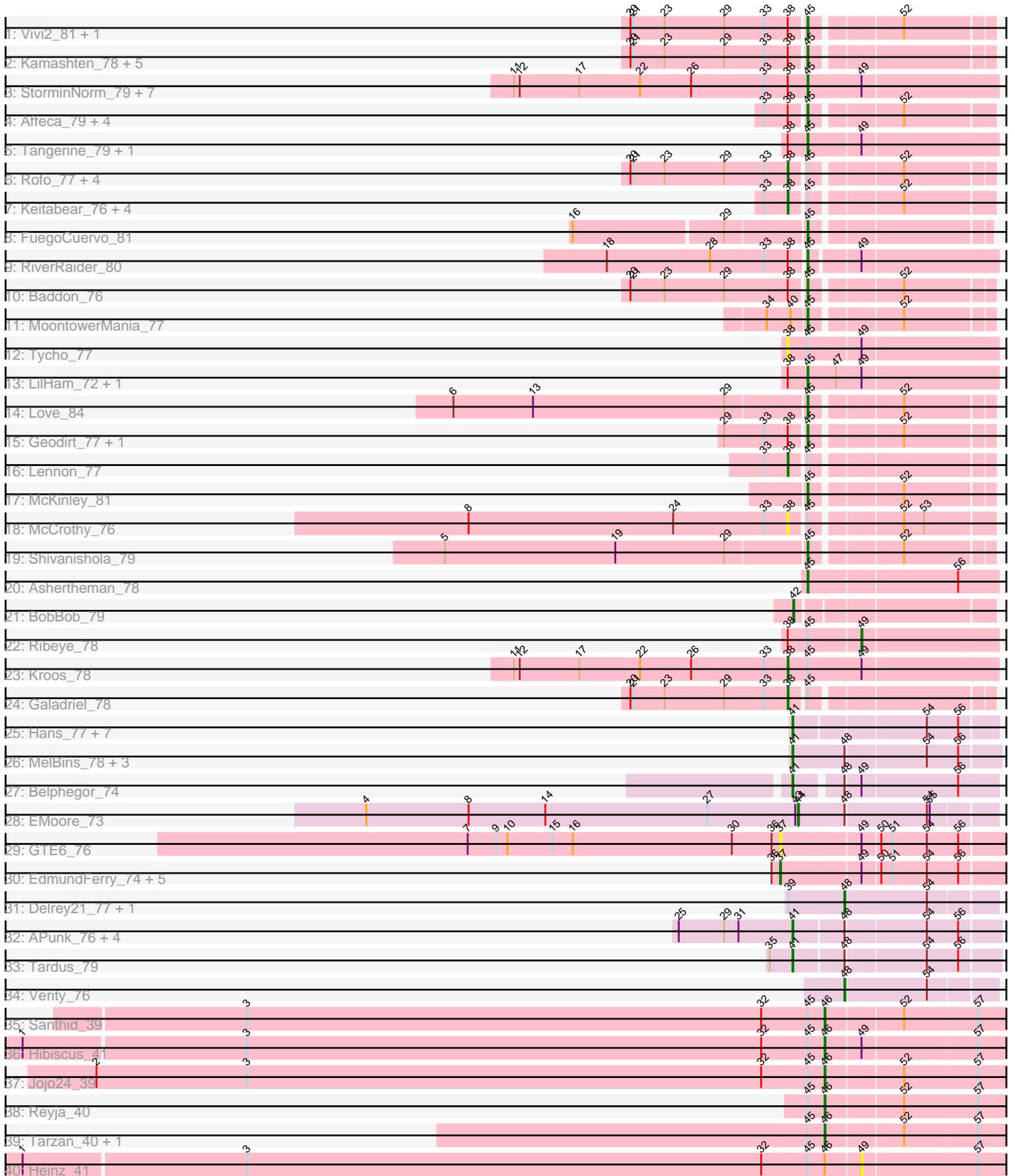# Pham 282144

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 282144 Report

This analysis was run 02/23/26 on database version 636.

Pham number 282144 has 89 members, 9 are drafts.

Phages represented in each track:
• Track 1 : Vivi2_81, Tangent_80
• Track 2 : Kamashten_78, Barsten_79, Thing3_78, Paries_81, ChadMasterC_78, Sedona_76
• Track 3 : StorminNorm_79, Saronaya_80, Flatwoods_78, JKSyngboy_76, Gustavo_80, SchottB_76, Baumdotcom_76, Gaea_79
• Track 4 : Affeca_79, Jabberwocky_76, Sitar_77, Sanjuju_76, Fitzgerald_76
• Track 5 : Tangerine_79, Bizzy_79
• Track 6 : Rofo_77, Charming_80, Brandonk123_81, Fosterous_79, Nordenberg_77
• Track 7 : Keitabear_76, Stultus_73, Angelicage_76, Ailee_75, Bibwit_76
• Track 8 : FuegoCuervo_81
• Track 9 : RiverRaider_80
• Track 10 : Baddon_76
• Track 11 : MoontowerMania_77
• Track 12 : Tycho_77
• Track 13 : LilHam_72, Kwobi_80
• Track 14 : Love_84
• Track 15 : Geodirt_77, Kewpiedoll_77
• Track 16 : Lennon_77
• Track 17 : McKinley_81
• Track 18 : McCrothy_76
• Track 19 : Shivanishola_79
• Track 20 : Ashertheman_78
• Track 21 : BobBob_79
• Track 22 : Ribeye_78
• Track 23 : Kroos_78
• Track 24 : Galadriel_78
• Track 25 : Hans_77, Pumpkiney_76, Ali17_73, Zitch_78, BigHunkinEater_76, ViaConlectus_76, Zipp_77, Phauci_68
• Track 26 : MelBins_78, Leonard_76, Inspectinfecti_77, Phinally_76
• Track 27 : Belphegor_74
• Track 28 : EMoore_73
• Track 29 : GTE6_76
• Track 30 : EdmundFerry_74, Chickadee_76, Dexdert_71, Twonlo_73, Kwekel_76, RoadKill_73
• Track 31 : Delrey21_77, DoctorFroggo_77
• Track 32 : APunk_76, Sampson_78, Abblin_76, Scioto_76, Natkenzie_76
• Track 33 : Tardus_79

• Track 34 : Verity_76
• Track 35 : Santhid_39
• Track 36 : Hibiscus_41
• Track 37 : Jojo24_39
• Track 38 : Reyja_40
• Track 39 : Tarzan_40, DonkeyMan_40
• Track 40 : Heinz_41


***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 35 of the 80 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Affeca_79, Ashertheman_78, Baddon_76, Barsten_79, Baumdotcom_76, Bizzy_79, ChadMasterC_78, Fitzgerald_76, Flatwoods_78, FuegoCuervo_81, Gaea_79, Geodirt_77, Gustavo_80, JKSyngboy_76, Jabberwocky_76, Kamashten_78, Kewpiedoll_77, Kwobi_80, LilHam_72, Love_84, McKinley_81, MoontowerMania_77, Paries_81, RiverRaider_80, Sanjuju_76, Saronaya_80, SchottB_76, Sedona_76, Shivanishola_79, Sitar_77, StorminNorm_79, Tangent_80, Tangerine_79, Thing3_78, Vivi2_81,

Genes that have the "Most Annotated" start but do not call it:
• Ailee_75, Angelicage_76, Bibwit_76, Brandonk123_81, Charming_80, DonkeyMan_40, Fosterous_79, Galadriel_78, Heinz_41, Hibiscus_41, Jojo24_39, Keitabear_76, Kroos_78, Lennon_77, McCrothy_76, Nordenberg_77, Reyja_40, Ribeye_78, Rofo_77, Santhid_39, Stultus_73, Tarzan_40, Tycho_77,

Genes that do not have the "Most Annotated" start:
• APunk_76, Abblin_76, Ali17_73, Belphegor_74, BigHunkinEater_76, BobBob_79, Chickadee_76, Delrey21_77, Dexdert_71, DoctorFroggo_77, EMoore_73, EdmundFerry_74, GTE6_76, Hans_77, Inspectinfecti_77, Kwekel_76, Leonard_76, MelBins_78, Natkenzie_76, Phauci_68, Phinally_76, Pumpkiney_76, RoadKill_73, Sampson_78, Scioto_76, Tardus_79, Twonlo_73, Verity_76, ViaConlectus_76, Zipp_77, Zitch_78,

**Summary by start number:**

Start 37:
• Found in 7 of 89 ( 7.9% ) of genes in pham
• Manual Annotations of this start: 6 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Chickadee_76 (DE3), Dexdert_71 (DE3), EdmundFerry_74 (DE3), GTE6_76 (DE3), Kwekel_76 (DE3), RoadKill_73 (DE3), Twonlo_73 (DE3),

Start 38:
• Found in 45 of 89 ( 50.6% ) of genes in pham
• Manual Annotations of this start: 13 of 80
• Called 33.3% of time when present

• Phage (with cluster) where this start called: Ailee_75 (DE1), Angelicage_76 (DE1), Bibwit_76 (DE1), Brandonk123_81 (DE1), Charming_80 (DE1), Fosterous_79 (DE1), Galadriel_78 (DE1), Keitabear_76 (DE1), Kroos_78 (DE1), Lennon_77 (DE1), McCrothy_76 (DE1), Nordenberg_77 (DE1), Rofo_77 (DE1), Stultus_73 (DE1), Tycho_77 (DE1),

Start 41:
• Found in 19 of 89 ( 21.3% ) of genes in pham
• Manual Annotations of this start: 14 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: APunk_76 (DE4), Abblin_76 (DE4), Ali17_73 (DE2), Belphegor_74 (DE2), BigHunkinEater_76 (DE4), Hans_77 (DE2), Inspectinfecti_77 (DE2), Leonard_76 (DE2), MelBins_78 (DE2), Natkenzie_76 (DE4), Phauci_68 (DE2), Phinally_76 (DE2), Pumpkiney_76 (DE4), Sampson_78 (DE4), Scioto_76 (DE4), Tardus_79 (DE4), ViaConlectus_76 (DE4), Zipp_77 (DE4), Zitch_78 (DE4),

Start 42:
• Found in 1 of 89 ( 1.1% ) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: BobBob_79 (DE1),

Start 44:
• Found in 1 of 89 ( 1.1% ) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 100.0% of time when present
• Phage (with cluster) where this start called: EMoore_73 (DE2),

Start 45:
• Found in 58 of 89 ( 65.2% ) of genes in pham
• Manual Annotations of this start: 35 of 80
• Called 60.3% of time when present
• Phage (with cluster) where this start called: Affeca_79 (DE1), Ashertheman_78 (DE1), Baddon_76 (DE1), Barsten_79 (DE1), Baumdotcom_76 (DE1), Bizzy_79 (DE1), ChadMasterC_78 (DE1), Fitzgerald_76 (DE1), Flatwoods_78 (DE1), FuegoCuervo_81 (DE1), Gaea_79 (DE1), Geodirt_77 (DE1), Gustavo_80 (DE1), JKSyngboy_76 (DE1), Jabberwocky_76 (DE1), Kamashten_78 (DE1), Kewpiedoll_77 (DE1), Kwobi_80 (DE1), LilHam_72 (DE1), Love_84 (DE1), McKinley_81 (DE1), MoontowerMania_77 (DE1), Paries_81 (DE1), RiverRaider_80 (DE1), Sanjuju_76 (DE1), Saronaya_80 (DE1), SchottB_76 (DE1), Sedona_76 (DE1), Shivanishola_79 (DE1), Sitar_77 (DE1), StorminNorm_79 (DE1), Tangent_80 (DE1), Tangerine_79 (DE1), Thing3_78 (DE1), Vivi2_81 (DE1),

Start 46:
• Found in 7 of 89 ( 7.9% ) of genes in pham
• Manual Annotations of this start: 6 of 80
• Called 85.7% of time when present
• Phage (with cluster) where this start called: DonkeyMan_40 (DY), Hibiscus_41 (DY), Jojo24_39 (DY), Reyja_40 (DY), Santhid_39 (DY), Tarzan_40 (DY),

Start 48:
• Found in 15 of 89 ( 16.9% ) of genes in pham

• Manual Annotations of this start: 3 of 80
• Called 20.0% of time when present
• Phage (with cluster) where this start called: Delrey21_77 (DE4), DoctorFroggo_77 (DE4), Verity_76 (DE4),

Start 49:
• Found in 26 of 89 ( 29.2% ) of genes in pham
• Manual Annotations of this start: 1 of 80
• Called 7.7% of time when present
• Phage (with cluster) where this start called: Heinz_41 (DY), Ribeye_78 (DE1),

**Summary by clusters:**

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

Info for manual annotations of cluster DE1:
•Start number 38 was manually annotated 13 times for cluster DE1.
•Start number 42 was manually annotated 1 time for cluster DE1.
•Start number 45 was manually annotated 35 times for cluster DE1.
•Start number 49 was manually annotated 1 time for cluster DE1.

Info for manual annotations of cluster DE2:
•Start number 41 was manually annotated 8 times for cluster DE2.
•Start number 44 was manually annotated 1 time for cluster DE2.

Info for manual annotations of cluster DE3:
•Start number 37 was manually annotated 6 times for cluster DE3.

Info for manual annotations of cluster DE4:
•Start number 41 was manually annotated 6 times for cluster DE4.
•Start number 48 was manually annotated 3 times for cluster DE4.

Info for manual annotations of cluster DY:
•Start number 46 was manually annotated 6 times for cluster DY.


*Gene Information:*
Gene: APunk_76 Start: 54169, Stop: 54375, Start Num: 41
Candidate Starts for APunk_76:
(25, 54049), (29, 54097), (31, 54112), (Start: 41 @54169 has 14 MA's), (Start: 48 @54220 has 3 MA's), (54, 54301), (56, 54334),

Gene: Abblin_76 Start: 54327, Stop: 54533, Start Num: 41
Candidate Starts for Abblin_76:
(25, 54207), (29, 54255), (31, 54270), (Start: 41 @54327 has 14 MA's), (Start: 48 @54378 has 3 MA's), (54, 54459), (56, 54492),

Gene: Affeca_79 Start: 56213, Stop: 56392, Start Num: 45
Candidate Starts for Affeca_79:
(33, 56174), (Start: 38 @56198 has 13 MA's), (Start: 45 @56213 has 35 MA's), (52, 56300),

Gene: Ailee_75 Start: 55227, Stop: 55421, Start Num: 38
Candidate Starts for Ailee_75:
(33, 55203), (Start: 38 @55227 has 13 MA's), (Start: 45 @55242 has 35 MA's), (52, 55329),

Gene: Ali17_73 Start: 53690, Stop: 53893, Start Num: 41
Candidate Starts for Ali17_73:
(Start: 41 @53690 has 14 MA's), (54, 53822), (56, 53855),

Gene: Angelicage_76 Start: 56166, Stop: 56360, Start Num: 38
Candidate Starts for Angelicage_76:
(33, 56142), (Start: 38 @56166 has 13 MA's), (Start: 45 @56181 has 35 MA's), (52, 56268),

Gene: Ashertheman_78 Start: 54713, Stop: 54907, Start Num: 45
Candidate Starts for Ashertheman_78:
(Start: 45 @54713 has 35 MA's), (56, 54866),

Gene: Baddon_76 Start: 55365, Stop: 55541, Start Num: 45
Candidate Starts for Baddon_76:
(20, 55185), (21, 55188), (23, 55221), (29, 55284), (Start: 38 @55350 has 13 MA's), (Start: 45 @55365 has 35 MA's), (52, 55452),

Gene: Barsten_79 Start: 56149, Stop: 56325, Start Num: 45
Candidate Starts for Barsten_79:
(20, 55969), (21, 55972), (23, 56005), (29, 56068), (33, 56110), (Start: 38 @56134 has 13 MA's), (Start: 45 @56149 has 35 MA's),

Gene: Baumdotcom_76 Start: 54819, Stop: 55016, Start Num: 45
Candidate Starts for Baumdotcom_76:
(11, 54513), (12, 54519), (17, 54582), (22, 54645), (26, 54699), (33, 54774), (Start: 38 @54798 has 13 MA's), (Start: 45 @54819 has 35 MA's), (Start: 49 @54876 has 1 MA's),

Gene: Belphegor_74 Start: 55556, Stop: 55756, Start Num: 41
Candidate Starts for Belphegor_74:
(Start: 41 @55556 has 14 MA's), (Start: 48 @55601 has 3 MA's), (Start: 49 @55616 has 1 MA's), (56, 55715),

Gene: Bibwit_76 Start: 54868, Stop: 55062, Start Num: 38
Candidate Starts for Bibwit_76:
(33, 54844), (Start: 38 @54868 has 13 MA's), (Start: 45 @54883 has 35 MA's), (52, 54970),

Gene: BigHunkinEater_76 Start: 53953, Stop: 54156, Start Num: 41
Candidate Starts for BigHunkinEater_76:
(Start: 41 @53953 has 14 MA's), (54, 54085), (56, 54118),

Gene: Bizzy_79 Start: 54892, Stop: 55089, Start Num: 45
Candidate Starts for Bizzy_79:
(Start: 38 @54871 has 13 MA's), (Start: 45 @54892 has 35 MA's), (Start: 49 @54949 has 1 MA's),

Gene: BobBob_79 Start: 55393, Stop: 55587, Start Num: 42
Candidate Starts for BobBob_79:
(Start: 42 @55393 has 1 MA's),

Gene: Brandonk123_81 Start: 55560, Stop: 55754, Start Num: 38

Candidate Starts for Brandonk123_81:
(20, 55395), (21, 55398), (23, 55431), (29, 55494), (33, 55536), (Start: 38 @55560 has 13 MA's),
(Start: 45 @55575 has 35 MA's), (52, 55662),

Gene: ChadMasterC_78 Start: 57131, Stop: 57307, Start Num: 45
Candidate Starts for ChadMasterC_78:
(20, 56951), (21, 56954), (23, 56987), (29, 57050), (33, 57092), (Start: 38 @57116 has 13 MA's),
(Start: 45 @57131 has 35 MA's),

Gene: Charming_80 Start: 54842, Stop: 55033, Start Num: 38
Candidate Starts for Charming_80:
(20, 54677), (21, 54680), (23, 54713), (29, 54776), (33, 54818), (Start: 38 @54842 has 13 MA's),
(Start: 45 @54857 has 35 MA's), (52, 54944),

Gene: Chickadee_76 Start: 52030, Stop: 52266, Start Num: 37
Candidate Starts for Chickadee_76:
(36, 52021), (Start: 37 @52030 has 6 MA's), (Start: 49 @52111 has 1 MA's), (50, 52129), (51, 52141),
(54, 52177), (56, 52210),

Gene: Delrey21_77 Start: 56160, Stop: 56312, Start Num: 48
Candidate Starts for Delrey21_77:
(39, 56103), (Start: 48 @56160 has 3 MA's), (54, 56244),

Gene: Dexdert_71 Start: 50488, Stop: 50724, Start Num: 37
Candidate Starts for Dexdert_71:
(36, 50479), (Start: 37 @50488 has 6 MA's), (Start: 49 @50569 has 1 MA's), (50, 50587), (51, 50599),
(54, 50635), (56, 50668),

Gene: DoctorFroggo_77 Start: 56160, Stop: 56312, Start Num: 48
Candidate Starts for DoctorFroggo_77:
(39, 56103), (Start: 48 @56160 has 3 MA's), (54, 56244),

Gene: DonkeyMan_40 Start: 29814, Stop: 29999, Start Num: 46
Candidate Starts for DonkeyMan_40:
(Start: 45 @29796 has 35 MA's), (Start: 46 @29814 has 6 MA's), (52, 29892), (57, 29967),

Gene: EMoore_73 Start: 55058, Stop: 55258, Start Num: 44
Candidate Starts for EMoore_73:
(4, 54602), (8, 54710), (14, 54791), (27, 54962), (43, 55055), (Start: 44 @55058 has 1 MA's), (Start: 48
@55106 has 3 MA's), (54, 55190), (55, 55193),

Gene: EdmundFerry_74 Start: 51573, Stop: 51809, Start Num: 37
Candidate Starts for EdmundFerry_74:
(36, 51564), (Start: 37 @51573 has 6 MA's), (Start: 49 @51654 has 1 MA's), (50, 51672), (51, 51684),
(54, 51720), (56, 51753),

Gene: Fitzgerald_76 Start: 56029, Stop: 56208, Start Num: 45
Candidate Starts for Fitzgerald_76:
(33, 55990), (Start: 38 @56014 has 13 MA's), (Start: 45 @56029 has 35 MA's), (52, 56116),

Gene: Flatwoods_78 Start: 54041, Stop: 54238, Start Num: 45
Candidate Starts for Flatwoods_78:

(11, 53735), (12, 53741), (17, 53804), (22, 53867), (26, 53921), (33, 53996), (Start: 38 @54020 has 13 MA's), (Start: 45 @54041 has 35 MA's), (Start: 49 @54098 has 1 MA's),

Gene: Fosterous_79 Start: 55836, Stop: 56027, Start Num: 38
Candidate Starts for Fosterous_79:
(20, 55671), (21, 55674), (23, 55707), (29, 55770), (33, 55812), (Start: 38 @55836 has 13 MA's), (Start: 45 @55851 has 35 MA's), (52, 55938),

Gene: FuegoCuervo_81 Start: 55690, Stop: 55863, Start Num: 45
Candidate Starts for FuegoCuervo_81:
(16, 55456), (29, 55609), (Start: 45 @55690 has 35 MA's),

Gene: GTE6_76 Start: 52833, Stop: 53069, Start Num: 37
Candidate Starts for GTE6_76:
(7, 52503), (9, 52533), (10, 52545), (15, 52593), (16, 52614), (30, 52782), (36, 52824), (Start: 37 @52833 has 6 MA's), (Start: 49 @52914 has 1 MA's), (50, 52932), (51, 52944), (54, 52980), (56, 53013),

Gene: Gaea_79 Start: 54628, Stop: 54825, Start Num: 45
Candidate Starts for Gaea_79:
(11, 54322), (12, 54328), (17, 54391), (22, 54454), (26, 54508), (33, 54583), (Start: 38 @54607 has 13 MA's), (Start: 45 @54628 has 35 MA's), (Start: 49 @54685 has 1 MA's),

Gene: Galadriel_78 Start: 56042, Stop: 56233, Start Num: 38
Candidate Starts for Galadriel_78:
(20, 55877), (21, 55880), (23, 55913), (29, 55976), (33, 56018), (Start: 38 @56042 has 13 MA's), (Start: 45 @56057 has 35 MA's),

Gene: Geodirt_77 Start: 56380, Stop: 56556, Start Num: 45
Candidate Starts for Geodirt_77:
(29, 56299), (33, 56341), (Start: 38 @56365 has 13 MA's), (Start: 45 @56380 has 35 MA's), (52, 56467),

Gene: Gustavo_80 Start: 55613, Stop: 55807, Start Num: 45
Candidate Starts for Gustavo_80:
(11, 55307), (12, 55313), (17, 55376), (22, 55439), (26, 55493), (33, 55568), (Start: 38 @55592 has 13 MA's), (Start: 45 @55613 has 35 MA's), (Start: 49 @55667 has 1 MA's),

Gene: Hans_77 Start: 54617, Stop: 54820, Start Num: 41
Candidate Starts for Hans_77:
(Start: 41 @54617 has 14 MA's), (54, 54749), (56, 54782),

Gene: Heinz_41 Start: 27911, Stop: 28060, Start Num: 49
Candidate Starts for Heinz_41:
(1, 27035), (3, 27266), (32, 27809), (Start: 45 @27857 has 35 MA's), (Start: 46 @27875 has 6 MA's), (Start: 49 @27911 has 1 MA's), (57, 28028),

Gene: Hibiscus_41 Start: 27824, Stop: 28009, Start Num: 46
Candidate Starts for Hibiscus_41:
(1, 26984), (3, 27215), (32, 27758), (Start: 45 @27806 has 35 MA's), (Start: 46 @27824 has 6 MA's), (Start: 49 @27860 has 1 MA's), (57, 27977),

Gene: Inspectinfecti_77 Start: 54591, Stop: 54797, Start Num: 41

Candidate Starts for Inspectinfecti_77:
(Start: 41 @54591 has 14 MA's), (Start: 48 @54645 has 3 MA's), (54, 54726), (56, 54759),

Gene: JKSyngboy_76 Start: 55527, Stop: 55724, Start Num: 45
Candidate Starts for JKSyngboy_76:
(11, 55221), (12, 55227), (17, 55290), (22, 55353), (26, 55407), (33, 55482), (Start: 38 @55506 has 13 MA's), (Start: 45 @55527 has 35 MA's), (Start: 49 @55584 has 1 MA's),

Gene: Jabberwocky_76 Start: 56255, Stop: 56434, Start Num: 45
Candidate Starts for Jabberwocky_76:
(33, 56216), (Start: 38 @56240 has 13 MA's), (Start: 45 @56255 has 35 MA's), (52, 56342),

Gene: Jojo24_39 Start: 28425, Stop: 28610, Start Num: 46
Candidate Starts for Jojo24_39:
(2, 27657), (3, 27816), (32, 28359), (Start: 45 @28407 has 35 MA's), (Start: 46 @28425 has 6 MA's), (52, 28503), (57, 28578),

Gene: Kamashten_78 Start: 55951, Stop: 56127, Start Num: 45
Candidate Starts for Kamashten_78:
(20, 55771), (21, 55774), (23, 55807), (29, 55870), (33, 55912), (Start: 38 @55936 has 13 MA's), (Start: 45 @55951 has 35 MA's),

Gene: Keitabear_76 Start: 56789, Stop: 56983, Start Num: 38
Candidate Starts for Keitabear_76:
(33, 56765), (Start: 38 @56789 has 13 MA's), (Start: 45 @56804 has 35 MA's), (52, 56891),

Gene: Kewpiedoll_77 Start: 56043, Stop: 56219, Start Num: 45
Candidate Starts for Kewpiedoll_77:
(29, 55962), (33, 56004), (Start: 38 @56028 has 13 MA's), (Start: 45 @56043 has 35 MA's), (52, 56130),

Gene: Kroos_78 Start: 55146, Stop: 55364, Start Num: 38
Candidate Starts for Kroos_78:
(11, 54861), (12, 54867), (17, 54930), (22, 54993), (26, 55047), (33, 55122), (Start: 38 @55146 has 13 MA's), (Start: 45 @55167 has 35 MA's), (Start: 49 @55224 has 1 MA's),

Gene: Kwekel_76 Start: 51943, Stop: 52179, Start Num: 37
Candidate Starts for Kwekel_76:
(36, 51934), (Start: 37 @51943 has 6 MA's), (Start: 49 @52024 has 1 MA's), (50, 52042), (51, 52054), (54, 52090), (56, 52123),

Gene: Kwobi_80 Start: 55677, Stop: 55874, Start Num: 45
Candidate Starts for Kwobi_80:
(Start: 38 @55656 has 13 MA's), (Start: 45 @55677 has 35 MA's), (47, 55707), (Start: 49 @55734 has 1 MA's),

Gene: Lennon_77 Start: 56905, Stop: 57096, Start Num: 38
Candidate Starts for Lennon_77:
(33, 56881), (Start: 38 @56905 has 13 MA's), (Start: 45 @56920 has 35 MA's),

Gene: Leonard_76 Start: 54654, Stop: 54860, Start Num: 41
Candidate Starts for Leonard_76:
(Start: 41 @54654 has 14 MA's), (Start: 48 @54708 has 3 MA's), (54, 54789), (56, 54822),

Gene: LilHam_72 Start: 52759, Stop: 52956, Start Num: 45
Candidate Starts for LilHam_72:
(Start: 38 @52738 has 13 MA's), (Start: 45 @52759 has 35 MA's), (47, 52789), (Start: 49 @52816 has 1 MA's),

Gene: Love_84 Start: 56974, Stop: 57150, Start Num: 45
Candidate Starts for Love_84:
(6, 56608), (13, 56692), (29, 56893), (Start: 45 @56974 has 35 MA's), (52, 57061),

Gene: McCrothy_76 Start: 56690, Stop: 56884, Start Num: 38
Candidate Starts for McCrothy_76:
(8, 56357), (24, 56573), (33, 56666), (Start: 38 @56690 has 13 MA's), (Start: 45 @56705 has 35 MA's), (52, 56792), (53, 56813),

Gene: McKinley_81 Start: 56038, Stop: 56214, Start Num: 45
Candidate Starts for McKinley_81:
(Start: 45 @56038 has 35 MA's), (52, 56125),

Gene: MelBins_78 Start: 54859, Stop: 55068, Start Num: 41
Candidate Starts for MelBins_78:
(Start: 41 @54859 has 14 MA's), (Start: 48 @54913 has 3 MA's), (54, 54994), (56, 55027),

Gene: MoontowerMania_77 Start: 56599, Stop: 56775, Start Num: 45
Candidate Starts for MoontowerMania_77:
(34, 56560), (40, 56584), (Start: 45 @56599 has 35 MA's), (52, 56686),

Gene: Natkenzie_76 Start: 54327, Stop: 54533, Start Num: 41
Candidate Starts for Natkenzie_76:
(25, 54207), (29, 54255), (31, 54270), (Start: 41 @54327 has 14 MA's), (Start: 48 @54378 has 3 MA's), (54, 54459), (56, 54492),

Gene: Nordenberg_77 Start: 54678, Stop: 54869, Start Num: 38
Candidate Starts for Nordenberg_77:
(20, 54513), (21, 54516), (23, 54549), (29, 54612), (33, 54654), (Start: 38 @54678 has 13 MA's), (Start: 45 @54693 has 35 MA's), (52, 54780),

Gene: Paries_81 Start: 56980, Stop: 57156, Start Num: 45
Candidate Starts for Paries_81:
(20, 56800), (21, 56803), (23, 56836), (29, 56899), (33, 56941), (Start: 38 @56965 has 13 MA's), (Start: 45 @56980 has 35 MA's),

Gene: Phauci_68 Start: 51694, Stop: 51897, Start Num: 41
Candidate Starts for Phauci_68:
(Start: 41 @51694 has 14 MA's), (54, 51826), (56, 51859),

Gene: Phinally_76 Start: 54651, Stop: 54857, Start Num: 41
Candidate Starts for Phinally_76:
(Start: 41 @54651 has 14 MA's), (Start: 48 @54705 has 3 MA's), (54, 54786), (56, 54819),

Gene: Pumpkiney_76 Start: 52913, Stop: 53116, Start Num: 41
Candidate Starts for Pumpkiney_76:
(Start: 41 @52913 has 14 MA's), (54, 53045), (56, 53078),

Gene: Reyja_40 Start: 28862, Stop: 29047, Start Num: 46
Candidate Starts for Reyja_40:
(Start: 45 @28844 has 35 MA's), (Start: 46 @28862 has 6 MA's), (52, 28940), (57, 29015),

Gene: Ribeye_78 Start: 54810, Stop: 54950, Start Num: 49
Candidate Starts for Ribeye_78:
(Start: 38 @54735 has 13 MA's), (Start: 45 @54756 has 35 MA's), (Start: 49 @54810 has 1 MA's),

Gene: RiverRaider_80 Start: 54050, Stop: 54238, Start Num: 45
Candidate Starts for RiverRaider_80:
(18, 53846), (28, 53954), (33, 54011), (Start: 38 @54035 has 13 MA's), (Start: 45 @54050 has 35 MA's), (Start: 49 @54098 has 1 MA's),

Gene: RoadKill_73 Start: 51472, Stop: 51708, Start Num: 37
Candidate Starts for RoadKill_73:
(36, 51463), (Start: 37 @51472 has 6 MA's), (Start: 49 @51553 has 1 MA's), (50, 51571), (51, 51583), (54, 51619), (56, 51652),

Gene: Rofo_77 Start: 55418, Stop: 55609, Start Num: 38
Candidate Starts for Rofo_77:
(20, 55253), (21, 55256), (23, 55289), (29, 55352), (33, 55394), (Start: 38 @55418 has 13 MA's), (Start: 45 @55433 has 35 MA's), (52, 55520),

Gene: Sampson_78 Start: 54478, Stop: 54684, Start Num: 41
Candidate Starts for Sampson_78:
(25, 54358), (29, 54406), (31, 54421), (Start: 41 @54478 has 14 MA's), (Start: 48 @54529 has 3 MA's), (54, 54610), (56, 54643),

Gene: Sanjuju_76 Start: 56119, Stop: 56298, Start Num: 45
Candidate Starts for Sanjuju_76:
(33, 56080), (Start: 38 @56104 has 13 MA's), (Start: 45 @56119 has 35 MA's), (52, 56206),

Gene: Santhid_39 Start: 27147, Stop: 27332, Start Num: 46
Candidate Starts for Santhid_39:
(3, 26538), (32, 27081), (Start: 45 @27129 has 35 MA's), (Start: 46 @27147 has 6 MA's), (52, 27225), (57, 27300),

Gene: Saronaya_80 Start: 55613, Stop: 55807, Start Num: 45
Candidate Starts for Saronaya_80:
(11, 55307), (12, 55313), (17, 55376), (22, 55439), (26, 55493), (33, 55568), (Start: 38 @55592 has 13 MA's), (Start: 45 @55613 has 35 MA's), (Start: 49 @55667 has 1 MA's),

Gene: SchottB_76 Start: 55234, Stop: 55431, Start Num: 45
Candidate Starts for SchottB_76:
(11, 54928), (12, 54934), (17, 54997), (22, 55060), (26, 55114), (33, 55189), (Start: 38 @55213 has 13 MA's), (Start: 45 @55234 has 35 MA's), (Start: 49 @55291 has 1 MA's),

Gene: Scioto_76 Start: 54328, Stop: 54534, Start Num: 41
Candidate Starts for Scioto_76:
(25, 54208), (29, 54256), (31, 54271), (Start: 41 @54328 has 14 MA's), (Start: 48 @54379 has 3 MA's), (54, 54460), (56, 54493),

Gene: Sedona_76 Start: 56619, Stop: 56795, Start Num: 45
Candidate Starts for Sedona_76:
(20, 56439), (21, 56442), (23, 56475), (29, 56538), (33, 56580), (Start: 38 @56604 has 13 MA's),
(Start: 45 @56619 has 35 MA's),

Gene: Shivanishola_79 Start: 54544, Stop: 54720, Start Num: 45
Candidate Starts for Shivanishola_79:
(5, 54169), (19, 54349), (29, 54463), (Start: 45 @54544 has 35 MA's), (52, 54631),

Gene: Sitar_77 Start: 56663, Stop: 56842, Start Num: 45
Candidate Starts for Sitar_77:
(33, 56624), (Start: 38 @56648 has 13 MA's), (Start: 45 @56663 has 35 MA's), (52, 56750),

Gene: StorminNorm_79 Start: 55404, Stop: 55601, Start Num: 45
Candidate Starts for StorminNorm_79:
(11, 55098), (12, 55104), (17, 55167), (22, 55230), (26, 55284), (33, 55359), (Start: 38 @55383 has 13
MA's), (Start: 45 @55404 has 35 MA's), (Start: 49 @55461 has 1 MA's),

Gene: Stultus_73 Start: 54895, Stop: 55089, Start Num: 38
Candidate Starts for Stultus_73:
(33, 54871), (Start: 38 @54895 has 13 MA's), (Start: 45 @54910 has 35 MA's), (52, 54997),

Gene: Tangent_80 Start: 55138, Stop: 55314, Start Num: 45
Candidate Starts for Tangent_80:
(20, 54958), (21, 54961), (23, 54994), (29, 55057), (33, 55099), (Start: 38 @55123 has 13 MA's),
(Start: 45 @55138 has 35 MA's), (52, 55225),

Gene: Tangerine_79 Start: 54889, Stop: 55083, Start Num: 45
Candidate Starts for Tangerine_79:
(Start: 38 @54868 has 13 MA's), (Start: 45 @54889 has 35 MA's), (Start: 49 @54943 has 1 MA's),

Gene: Tardus_79 Start: 55062, Stop: 55268, Start Num: 41
Candidate Starts for Tardus_79:
(35, 55038), (Start: 41 @55062 has 14 MA's), (Start: 48 @55113 has 3 MA's), (54, 55194), (56, 55227),

Gene: Tarzan_40 Start: 28296, Stop: 28481, Start Num: 46
Candidate Starts for Tarzan_40:
(Start: 45 @28278 has 35 MA's), (Start: 46 @28296 has 6 MA's), (52, 28374), (57, 28449),

Gene: Thing3_78 Start: 55951, Stop: 56127, Start Num: 45
Candidate Starts for Thing3_78:
(20, 55771), (21, 55774), (23, 55807), (29, 55870), (33, 55912), (Start: 38 @55936 has 13 MA's),
(Start: 45 @55951 has 35 MA's),

Gene: Twonlo_73 Start: 52012, Stop: 52248, Start Num: 37
Candidate Starts for Twonlo_73:
(36, 52003), (Start: 37 @52012 has 6 MA's), (Start: 49 @52093 has 1 MA's), (50, 52111), (51, 52123),
(54, 52159), (56, 52192),

Gene: Tycho_77 Start: 54684, Stop: 54899, Start Num: 38
Candidate Starts for Tycho_77:
(Start: 38 @54684 has 13 MA's), (Start: 45 @54705 has 35 MA's), (Start: 49 @54759 has 1 MA's),

Gene: Verity_76 Start: 56022, Stop: 56174, Start Num: 48
Candidate Starts for Verity_76:
(Start: 48 @56022 has 3 MA's), (54, 56106),

Gene: ViaConlectus_76 Start: 53258, Stop: 53461, Start Num: 41
Candidate Starts for ViaConlectus_76:
(Start: 41 @53258 has 14 MA's), (54, 53390), (56, 53423),

Gene: Vivi2_81 Start: 56194, Stop: 56370, Start Num: 45
Candidate Starts for Vivi2_81:
(20, 56014), (21, 56017), (23, 56050), (29, 56113), (33, 56155), (Start: 38 @56179 has 13 MA's),
(Start: 45 @56194 has 35 MA's), (52, 56281),

Gene: Zipp_77 Start: 55685, Stop: 55888, Start Num: 41
Candidate Starts for Zipp_77:
(Start: 41 @55685 has 14 MA's), (54, 55817), (56, 55850),

Gene: Zitch_78 Start: 54135, Stop: 54338, Start Num: 41
Candidate Starts for Zitch_78:
(Start: 41 @54135 has 14 MA's), (54, 54267), (56, 54300),