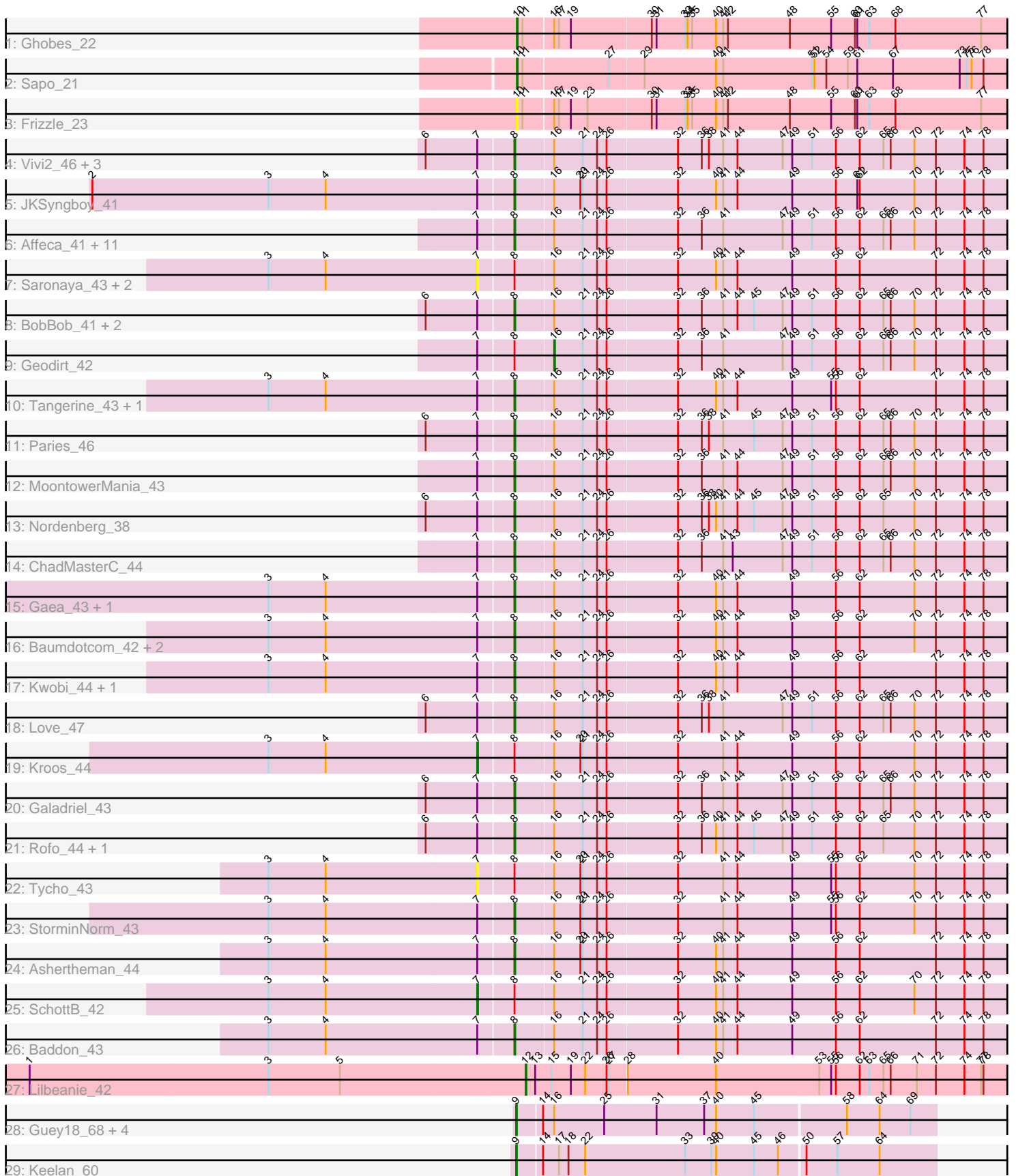


Pham 194042



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 194042 Report

This analysis was run 11/02/24 on database version 579.

Pham number 194042 has 57 members, 9 are drafts.

Phages represented in each track:

- Track 1 : Ghobes_22
- Track 2 : Sapo_21
- Track 3 : Frizzle_23
- Track 4 : Vivi2_46, Fitzgerald_42, McKinley_45, Sanjuju_42
- Track 5 : JKSyngboy_41
- Track 6 : Affeca_41, Lennon_43, Jabberwocky_42, Kamashten_41, Sitar_43, Barsten_44, Fosterous_41, Thing3_41, Stultus_42, Angelicage_41, Kewpiedoll_43, Shivanishola_43
- Track 7 : Saronaya_43, Gustavo_43, Derg_41
- Track 8 : BobBob_41, Charming_44, Tangent_44
- Track 9 : Geodirt_42
- Track 10 : Tangerine_43, YorkOnyx_44
- Track 11 : Paries_46
- Track 12 : MoontowerMania_43
- Track 13 : Nordenberg_38
- Track 14 : ChadMasterC_44
- Track 15 : Gaea_43, Bizzy_44
- Track 16 : Baumdotcom_42, Flatwoods_44, LilHam_41
- Track 17 : Kwobi_44, Ribeye_44
- Track 18 : Love_47
- Track 19 : Kroos_44
- Track 20 : Galadriel_43
- Track 21 : Rofo_44, Brandonk123_45
- Track 22 : Tycho_43
- Track 23 : StorminNorm_43
- Track 24 : Ashertheman_44
- Track 25 : SchottB_42
- Track 26 : Baddon_43
- Track 27 : Lilbeanie_42
- Track 28 : Guey18_68, Fryberger_62, Volt_65, Ziko_65, Ronaldo_65
- Track 29 : Keelan_60

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

The start number called the most often in the published annotations is 8, it was called in 36 of the 48 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca_41, Angelicage_41, Ashertheman_44, Baddon_43, Barsten_44, Baumdotcom_42, Bizzy_44, BobBob_41, Brandonk123_45, ChadMasterC_44, Charming_44, Fitzgerald_42, Flatwoods_44, Fosterous_41, Gaea_43, Galadriel_43, JKSyngboy_41, Jabberwocky_42, Kamashten_41, Kewpiedoll_43, Kwobi_44, Lennon_43, LilHam_41, Love_47, McKinley_45, MoontowerMania_43, Nordenberg_38, Paries_46, Ribeye_44, Rofo_44, Sanjuju_42, Shivanishola_43, Sitar_43, StorminNorm_43, Stultus_42, Tangent_44, Tangerine_43, Thing3_41, Vivi2_46, YorkOnyx_44,

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

- Derg_41, Geodirt_42, Gustavo_43, Kroos_44, Saronaya_43, SchottB_42, Tycho_43,

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

- Frizzle_23, Fryberger_62, Ghobes_22, Guey18_68, Keelan_60, Lilbeanie_42, Ronaldo_65, Sapo_21, Volt_65, Ziko_65,

Summary by start number:

Start 7:

- Found in 47 of 57 (82.5%) of genes in pham
- Manual Annotations of this start: 2 of 48
- Called 12.8% of time when present
- Phage (with cluster) where this start called: Derg_41 (DE1), Gustavo_43 (DE1), Kroos_44 (DE1), Saronaya_43 (DE1), SchottB_42 (DE1), Tycho_43 (DE1),

Start 8:

- Found in 47 of 57 (82.5%) of genes in pham
- Manual Annotations of this start: 36 of 48
- Called 85.1% of time when present
- Phage (with cluster) where this start called: Affeca_41 (DE1), Angelicage_41 (DE1), Ashertheman_44 (DE1), Baddon_43 (DE1), Barsten_44 (DE1), Baumdotcom_42 (DE1), Bizzy_44 (DE1), BobBob_41 (DE1), Brandonk123_45 (DE1), ChadMasterC_44 (DE1), Charming_44 (DE1), Fitzgerald_42 (DE1), Flatwoods_44 (DE1), Fosterous_41 (DE1), Gaea_43 (DE1), Galadriel_43 (DE1), JKSyngboy_41 (DE1), Jabberwocky_42 (DE1), Kamashten_41 (DE1), Kewpiedoll_43 (DE1), Kwobi_44 (DE1), Lennon_43 (DE1), LilHam_41 (DE1), Love_47 (DE1), McKinley_45 (DE1), MoontowerMania_43 (DE1), Nordenberg_38 (DE1), Paries_46 (DE1), Ribeye_44 (DE1), Rofo_44 (DE1), Sanjuju_42 (DE1), Shivanishola_43 (DE1), Sitar_43 (DE1), StorminNorm_43 (DE1), Stultus_42 (DE1), Tangent_44 (DE1), Tangerine_43 (DE1), Thing3_41 (DE1), Vivi2_46 (DE1), YorkOnyx_44 (DE1),

Start 9:

- Found in 6 of 57 (10.5%) of genes in pham
- Manual Annotations of this start: 6 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Fryberger_62 (DP), Guey18_68 (DP), Keelan_60 (DP), Ronaldo_65 (DP), Volt_65 (DP), Ziko_65 (DP),

Start 10:

- Found in 3 of 57 (5.3%) of genes in pham
- Manual Annotations of this start: 2 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Frizzle_23 (DA), Ghobes_22 (DA), Sapo_21 (DA),

Start 12:

- Found in 1 of 57 (1.8%) of genes in pham
- Manual Annotations of this start: 1 of 48
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilbeanie_42 (DE5),

Start 16:

- Found in 54 of 57 (94.7%) of genes in pham
- Manual Annotations of this start: 1 of 48
- Called 1.9% of time when present
- Phage (with cluster) where this start called: Geodirt_42 (DE1),

Summary by clusters:

There are 4 clusters represented in this pham: DE1, DE5, DP, DA,

Info for manual annotations of cluster DA:

- Start number 10 was manually annotated 2 times for cluster DA.

Info for manual annotations of cluster DE1:

- Start number 7 was manually annotated 2 times for cluster DE1.
- Start number 8 was manually annotated 36 times for cluster DE1.
- Start number 16 was manually annotated 1 time for cluster DE1.

Info for manual annotations of cluster DE5:

- Start number 12 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DP:

- Start number 9 was manually annotated 6 times for cluster DP.

Gene Information:

Gene: Affeca_41 Start: 38338, Stop: 39018, Start Num: 8

Candidate Starts for Affeca_41:

(Start: 7 @38296 has 2 MA's), (Start: 8 @38338 has 36 MA's), (Start: 16 @38383 has 1 MA's), (21, 38419), (24, 38437), (26, 38449), (32, 38536), (36, 38566), (41, 38593), (47, 38668), (49, 38680), (51, 38704), (56, 38734), (62, 38764), (65, 38794), (66, 38803), (70, 38833), (72, 38860), (74, 38896), (78, 38920),

Gene: Angelicage_41 Start: 38756, Stop: 39436, Start Num: 8

Candidate Starts for Angelicage_41:

(Start: 7 @38714 has 2 MA's), (Start: 8 @38756 has 36 MA's), (Start: 16 @38801 has 1 MA's), (21, 38837), (24, 38855), (26, 38867), (32, 38954), (36, 38984), (41, 39011), (47, 39086), (49, 39098), (51, 39122), (56, 39152), (62, 39182), (65, 39212), (66, 39221), (70, 39251), (72, 39278), (74, 39314), (78,

39338),

Gene: Ashertheman_44 Start: 38753, Stop: 39442, Start Num: 8

Candidate Starts for Ashertheman_44:

(3, 38450), (4, 38522), (Start: 7 @38711 has 2 MA's), (Start: 8 @38753 has 36 MA's), (Start: 16 @38798 has 1 MA's), (20, 38831), (21, 38834), (24, 38852), (26, 38864), (32, 38951), (40, 38999), (41, 39008), (44, 39026), (49, 39095), (56, 39149), (62, 39179), (72, 39275), (74, 39311), (78, 39335),

Gene: Baddon_43 Start: 39291, Stop: 39980, Start Num: 8

Candidate Starts for Baddon_43:

(3, 38988), (4, 39060), (Start: 7 @39249 has 2 MA's), (Start: 8 @39291 has 36 MA's), (Start: 16 @39336 has 1 MA's), (21, 39372), (24, 39390), (26, 39402), (32, 39489), (40, 39537), (41, 39546), (44, 39564), (49, 39633), (56, 39687), (62, 39717), (72, 39813), (74, 39849), (78, 39873),

Gene: Barsten_44 Start: 38908, Stop: 39591, Start Num: 8

Candidate Starts for Barsten_44:

(Start: 7 @38866 has 2 MA's), (Start: 8 @38908 has 36 MA's), (Start: 16 @38953 has 1 MA's), (21, 38989), (24, 39007), (26, 39019), (32, 39106), (36, 39136), (41, 39163), (47, 39238), (49, 39250), (51, 39274), (56, 39304), (62, 39334), (65, 39364), (66, 39373), (70, 39403), (72, 39430), (74, 39466), (78, 39490),

Gene: Baumdotcom_42 Start: 38142, Stop: 38831, Start Num: 8

Candidate Starts for Baumdotcom_42:

(3, 37839), (4, 37911), (Start: 7 @38100 has 2 MA's), (Start: 8 @38142 has 36 MA's), (Start: 16 @38187 has 1 MA's), (21, 38223), (24, 38241), (26, 38253), (32, 38340), (40, 38388), (41, 38397), (44, 38415), (49, 38484), (56, 38538), (62, 38568), (70, 38637), (72, 38664), (74, 38700), (78, 38724),

Gene: Bizzy_44 Start: 38448, Stop: 39137, Start Num: 8

Candidate Starts for Bizzy_44:

(3, 38145), (4, 38217), (Start: 7 @38406 has 2 MA's), (Start: 8 @38448 has 36 MA's), (Start: 16 @38493 has 1 MA's), (21, 38529), (24, 38547), (26, 38559), (32, 38646), (40, 38694), (41, 38703), (44, 38721), (49, 38790), (56, 38844), (62, 38874), (70, 38943), (72, 38970), (74, 39006), (78, 39030),

Gene: BobBob_41 Start: 38027, Stop: 38710, Start Num: 8

Candidate Starts for BobBob_41:

(6, 37922), (Start: 7 @37985 has 2 MA's), (Start: 8 @38027 has 36 MA's), (Start: 16 @38072 has 1 MA's), (21, 38108), (24, 38126), (26, 38138), (32, 38225), (36, 38255), (41, 38282), (44, 38300), (45, 38321), (47, 38357), (49, 38369), (51, 38393), (56, 38423), (62, 38453), (65, 38483), (66, 38492), (70, 38522), (72, 38549), (74, 38585), (78, 38609),

Gene: Brandonk123_45 Start: 39162, Stop: 39845, Start Num: 8

Candidate Starts for Brandonk123_45:

(6, 39057), (Start: 7 @39120 has 2 MA's), (Start: 8 @39162 has 36 MA's), (Start: 16 @39207 has 1 MA's), (21, 39243), (24, 39261), (26, 39273), (32, 39360), (36, 39390), (40, 39408), (41, 39417), (44, 39435), (45, 39456), (47, 39492), (49, 39504), (51, 39528), (56, 39558), (62, 39588), (65, 39618), (70, 39657), (72, 39684), (74, 39720), (78, 39744),

Gene: ChadMasterC_44 Start: 40307, Stop: 40990, Start Num: 8

Candidate Starts for ChadMasterC_44:

(Start: 7 @40265 has 2 MA's), (Start: 8 @40307 has 36 MA's), (Start: 16 @40352 has 1 MA's), (21, 40388), (24, 40406), (26, 40418), (32, 40505), (36, 40535), (41, 40562), (43, 40574), (47, 40637), (49, 40649), (51, 40673), (56, 40703), (62, 40733), (65, 40763), (66, 40772), (70, 40802), (72, 40829), (74, 40865), (78, 40889),

Gene: Charming_44 Start: 38663, Stop: 39346, Start Num: 8

Candidate Starts for Charming_44:

(6, 38558), (Start: 7 @38621 has 2 MA's), (Start: 8 @38663 has 36 MA's), (Start: 16 @38708 has 1 MA's), (21, 38744), (24, 38762), (26, 38774), (32, 38861), (36, 38891), (41, 38918), (44, 38936), (45, 38957), (47, 38993), (49, 39005), (51, 39029), (56, 39059), (62, 39089), (65, 39119), (66, 39128), (70, 39158), (72, 39185), (74, 39221), (78, 39245),

Gene: Derg_41 Start: 37998, Stop: 38729, Start Num: 7

Candidate Starts for Derg_41:

(3, 37737), (4, 37809), (Start: 7 @37998 has 2 MA's), (Start: 8 @38040 has 36 MA's), (Start: 16 @38085 has 1 MA's), (21, 38121), (24, 38139), (26, 38151), (32, 38238), (40, 38286), (41, 38295), (44, 38313), (49, 38382), (56, 38436), (62, 38466), (72, 38562), (74, 38598), (78, 38622),

Gene: Fitzgerald_42 Start: 39565, Stop: 40248, Start Num: 8

Candidate Starts for Fitzgerald_42:

(6, 39460), (Start: 7 @39523 has 2 MA's), (Start: 8 @39565 has 36 MA's), (Start: 16 @39610 has 1 MA's), (21, 39646), (24, 39664), (26, 39676), (32, 39763), (36, 39793), (38, 39802), (41, 39820), (44, 39838), (47, 39895), (49, 39907), (51, 39931), (56, 39961), (62, 39991), (65, 40021), (66, 40030), (70, 40060), (72, 40087), (74, 40123), (78, 40147),

Gene: Flatwoods_44 Start: 38392, Stop: 39081, Start Num: 8

Candidate Starts for Flatwoods_44:

(3, 38089), (4, 38161), (Start: 7 @38350 has 2 MA's), (Start: 8 @38392 has 36 MA's), (Start: 16 @38437 has 1 MA's), (21, 38473), (24, 38491), (26, 38503), (32, 38590), (40, 38638), (41, 38647), (44, 38665), (49, 38734), (56, 38788), (62, 38818), (70, 38887), (72, 38914), (74, 38950), (78, 38974),

Gene: Fosterous_41 Start: 38124, Stop: 38807, Start Num: 8

Candidate Starts for Fosterous_41:

(Start: 7 @38082 has 2 MA's), (Start: 8 @38124 has 36 MA's), (Start: 16 @38169 has 1 MA's), (21, 38205), (24, 38223), (26, 38235), (32, 38322), (36, 38352), (41, 38379), (47, 38454), (49, 38466), (51, 38490), (56, 38520), (62, 38550), (65, 38580), (66, 38589), (70, 38619), (72, 38646), (74, 38682), (78, 38706),

Gene: Frizzle_23 Start: 18925, Stop: 19572, Start Num: 10

Candidate Starts for Frizzle_23:

(Start: 10 @18925 has 2 MA's), (11, 18931), (Start: 16 @18967 has 1 MA's), (17, 18973), (19, 18988), (23, 19009), (30, 19087), (31, 19093), (33, 19129), (34, 19132), (35, 19138), (40, 19168), (41, 19177), (42, 19183), (48, 19261), (55, 19312), (60, 19342), (61, 19345), (63, 19360), (68, 19393), (77, 19501),

Gene: Fryberger_62 Start: 34972, Stop: 35487, Start Num: 9

Candidate Starts for Fryberger_62:

(Start: 9 @34972 has 6 MA's), (14, 35002), (Start: 16 @35014 has 1 MA's), (25, 35077), (31, 35143), (37, 35203), (40, 35218), (45, 35266), (58, 35377), (64, 35416), (69, 35455),

Gene: Gaea_43 Start: 38036, Stop: 38725, Start Num: 8

Candidate Starts for Gaea_43:

(3, 37733), (4, 37805), (Start: 7 @37994 has 2 MA's), (Start: 8 @38036 has 36 MA's), (Start: 16 @38081 has 1 MA's), (21, 38117), (24, 38135), (26, 38147), (32, 38234), (40, 38282), (41, 38291), (44, 38309), (49, 38378), (56, 38432), (62, 38462), (70, 38531), (72, 38558), (74, 38594), (78, 38618),

Gene: Galadriel_43 Start: 38931, Stop: 39614, Start Num: 8

Candidate Starts for Galadriel_43:

(6, 38826), (Start: 7 @38889 has 2 MA's), (Start: 8 @38931 has 36 MA's), (Start: 16 @38976 has 1 MA's), (21, 39012), (24, 39030), (26, 39042), (32, 39129), (36, 39159), (41, 39186), (44, 39204), (47, 39261), (49, 39273), (51, 39297), (56, 39327), (62, 39357), (65, 39387), (66, 39396), (70, 39426), (72, 39453), (74, 39489), (78, 39513),

Gene: Geodirt_42 Start: 39588, Stop: 40226, Start Num: 16

Candidate Starts for Geodirt_42:

(Start: 7 @39501 has 2 MA's), (Start: 8 @39543 has 36 MA's), (Start: 16 @39588 has 1 MA's), (21, 39624), (24, 39642), (26, 39654), (32, 39741), (36, 39771), (41, 39798), (47, 39873), (49, 39885), (51, 39909), (56, 39939), (62, 39969), (65, 39999), (66, 40008), (70, 40038), (72, 40065), (74, 40101), (78, 40125),

Gene: Ghobes_22 Start: 18925, Stop: 19572, Start Num: 10

Candidate Starts for Ghobes_22:

(Start: 10 @18925 has 2 MA's), (11, 18931), (Start: 16 @18967 has 1 MA's), (17, 18973), (19, 18988), (30, 19087), (31, 19093), (33, 19129), (34, 19132), (35, 19138), (40, 19168), (41, 19177), (42, 19183), (48, 19261), (55, 19312), (60, 19342), (61, 19345), (63, 19360), (68, 19393), (77, 19501),

Gene: Guey18_68 Start: 36492, Stop: 37007, Start Num: 9

Candidate Starts for Guey18_68:

(Start: 9 @36492 has 6 MA's), (14, 36522), (Start: 16 @36534 has 1 MA's), (25, 36597), (31, 36663), (37, 36723), (40, 36738), (45, 36786), (58, 36897), (64, 36936), (69, 36975),

Gene: Gustavo_43 Start: 38166, Stop: 38897, Start Num: 7

Candidate Starts for Gustavo_43:

(3, 37905), (4, 37977), (Start: 7 @38166 has 2 MA's), (Start: 8 @38208 has 36 MA's), (Start: 16 @38253 has 1 MA's), (21, 38289), (24, 38307), (26, 38319), (32, 38406), (40, 38454), (41, 38463), (44, 38481), (49, 38550), (56, 38604), (62, 38634), (72, 38730), (74, 38766), (78, 38790),

Gene: JKSyngboy_41 Start: 38807, Stop: 39496, Start Num: 8

Candidate Starts for JKSyngboy_41:

(2, 38282), (3, 38504), (4, 38576), (Start: 7 @38765 has 2 MA's), (Start: 8 @38807 has 36 MA's), (Start: 16 @38852 has 1 MA's), (20, 38885), (21, 38888), (24, 38906), (26, 38918), (32, 39005), (40, 39053), (41, 39062), (44, 39080), (49, 39149), (56, 39203), (61, 39230), (62, 39233), (70, 39302), (72, 39329), (74, 39365), (78, 39389),

Gene: Jabberwocky_42 Start: 39969, Stop: 40652, Start Num: 8

Candidate Starts for Jabberwocky_42:

(Start: 7 @39927 has 2 MA's), (Start: 8 @39969 has 36 MA's), (Start: 16 @40014 has 1 MA's), (21, 40050), (24, 40068), (26, 40080), (32, 40167), (36, 40197), (41, 40224), (47, 40299), (49, 40311), (51, 40335), (56, 40365), (62, 40395), (65, 40425), (66, 40434), (70, 40464), (72, 40491), (74, 40527), (78, 40551),

Gene: Kamashten_41 Start: 37904, Stop: 38587, Start Num: 8

Candidate Starts for Kamashten_41:

(Start: 7 @37862 has 2 MA's), (Start: 8 @37904 has 36 MA's), (Start: 16 @37949 has 1 MA's), (21, 37985), (24, 38003), (26, 38015), (32, 38102), (36, 38132), (41, 38159), (47, 38234), (49, 38246), (51, 38270), (56, 38300), (62, 38330), (65, 38360), (66, 38369), (70, 38399), (72, 38426), (74, 38462), (78, 38486),

Gene: Keelan_60 Start: 35211, Stop: 35726, Start Num: 9

Candidate Starts for Keelan_60:

(Start: 9 @35211 has 6 MA's), (14, 35241), (17, 35259), (18, 35271), (22, 35292), (33, 35418), (39, 35451), (40, 35457), (45, 35505), (46, 35535), (50, 35565), (57, 35604), (64, 35655),

Gene: Kewpiedoll_43 Start: 38845, Stop: 39528, Start Num: 8

Candidate Starts for Kewpiedoll_43:

(Start: 7 @38803 has 2 MA's), (Start: 8 @38845 has 36 MA's), (Start: 16 @38890 has 1 MA's), (21, 38926), (24, 38944), (26, 38956), (32, 39043), (36, 39073), (41, 39100), (47, 39175), (49, 39187), (51, 39211), (56, 39241), (62, 39271), (65, 39301), (66, 39310), (70, 39340), (72, 39367), (74, 39403), (78, 39427),

Gene: Kroos_44 Start: 38906, Stop: 39637, Start Num: 7

Candidate Starts for Kroos_44:

(3, 38645), (4, 38717), (Start: 7 @38906 has 2 MA's), (Start: 8 @38948 has 36 MA's), (Start: 16 @38993 has 1 MA's), (20, 39026), (21, 39029), (24, 39047), (26, 39059), (32, 39146), (41, 39203), (44, 39221), (49, 39290), (56, 39344), (62, 39374), (70, 39443), (72, 39470), (74, 39506), (78, 39530),

Gene: Kwobi_44 Start: 38934, Stop: 39623, Start Num: 8

Candidate Starts for Kwobi_44:

(3, 38631), (4, 38703), (Start: 7 @38892 has 2 MA's), (Start: 8 @38934 has 36 MA's), (Start: 16 @38979 has 1 MA's), (21, 39015), (24, 39033), (26, 39045), (32, 39132), (40, 39180), (41, 39189), (44, 39207), (49, 39276), (56, 39330), (62, 39360), (72, 39456), (74, 39492), (78, 39516),

Gene: Lennon_43 Start: 39651, Stop: 40331, Start Num: 8

Candidate Starts for Lennon_43:

(Start: 7 @39609 has 2 MA's), (Start: 8 @39651 has 36 MA's), (Start: 16 @39696 has 1 MA's), (21, 39732), (24, 39750), (26, 39762), (32, 39849), (36, 39879), (41, 39906), (47, 39981), (49, 39993), (51, 40017), (56, 40047), (62, 40077), (65, 40107), (66, 40116), (70, 40146), (72, 40173), (74, 40209), (78, 40233),

Gene: LilHam_41 Start: 37535, Stop: 38224, Start Num: 8

Candidate Starts for LilHam_41:

(3, 37232), (4, 37304), (Start: 7 @37493 has 2 MA's), (Start: 8 @37535 has 36 MA's), (Start: 16 @37580 has 1 MA's), (21, 37616), (24, 37634), (26, 37646), (32, 37733), (40, 37781), (41, 37790), (44, 37808), (49, 37877), (56, 37931), (62, 37961), (70, 38030), (72, 38057), (74, 38093), (78, 38117),

Gene: Lilbeanie_42 Start: 34007, Stop: 34681, Start Num: 12

Candidate Starts for Lilbeanie_42:

(1, 33386), (3, 33686), (5, 33776), (Start: 12 @34007 has 1 MA's), (13, 34019), (15, 34040), (19, 34064), (22, 34082), (26, 34109), (27, 34112), (28, 34133), (40, 34244), (53, 34373), (55, 34388), (56, 34394), (62, 34424), (63, 34436), (65, 34454), (66, 34463), (71, 34496), (72, 34520), (74, 34556), (77, 34577), (78, 34580),

Gene: Love_47 Start: 40096, Stop: 40779, Start Num: 8

Candidate Starts for Love_47:

(6, 39991), (Start: 7 @40054 has 2 MA's), (Start: 8 @40096 has 36 MA's), (Start: 16 @40141 has 1 MA's), (21, 40177), (24, 40195), (26, 40207), (32, 40294), (36, 40324), (38, 40333), (41, 40351), (47, 40426), (49, 40438), (51, 40462), (56, 40492), (62, 40522), (65, 40552), (66, 40561), (70, 40591), (72, 40618), (74, 40654), (78, 40678),

Gene: McKinley_45 Start: 39469, Stop: 40152, Start Num: 8

Candidate Starts for McKinley_45:

(6, 39364), (Start: 7 @39427 has 2 MA's), (Start: 8 @39469 has 36 MA's), (Start: 16 @39514 has 1 MA's), (21, 39550), (24, 39568), (26, 39580), (32, 39667), (36, 39697), (38, 39706), (41, 39724), (44,

39742), (47, 39799), (49, 39811), (51, 39835), (56, 39865), (62, 39895), (65, 39925), (66, 39934), (70, 39964), (72, 39991), (74, 40027), (78, 40051),

Gene: MoontowerMania_43 Start: 39304, Stop: 39987, Start Num: 8

Candidate Starts for MoontowerMania_43:

(Start: 7 @39262 has 2 MA's), (Start: 8 @39304 has 36 MA's), (Start: 16 @39349 has 1 MA's), (21, 39385), (24, 39403), (26, 39415), (32, 39502), (36, 39532), (41, 39559), (44, 39577), (47, 39634), (49, 39646), (51, 39670), (56, 39700), (62, 39730), (65, 39760), (66, 39769), (70, 39799), (72, 39826), (74, 39862), (78, 39886),

Gene: Nordenberg_38 Start: 38289, Stop: 38972, Start Num: 8

Candidate Starts for Nordenberg_38:

(6, 38184), (Start: 7 @38247 has 2 MA's), (Start: 8 @38289 has 36 MA's), (Start: 16 @38334 has 1 MA's), (21, 38370), (24, 38388), (26, 38400), (32, 38487), (36, 38517), (38, 38526), (40, 38535), (41, 38544), (44, 38562), (45, 38583), (47, 38619), (49, 38631), (51, 38655), (56, 38685), (62, 38715), (65, 38745), (70, 38784), (72, 38811), (74, 38847), (78, 38871),

Gene: Paries_46 Start: 39758, Stop: 40441, Start Num: 8

Candidate Starts for Paries_46:

(6, 39653), (Start: 7 @39716 has 2 MA's), (Start: 8 @39758 has 36 MA's), (Start: 16 @39803 has 1 MA's), (21, 39839), (24, 39857), (26, 39869), (32, 39956), (36, 39986), (38, 39995), (41, 40013), (45, 40052), (47, 40088), (49, 40100), (51, 40124), (56, 40154), (62, 40184), (65, 40214), (66, 40223), (70, 40253), (72, 40280), (74, 40316), (78, 40340),

Gene: Ribeye_44 Start: 39366, Stop: 40055, Start Num: 8

Candidate Starts for Ribeye_44:

(3, 39063), (4, 39135), (Start: 7 @39324 has 2 MA's), (Start: 8 @39366 has 36 MA's), (Start: 16 @39411 has 1 MA's), (21, 39447), (24, 39465), (26, 39477), (32, 39564), (40, 39612), (41, 39621), (44, 39639), (49, 39708), (56, 39762), (62, 39792), (72, 39888), (74, 39924), (78, 39948),

Gene: Rofo_44 Start: 39084, Stop: 39767, Start Num: 8

Candidate Starts for Rofo_44:

(6, 38979), (Start: 7 @39042 has 2 MA's), (Start: 8 @39084 has 36 MA's), (Start: 16 @39129 has 1 MA's), (21, 39165), (24, 39183), (26, 39195), (32, 39282), (36, 39312), (40, 39330), (41, 39339), (44, 39357), (45, 39378), (47, 39414), (49, 39426), (51, 39450), (56, 39480), (62, 39510), (65, 39540), (70, 39579), (72, 39606), (74, 39642), (78, 39666),

Gene: Ronaldo_65 Start: 35871, Stop: 36386, Start Num: 9

Candidate Starts for Ronaldo_65:

(Start: 9 @35871 has 6 MA's), (14, 35901), (Start: 16 @35913 has 1 MA's), (25, 35976), (31, 36042), (37, 36102), (40, 36117), (45, 36165), (58, 36276), (64, 36315), (69, 36354),

Gene: Sanjuju_42 Start: 39698, Stop: 40381, Start Num: 8

Candidate Starts for Sanjuju_42:

(6, 39593), (Start: 7 @39656 has 2 MA's), (Start: 8 @39698 has 36 MA's), (Start: 16 @39743 has 1 MA's), (21, 39779), (24, 39797), (26, 39809), (32, 39896), (36, 39926), (38, 39935), (41, 39953), (44, 39971), (47, 40028), (49, 40040), (51, 40064), (56, 40094), (62, 40124), (65, 40154), (66, 40163), (70, 40193), (72, 40220), (74, 40256), (78, 40280),

Gene: Sapo_21 Start: 18878, Stop: 19525, Start Num: 10

Candidate Starts for Sapo_21:

(Start: 10 @18878 has 2 MA's), (11, 18884), (27, 18989), (29, 19031), (40, 19121), (41, 19130), (51, 19241), (52, 19244), (54, 19259), (59, 19286), (61, 19298), (67, 19343), (73, 19427), (75, 19436), (76,

19442), (78, 19457),

Gene: Saronaya_43 Start: 38166, Stop: 38897, Start Num: 7

Candidate Starts for Saronaya_43:

(3, 37905), (4, 37977), (Start: 7 @38166 has 2 MA's), (Start: 8 @38208 has 36 MA's), (Start: 16 @38253 has 1 MA's), (21, 38289), (24, 38307), (26, 38319), (32, 38406), (40, 38454), (41, 38463), (44, 38481), (49, 38550), (56, 38604), (62, 38634), (72, 38730), (74, 38766), (78, 38790),

Gene: SchottB_42 Start: 39166, Stop: 39897, Start Num: 7

Candidate Starts for SchottB_42:

(3, 38905), (4, 38977), (Start: 7 @39166 has 2 MA's), (Start: 8 @39208 has 36 MA's), (Start: 16 @39253 has 1 MA's), (21, 39289), (24, 39307), (26, 39319), (32, 39406), (40, 39454), (41, 39463), (44, 39481), (49, 39550), (56, 39604), (62, 39634), (70, 39703), (72, 39730), (74, 39766), (78, 39790),

Gene: Shivanishola_43 Start: 37965, Stop: 38648, Start Num: 8

Candidate Starts for Shivanishola_43:

(Start: 7 @37923 has 2 MA's), (Start: 8 @37965 has 36 MA's), (Start: 16 @38010 has 1 MA's), (21, 38046), (24, 38064), (26, 38076), (32, 38163), (36, 38193), (41, 38220), (47, 38295), (49, 38307), (51, 38331), (56, 38361), (62, 38391), (65, 38421), (66, 38430), (70, 38460), (72, 38487), (74, 38523), (78, 38547),

Gene: Sitar_43 Start: 39651, Stop: 40331, Start Num: 8

Candidate Starts for Sitar_43:

(Start: 7 @39609 has 2 MA's), (Start: 8 @39651 has 36 MA's), (Start: 16 @39696 has 1 MA's), (21, 39732), (24, 39750), (26, 39762), (32, 39849), (36, 39879), (41, 39906), (47, 39981), (49, 39993), (51, 40017), (56, 40047), (62, 40077), (65, 40107), (66, 40116), (70, 40146), (72, 40173), (74, 40209), (78, 40233),

Gene: StorminNorm_43 Start: 38299, Stop: 38988, Start Num: 8

Candidate Starts for StorminNorm_43:

(3, 37996), (4, 38068), (Start: 7 @38257 has 2 MA's), (Start: 8 @38299 has 36 MA's), (Start: 16 @38344 has 1 MA's), (20, 38377), (21, 38380), (24, 38398), (26, 38410), (32, 38497), (41, 38554), (44, 38572), (49, 38641), (55, 38689), (56, 38695), (62, 38725), (70, 38794), (72, 38821), (74, 38857), (78, 38881),

Gene: Stultus_42 Start: 38601, Stop: 39284, Start Num: 8

Candidate Starts for Stultus_42:

(Start: 7 @38559 has 2 MA's), (Start: 8 @38601 has 36 MA's), (Start: 16 @38646 has 1 MA's), (21, 38682), (24, 38700), (26, 38712), (32, 38799), (36, 38829), (41, 38856), (47, 38931), (49, 38943), (51, 38967), (56, 38997), (62, 39027), (65, 39057), (66, 39066), (70, 39096), (72, 39123), (74, 39159), (78, 39183),

Gene: Tangent_44 Start: 38675, Stop: 39358, Start Num: 8

Candidate Starts for Tangent_44:

(6, 38570), (Start: 7 @38633 has 2 MA's), (Start: 8 @38675 has 36 MA's), (Start: 16 @38720 has 1 MA's), (21, 38756), (24, 38774), (26, 38786), (32, 38873), (36, 38903), (41, 38930), (44, 38948), (45, 38969), (47, 39005), (49, 39017), (51, 39041), (56, 39071), (62, 39101), (65, 39131), (66, 39140), (70, 39170), (72, 39197), (74, 39233), (78, 39257),

Gene: Tangerine_43 Start: 38080, Stop: 38769, Start Num: 8

Candidate Starts for Tangerine_43:

(3, 37777), (4, 37849), (Start: 7 @38038 has 2 MA's), (Start: 8 @38080 has 36 MA's), (Start: 16 @38125 has 1 MA's), (21, 38161), (24, 38179), (26, 38191), (32, 38278), (40, 38326), (41, 38335),

(44, 38353), (49, 38422), (55, 38470), (56, 38476), (62, 38506), (72, 38602), (74, 38638), (78, 38662),

Gene: Thing3_41 Start: 37904, Stop: 38587, Start Num: 8

Candidate Starts for Thing3_41:

(Start: 7 @37862 has 2 MA's), (Start: 8 @37904 has 36 MA's), (Start: 16 @37949 has 1 MA's), (21, 37985), (24, 38003), (26, 38015), (32, 38102), (36, 38132), (41, 38159), (47, 38234), (49, 38246), (51, 38270), (56, 38300), (62, 38330), (65, 38360), (66, 38369), (70, 38399), (72, 38426), (74, 38462), (78, 38486),

Gene: Tycho_43 Start: 38125, Stop: 38856, Start Num: 7

Candidate Starts for Tycho_43:

(3, 37864), (4, 37936), (Start: 7 @38125 has 2 MA's), (Start: 8 @38167 has 36 MA's), (Start: 16 @38212 has 1 MA's), (20, 38245), (21, 38248), (24, 38266), (26, 38278), (32, 38365), (41, 38422), (44, 38440), (49, 38509), (55, 38557), (56, 38563), (62, 38593), (70, 38662), (72, 38689), (74, 38725), (78, 38749),

Gene: Vivi2_46 Start: 39701, Stop: 40384, Start Num: 8

Candidate Starts for Vivi2_46:

(6, 39596), (Start: 7 @39659 has 2 MA's), (Start: 8 @39701 has 36 MA's), (Start: 16 @39746 has 1 MA's), (21, 39782), (24, 39800), (26, 39812), (32, 39899), (36, 39929), (38, 39938), (41, 39956), (44, 39974), (47, 40031), (49, 40043), (51, 40067), (56, 40097), (62, 40127), (65, 40157), (66, 40166), (70, 40196), (72, 40223), (74, 40259), (78, 40283),

Gene: Volt_65 Start: 36035, Stop: 36550, Start Num: 9

Candidate Starts for Volt_65:

(Start: 9 @36035 has 6 MA's), (14, 36065), (Start: 16 @36077 has 1 MA's), (25, 36140), (31, 36206), (37, 36266), (40, 36281), (45, 36329), (58, 36440), (64, 36479), (69, 36518),

Gene: YorkOnyx_44 Start: 38424, Stop: 39113, Start Num: 8

Candidate Starts for YorkOnyx_44:

(3, 38121), (4, 38193), (Start: 7 @38382 has 2 MA's), (Start: 8 @38424 has 36 MA's), (Start: 16 @38469 has 1 MA's), (21, 38505), (24, 38523), (26, 38535), (32, 38622), (40, 38670), (41, 38679), (44, 38697), (49, 38766), (55, 38814), (56, 38820), (62, 38850), (72, 38946), (74, 38982), (78, 39006),

Gene: Ziko_65 Start: 35857, Stop: 36372, Start Num: 9

Candidate Starts for Ziko_65:

(Start: 9 @35857 has 6 MA's), (14, 35887), (Start: 16 @35899 has 1 MA's), (25, 35962), (31, 36028), (37, 36088), (40, 36103), (45, 36151), (58, 36262), (64, 36301), (69, 36340),