), (59, 43421), (62, 43502),

Gene: Fitzgerald_57 Start: 48429, Stop: 48821, Start Num: 45

Candidate Starts for Fitzgerald_57:

(Start: 45 @48429 has 61 MA's), (51, 48474), (55, 48540),

Gene: Flatwoods_58 Start: 46152, Stop: 46544, Start Num: 45

Candidate Starts for Flatwoods_58:

(Start: 45 @46152 has 61 MA's), (55, 46263), (59, 46317), (61, 46359),

Gene: Fosterous_62 Start: 48520, Stop: 48912, Start Num: 45

Candidate Starts for Fosterous_62:

(9, 48130), (11, 48226), (22, 48337), (Start: 45 @48520 has 61 MA's), (51, 48565), (55, 48631),

Gene: GTE6_57 Start: 44002, Stop: 44412, Start Num: 45

Candidate Starts for GTE6_57:

(43, 43987), (Start: 45 @44002 has 61 MA's), (46, 44008), (Start: 49 @44044 has 1 MA's), (51, 44050), (56, 44125), (59, 44170),

Gene: Gaea_60 Start: 46718, Stop: 47110, Start Num: 45

Candidate Starts for Gaea_60:

(12, 46421), (25, 46556), (29, 46580), (31, 46601), (Start: 45 @46718 has 61 MA's), (55, 46829), (61, 46925),

Gene: Galadriel_60 Start: 48656, Stop: 49045, Start Num: 45

Candidate Starts for Galadriel_60:

(Start: 45 @48656 has 61 MA's), (Start: 47 @48671 has 1 MA's), (51, 48701), (53, 48743), (54, 48752), (55, 48764),

Gene: Geodirt_60 Start: 48963, Stop: 49355, Start Num: 45

Candidate Starts for Geodirt_60:

(Start: 45 @48963 has 61 MA's), (51, 49008),

Gene: Gustavo_60 Start: 47229, Stop: 47621, Start Num: 45

Candidate Starts for Gustavo_60:

(12, 46932), (25, 47067), (29, 47091), (31, 47112), (Start: 45 @47229 has 61 MA's), (55, 47340), (59, 47394), (61, 47436),

Gene: Hans_58 Start: 45939, Stop: 46331, Start Num: 45

Candidate Starts for Hans_58:

(Start: 45 @45939 has 61 MA's), (51, 45984), (63, 46266),

Gene: Inspectinfecti_57 Start: 46343, Stop: 46735, Start Num: 45

Candidate Starts for Inspectinfecti_57:

(8, 45989), (24, 46223), (28, 46238), (34, 46274), (44, 46331), (Start: 45 @46343 has 61 MA's), (51, 46388), (52, 46409), (63, 46670),

Gene: JKSyngboy_58 Start: 47830, Stop: 48222, Start Num: 45

Candidate Starts for JKSyngboy_58:

(27, 47680), (40, 47788), (Start: 45 @47830 has 61 MA's), (51, 47875), (55, 47941),

Gene: Jabberwocky_58 Start: 48804, Stop: 49196, Start Num: 45

Candidate Starts for Jabberwocky_58:

(Start: 45 @48804 has 61 MA's), (51, 48849), (55, 48915),

Gene: Kamashten_59 Start: 47698, Stop: 48090, Start Num: 45

Candidate Starts for Kamashten_59:

(11, 47404), (22, 47515), (Start: 45 @47698 has 61 MA's), (51, 47743), (55, 47809),

Gene: Keitabear_60 Start: 49373, Stop: 49765, Start Num: 45

Candidate Starts for Keitabear_60:

(Start: 45 @49373 has 61 MA's), (51, 49418), (55, 49484),

Gene: Kewpiedoll_60 Start: 48752, Stop: 49144, Start Num: 45

Candidate Starts for Kewpiedoll_60:

(Start: 45 @48752 has 61 MA's), (51, 48797), (55, 48863),

Gene: Kroos_58 Start: 47249, Stop: 47641, Start Num: 45

Candidate Starts for Kroos_58:

(Start: 45 @47249 has 61 MA's), (55, 47360), (61, 47456),

Gene: Kwekel_56 Start: 43202, Stop: 43612, Start Num: 45

Candidate Starts for Kwekel_56:

(Start: 45 @43202 has 61 MA's), (Start: 49 @43244 has 1 MA's), (51, 43250), (56, 43325), (59, 43370), (60, 43379),

Gene: Kwobi_60 Start: 47944, Stop: 48336, Start Num: 45

Candidate Starts for Kwobi_60:

(Start: 45 @47944 has 61 MA's), (55, 48055), (59, 48109), (61, 48151),

Gene: Lennon_61 Start: 49681, Stop: 50073, Start Num: 45

Candidate Starts for Lennon_61:

(Start: 45 @49681 has 61 MA's), (51, 49726), (55, 49792),

Gene: Leonard_56 Start: 46309, Stop: 46701, Start Num: 45

Candidate Starts for Leonard_56:

(8, 45910), (29, 46177), (Start: 45 @46309 has 61 MA's), (51, 46354), (52, 46375), (63, 46636),

Gene: LilHam_54 Start: 45259, Stop: 45651, Start Num: 45

Candidate Starts for LilHam_54:

(6, 44845), (18, 45004), (20, 45019), (29, 45121), (Start: 45 @45259 has 61 MA's), (51, 45304), (55, 45370),

Gene: Love_63 Start: 48700, Stop: 49092, Start Num: 45

Candidate Starts for Love_63:

(1, 47836), (3, 47899), (4, 48214), (38, 48628), (44, 48685), (Start: 45 @48700 has 61 MA's), (51, 48745),

Gene: McKinley_62 Start: 48501, Stop: 48893, Start Num: 45

Candidate Starts for McKinley_62:

(Start: 45 @48501 has 61 MA's), (51, 48546), (55, 48612),

Gene: MelBins_57 Start: 46421, Stop: 46813, Start Num: 45

Candidate Starts for MelBins_57:

(29, 46283), (33, 46307), (Start: 45 @46421 has 61 MA's), (51, 46466), (52, 46487), (63, 46748),

Gene: MoontowerMania_59 Start: 48799, Stop: 49191, Start Num: 45

Candidate Starts for MoontowerMania_59:

(Start: 45 @48799 has 61 MA's), (51, 48844),

Gene: Natkenzie_61 Start: 47958, Stop: 48302, Start Num: 51

Candidate Starts for Natkenzie_61:

(32, 47802), (35, 47835), (42, 47898), (Start: 45 @47913 has 61 MA's), (Start: 47 @47928 has 1 MA's), (51, 47958), (52, 47979), (53, 48000), (59, 48075), (61, 48117),

Gene: Nordenberg_57 Start: 46937, Stop: 47329, Start Num: 45

Candidate Starts for Nordenberg_57:

(Start: 45 @46937 has 61 MA's), (51, 46982), (55, 47048),

Gene: Paries_63 Start: 48836, Stop: 49228, Start Num: 45

Candidate Starts for Paries_63:

(9, 48446), (11, 48542), (22, 48653), (Start: 45 @48836 has 61 MA's), (51, 48881), (55, 48947), (59, 49001),

Gene: Phauci_49 Start: 42942, Stop: 43334, Start Num: 45

Candidate Starts for Phauci_49:

(29, 42804), (Start: 45 @42942 has 61 MA's), (51, 42987), (63, 43269),

Gene: Phinally_56 Start: 46306, Stop: 46698, Start Num: 45

Candidate Starts for Phinally_56:

(8, 45907), (29, 46174), (Start: 45 @46306 has 61 MA's), (51, 46351), (52, 46372), (63, 46633),

Gene: Ribeye_58 Start: 46869, Stop: 47261, Start Num: 45

Candidate Starts for Ribeye_58:

(Start: 45 @46869 has 61 MA's), (55, 46980), (59, 47034), (61, 47076),

Gene: RiverRaider_61 Start: 46353, Stop: 46745, Start Num: 45

Candidate Starts for RiverRaider_61:

(37, 46290), (Start: 45 @46353 has 61 MA's), (55, 46464), (56, 46473), (57, 46482), (59, 46518), (61, 46560),

Gene: RoadKill_53 Start: 42751, Stop: 43161, Start Num: 45

Candidate Starts for RoadKill_53:

(2, 42016), (Start: 45 @42751 has 61 MA's), (Start: 49 @42793 has 1 MA's), (51, 42799), (56, 42874), (59, 42919), (60, 42928),

Gene: Rofo_59 Start: 48102, Stop: 48494, Start Num: 45

Candidate Starts for Rofo_59:

(Start: 45 @48102 has 61 MA's), (51, 48147), (55, 48213),

Gene: Sampson_61 Start: 47858, Stop: 48247, Start Num: 45

Candidate Starts for Sampson_61:

(32, 47747), (35, 47780), (42, 47843), (Start: 45 @47858 has 61 MA's), (Start: 47 @47873 has 1 MA's), (51, 47903), (52, 47924), (53, 47945), (59, 48020), (61, 48062),

Gene: Sanjuju_58 Start: 48561, Stop: 48953, Start Num: 45

Candidate Starts for Sanjuju_58:

(Start: 45 @48561 has 61 MA's), (51, 48606), (55, 48672),

Gene: Saronaya_60 Start: 47229, Stop: 47621, Start Num: 45

Candidate Starts for Saronaya_60:

(12, 46932), (25, 47067), (29, 47091), (31, 47112), (Start: 45 @47229 has 61 MA's), (55, 47340), (59, 47394), (61, 47436),

Gene: SchottB_57 Start: 47421, Stop: 47813, Start Num: 45

Candidate Starts for SchottB_57:

(12, 47124), (25, 47259), (29, 47283), (31, 47304), (Start: 45 @47421 has 61 MA's), (55, 47532), (61, 47628),

Gene: Scioto_61 Start: 47959, Stop: 48303, Start Num: 51

Candidate Starts for Scioto_61:

(32, 47803), (35, 47836), (42, 47899), (Start: 45 @47914 has 61 MA's), (Start: 47 @47929 has 1 MA's), (51, 47959), (52, 47980), (53, 48001), (59, 48076), (61, 48118),

Gene: Sedona_59 Start: 49194, Stop: 49586, Start Num: 45

Candidate Starts for Sedona_59:

(44, 49182), (Start: 45 @49194 has 61 MA's), (51, 49239),

Gene: Shivanishola_58 Start: 46411, Stop: 46803, Start Num: 45

Candidate Starts for Shivanishola_58:

(10, 46099), (38, 46339), (44, 46396), (Start: 45 @46411 has 61 MA's), (51, 46456),

Gene: Sitar_61 Start: 49390, Stop: 49782, Start Num: 45

Candidate Starts for Sitar_61:

(44, 49378), (Start: 45 @49390 has 61 MA's), (51, 49435), (55, 49501),

Gene: StorminNorm_58 Start: 46871, Stop: 47263, Start Num: 45

Candidate Starts for StorminNorm_58:

(12, 46571), (25, 46709), (31, 46754), (Start: 45 @46871 has 61 MA's), (55, 46982), (59, 47036), (61, 47078),

Gene: Stultus_57 Start: 47652, Stop: 48044, Start Num: 45

Candidate Starts for Stultus_57:

(Start: 45 @47652 has 61 MA's), (51, 47697), (55, 47763),

Gene: Tangent_61 Start: 47807, Stop: 48199, Start Num: 45

Candidate Starts for Tangent_61:

(9, 47417), (11, 47513), (22, 47624), (Start: 45 @47807 has 61 MA's), (51, 47852), (55, 47918),

Gene: Tangerine_59 Start: 46631, Stop: 47023, Start Num: 45

Candidate Starts for Tangerine_59:

(12, 46334), (25, 46469), (29, 46493), (31, 46514), (Start: 45 @46631 has 61 MA's), (55, 46742), (61, 46838),

Gene: Tardus_62 Start: 48133, Stop: 48558, Start Num: 45

Candidate Starts for Tardus_62:

(Start: 45 @48133 has 61 MA's), (Start: 47 @48148 has 1 MA's), (51, 48178), (53, 48220), (58, 48274), (59, 48295), (64, 48520),

Gene: Thing3_59 Start: 47698, Stop: 48090, Start Num: 45

Candidate Starts for Thing3_59:

(11, 47404), (22, 47515), (Start: 45 @47698 has 61 MA's), (51, 47743), (55, 47809),

Gene: Tiamoceli_56 Start: 44219, Stop: 44587, Start Num: 49

Candidate Starts for Tiamoceli_56:

(2, 43307), (13, 43859), (Start: 45 @44177 has 61 MA's), (Start: 49 @44219 has 1 MA's), (51, 44225), (56, 44300), (59, 44345),

Gene: Twonlo_53 Start: 42672, Stop: 43082, Start Num: 45

Candidate Starts for Twonlo_53:

(2, 41937), (Start: 45 @42672 has 61 MA's), (Start: 49 @42714 has 1 MA's), (51, 42720), (56, 42795), (59, 42840), (60, 42849),

Gene: Tycho_57 Start: 46395, Stop: 46787, Start Num: 45

Candidate Starts for Tycho_57:

(5, 45960), (16, 46131), (30, 46278), (34, 46293), (37, 46326), (44, 46383), (Start: 45 @46395 has 61 MA's), (55, 46506), (61, 46602),

Gene: Verity_60 Start: 48679, Stop: 49068, Start Num: 45

Candidate Starts for Verity_60:

(7, 48280), (14, 48406), (19, 48433), (26, 48532), (36, 48610), (41, 48646), (Start: 45 @48679 has 61 MA's), (Start: 47 @48694 has 1 MA's), (51, 48724), (53, 48766), (55, 48787), (61, 48883),

Gene: ViaConlectus_60 Start: 46689, Stop: 47078, Start Num: 45

Candidate Starts for ViaConlectus_60:

(26, 46542), (36, 46620), (41, 46656), (Start: 45 @46689 has 61 MA's), (Start: 47 @46704 has 1 MA's), (51, 46734), (53, 46776), (54, 46785), (55, 46797), (61, 46893),

Gene: Vivi2_64 Start: 48862, Stop: 49254, Start Num: 45

Candidate Starts for Vivi2_64:

(Start: 45 @48862 has 61 MA's), (51, 48907), (55, 48973),

Gene: YorkOnyx_60 Start: 47243, Stop: 47635, Start Num: 45

Candidate Starts for YorkOnyx_60:

(12, 47039), (25, 47177), (Start: 45 @47243 has 61 MA's), (61, 47450),

Gene: Zipp_61 Start: 48687, Stop: 49076, Start Num: 45

Candidate Starts for Zipp_61:

(26, 48540), (36, 48618), (41, 48654), (Start: 45 @48687 has 61 MA's), (Start: 47 @48702 has 1 MA's), (51, 48732), (53, 48774), (55, 48795), (61, 48891),

Gene: Zitch_62 Start: 46922, Stop: 47296, Start Num: 47

Candidate Starts for Zitch_62:

(Start: 45 @46907 has 61 MA's), (Start: 47 @46922 has 1 MA's), (51, 46952), (53, 46994), (54, 47003), (55, 47015), (61, 47111),