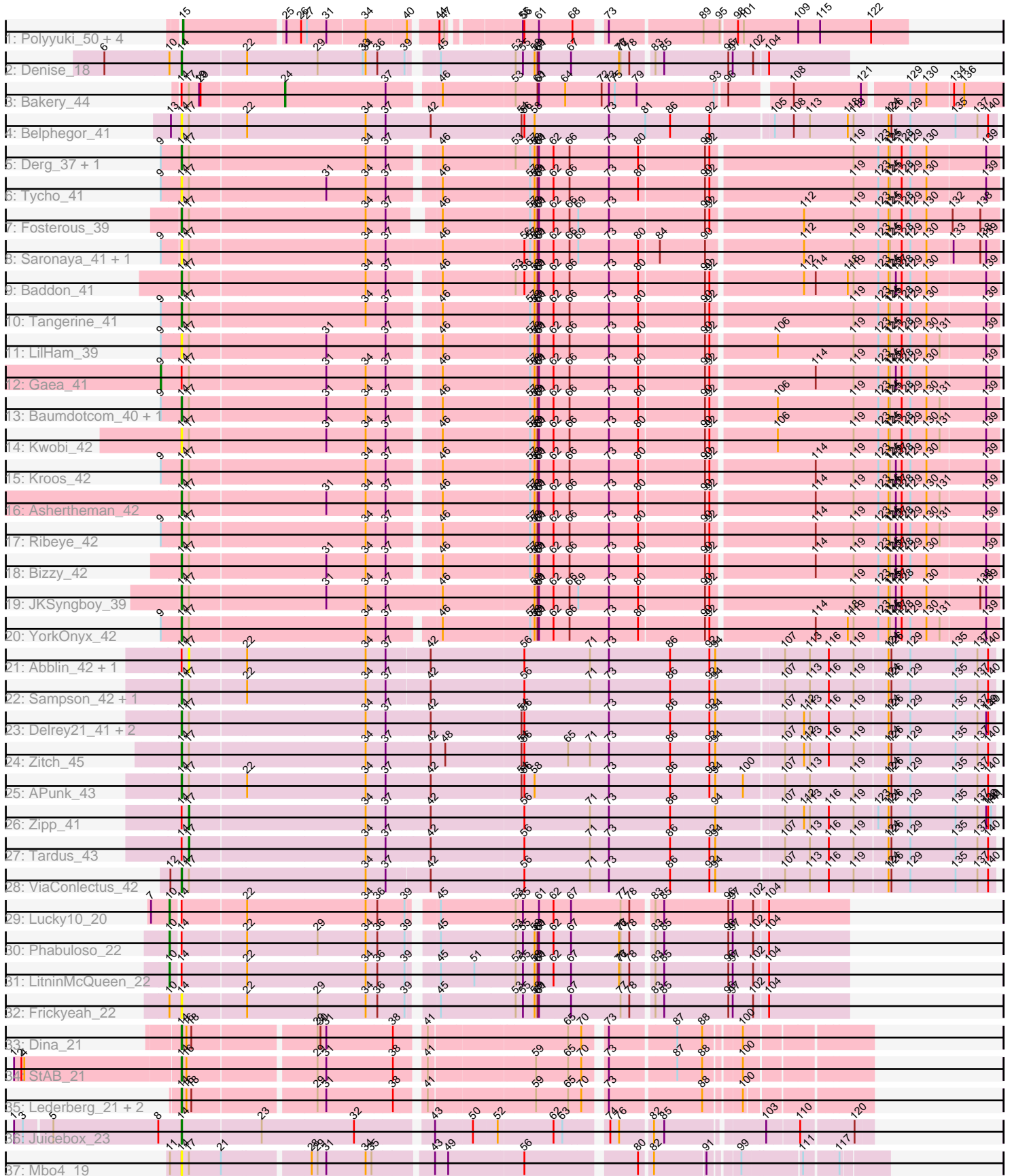


Pham 216251



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 216251 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216251 has 50 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Polyuyuki_50, Apiary_50, CoffeeBean_50, Braxoaddie_50, Maselop_50
- Track 2 : Denise_18
- Track 3 : Bakery_44
- Track 4 : Belphegor_41
- Track 5 : Derg_37, Flatwoods_42
- Track 6 : Tycho_41
- Track 7 : Fosterous_39
- Track 8 : Saronaya_41, Gustavo_41
- Track 9 : Baddon_41
- Track 10 : Tangerine_41
- Track 11 : LilHam_39
- Track 12 : Gaea_41
- Track 13 : Baumdotcom_40, SchottB_40
- Track 14 : Kwobi_42
- Track 15 : Kroos_42
- Track 16 : Ashertheman_42
- Track 17 : Ribeye_42
- Track 18 : Bizzy_42
- Track 19 : JKSyngboy_39
- Track 20 : YorkOnyx_42
- Track 21 : Abblin_42, Natkenzie_42
- Track 22 : Sampson_42, Scioto_43
- Track 23 : Delrey21_41, Verity_41, DoctorFroggo_41
- Track 24 : Zitch_45
- Track 25 : APunk_43
- Track 26 : Zipp_41
- Track 27 : Tardus_43
- Track 28 : ViaConlectus_42
- Track 29 : Lucky10_20
- Track 30 : Phabuloso_22
- Track 31 : LitninMcQueen_22
- Track 32 : Frickyeah_22
- Track 33 : Dina_21
- Track 34 : StAB_21
- Track 35 : Lederberg_21, Troy_21, SamW_21
- Track 36 : Juicebox_23
- Track 37 : Mbo4_19

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

The start number called the most often in the published annotations is 14, it was called in 26 of the 38 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- APunk_43, Ashertheman_42, Baddon_41, Baumdotcom_40, Belphegor_41, Bizzy_42, Delrey21_41, Denise_18, Derg_37, Dina_21, DoctorFroggo_41, Flatwoods_42, Fosterous_39, Frickyeah_22, Gustavo_41, JKSyngboy_39, Juicebox_23, Kroos_42, Kwobi_42, Lederberg_21, LilHam_39, Mbo4_19, Ribeye_42, SamW_21, Sampson_42, Saronaya_41, SchottB_40, Scioto_43, StAB_21, Tangerine_41, Troy_21, Tycho_41, Verity_41, ViaConlectus_42, YorkOnyx_42, Zitch_45,

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

- Abblin_42, Bakery_44, Gaea_41, LitninMcQueen_22, Lucky10_20, Natkenzie_42, Phabuloso_22, Tardus_43, Zipp_41,

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

- Apiary_50, Braxoaddie_50, CoffeeBean_50, Maselop_50, Polyuyuki_50,

Summary by start number:

Start 9:

- Found in 13 of 50 (26.0%) of genes in pham
- Manual Annotations of this start: 1 of 38
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Gaea_41 (DE1),

Start 10:

- Found in 5 of 50 (10.0%) of genes in pham
- Manual Annotations of this start: 3 of 38
- Called 60.0% of time when present
- Phage (with cluster) where this start called: LitninMcQueen_22 (DN1), Lucky10_20 (DH), Phabuloso_22 (DN1),

Start 14:

- Found in 45 of 50 (90.0%) of genes in pham
- Manual Annotations of this start: 26 of 38
- Called 80.0% of time when present
- Phage (with cluster) where this start called: APunk_43 (DE4), Ashertheman_42 (DE1), Baddon_41 (DE1), Baumdotcom_40 (DE1), Belphegor_41 (DE), Bizzy_42 (DE1), Delrey21_41 (DE4), Denise_18 (CZ5), Derg_37 (DE1), Dina_21 (EP), DoctorFroggo_41 (DE4), Flatwoods_42 (DE1), Fosterous_39 (DE1), Frickyeah_22 (DN1), Gustavo_41 (DE1), JKSyngboy_39 (DE1), Juicebox_23 (singleton), Kroos_42 (DE1), Kwobi_42 (DE1), Lederberg_21 (EP), LilHam_39 (DE1), Mbo4_19 (singleton), Ribeye_42 (DE1), SamW_21 (EP), Sampson_42 (DE4), Saronaya_41 (DE1), SchottB_40 (DE1), Scioto_43 (DE4), StAB_21 (EP), Tangerine_41 (DE1), Troy_21 (EP), Tycho_41 (DE1), Verity_41 (DE4), ViaConlectus_42 (DE4), YorkOnyx_42

(DE1), Zitch_45 (DE4),

Start 15:

- Found in 5 of 50 (10.0%) of genes in pham
- Manual Annotations of this start: 5 of 38
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apiary_50 (CR), Braxoaddie_50 (CR), CoffeeBean_50 (CR), Maselop_50 (CR), Polyuyuki_50 (CR),

Start 17:

- Found in 34 of 50 (68.0%) of genes in pham
- Manual Annotations of this start: 2 of 38
- Called 11.8% of time when present
- Phage (with cluster) where this start called: Abblin_42 (DE4), Natkenzie_42 (DE4), Tardus_43 (DE4), Zipp_41 (DE4),

Start 24:

- Found in 1 of 50 (2.0%) of genes in pham
- Manual Annotations of this start: 1 of 38
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bakery_44 (DC1),

Summary by clusters:

There are 10 clusters represented in this pham: singleton, DH, DE1, DE, DE4, CZ5, DN1, CR, EP, DC1,

Info for manual annotations of cluster CR:

- Start number 15 was manually annotated 5 times for cluster CR.

Info for manual annotations of cluster CZ5:

- Start number 14 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster DC1:

- Start number 24 was manually annotated 1 time for cluster DC1.

Info for manual annotations of cluster DE1:

- Start number 9 was manually annotated 1 time for cluster DE1.
- Start number 14 was manually annotated 12 times for cluster DE1.

Info for manual annotations of cluster DE4:

- Start number 14 was manually annotated 7 times for cluster DE4.
- Start number 17 was manually annotated 2 times for cluster DE4.

Info for manual annotations of cluster DH:

- Start number 10 was manually annotated 1 time for cluster DH.

Info for manual annotations of cluster DN1:

- Start number 10 was manually annotated 2 times for cluster DN1.

Info for manual annotations of cluster EP:

- Start number 14 was manually annotated 5 times for cluster EP.

Gene Information:

Gene: APunk_43 Start: 37152, Stop: 38765, Start Num: 14

Candidate Starts for APunk_43:

(Start: 14 @37152 has 26 MA's), (Start: 17 @37167 has 2 MA's), (22, 37275), (34, 37518), (37, 37557), (42, 37644), (54, 37827), (56, 37833), (58, 37851), (73, 38001), (86, 38127), (92, 38202), (94, 38214), (100, 38268), (107, 38343), (113, 38394), (119, 38484), (124, 38550), (126, 38556), (129, 38592), (135, 38685), (137, 38730), (140, 38751),

Gene: Abblin_42 Start: 37710, Stop: 39302, Start Num: 17

Candidate Starts for Abblin_42:

(Start: 14 @37695 has 26 MA's), (Start: 17 @37710 has 2 MA's), (22, 37818), (34, 38061), (37, 38100), (42, 38181), (56, 38370), (71, 38499), (73, 38538), (86, 38664), (92, 38739), (94, 38751), (107, 38880), (113, 38931), (116, 38970), (119, 39021), (124, 39087), (126, 39093), (129, 39129), (135, 39222), (137, 39267), (140, 39288),

Gene: Apiary_50 Start: 35704, Stop: 37047, Start Num: 15

Candidate Starts for Apiary_50:

(Start: 15 @35704 has 5 MA's), (25, 35902), (26, 35932), (27, 35944), (31, 35983), (34, 36055), (40, 36133), (44, 36175), (47, 36184), (55, 36307), (56, 36310), (61, 36340), (68, 36409), (73, 36457), (89, 36640), (95, 36673), (98, 36703), (101, 36715), (109, 36823), (115, 36868), (122, 36973),

Gene: Ashertheman_42 Start: 36687, Stop: 38270, Start Num: 14

Candidate Starts for Ashertheman_42:

(Start: 14 @36687 has 26 MA's), (Start: 17 @36702 has 2 MA's), (31, 36972), (34, 37053), (37, 37092), (46, 37176), (57, 37347), (58, 37356), (60, 37362), (61, 37365), (62, 37395), (66, 37425), (73, 37506), (80, 37566), (90, 37692), (92, 37701), (114, 37905), (119, 37983), (123, 38031), (124, 38052), (125, 38055), (127, 38067), (128, 38079), (129, 38094), (130, 38127), (131, 38154), (139, 38244),

Gene: Baddon_41 Start: 37222, Stop: 38805, Start Num: 14

Candidate Starts for Baddon_41:

(Start: 14 @37222 has 26 MA's), (Start: 17 @37237 has 2 MA's), (34, 37588), (37, 37627), (46, 37711), (53, 37855), (56, 37873), (58, 37891), (60, 37897), (61, 37900), (62, 37930), (66, 37960), (73, 38041), (80, 38101), (90, 38227), (92, 38236), (112, 38416), (114, 38440), (118, 38506), (119, 38518), (123, 38566), (124, 38587), (125, 38590), (127, 38602), (128, 38614), (129, 38629), (130, 38662), (139, 38779),

Gene: Bakery_44 Start: 34687, Stop: 36054, Start Num: 24

Candidate Starts for Bakery_44:

(Start: 14 @34486 has 26 MA's), (Start: 17 @34501 has 2 MA's), (19, 34522), (20, 34525), (Start: 24 @34687 has 1 MA's), (37, 34891), (46, 34975), (53, 35119), (60, 35161), (61, 35164), (64, 35215), (72, 35290), (73, 35305), (75, 35317), (79, 35362), (93, 35515), (96, 35536), (108, 35647), (121, 35785), (129, 35869), (130, 35902), (134, 35953), (136, 35974),

Gene: Baumdotcom_40 Start: 36074, Stop: 37657, Start Num: 14

Candidate Starts for Baumdotcom_40:

(Start: 9 @36035 has 1 MA's), (Start: 14 @36074 has 26 MA's), (Start: 17 @36089 has 2 MA's), (31, 36359), (34, 36440), (37, 36479), (46, 36563), (57, 36734), (58, 36743), (60, 36749), (61, 36752), (62, 36782), (66, 36812), (73, 36893), (80, 36953), (90, 37079), (92, 37088), (106, 37214), (119, 37370), (123, 37418), (124, 37439), (125, 37442), (128, 37466), (129, 37481), (130, 37514), (131, 37541),

(139, 37631),

Gene: Belphegor_41 Start: 37453, Stop: 39072, Start Num: 14

Candidate Starts for Belphegor_41:

(13, 37432), (Start: 14 @37453 has 26 MA's), (Start: 17 @37468 has 2 MA's), (22, 37576), (34, 37819), (37, 37858), (42, 37948), (54, 38131), (56, 38137), (58, 38155), (73, 38305), (81, 38380), (86, 38431), (92, 38506), (105, 38626), (108, 38665), (113, 38698), (118, 38776), (119, 38788), (124, 38854), (126, 38860), (129, 38896), (135, 38989), (137, 39034), (140, 39055),

Gene: Bizzy_42 Start: 36382, Stop: 37965, Start Num: 14

Candidate Starts for Bizzy_42:

(Start: 14 @36382 has 26 MA's), (Start: 17 @36397 has 2 MA's), (31, 36667), (34, 36748), (37, 36787), (46, 36871), (57, 37042), (58, 37051), (60, 37057), (61, 37060), (62, 37090), (66, 37120), (73, 37201), (80, 37261), (90, 37387), (92, 37396), (114, 37600), (119, 37678), (123, 37726), (124, 37747), (125, 37750), (127, 37762), (128, 37774), (129, 37789), (130, 37822), (139, 37939),

Gene: Braxoaddie_50 Start: 35693, Stop: 37036, Start Num: 15

Candidate Starts for Braxoaddie_50:

(Start: 15 @35693 has 5 MA's), (25, 35891), (26, 35921), (27, 35933), (31, 35972), (34, 36044), (40, 36122), (44, 36164), (47, 36173), (55, 36296), (56, 36299), (61, 36329), (68, 36398), (73, 36446), (89, 36629), (95, 36662), (98, 36692), (101, 36704), (109, 36812), (115, 36857), (122, 36962),

Gene: CoffeeBean_50 Start: 35651, Stop: 36994, Start Num: 15

Candidate Starts for CoffeeBean_50:

(Start: 15 @35651 has 5 MA's), (25, 35849), (26, 35879), (27, 35891), (31, 35930), (34, 36002), (40, 36080), (44, 36122), (47, 36131), (55, 36254), (56, 36257), (61, 36287), (68, 36356), (73, 36404), (89, 36587), (95, 36620), (98, 36650), (101, 36662), (109, 36770), (115, 36815), (122, 36920),

Gene: Delrey21_41 Start: 37882, Stop: 39492, Start Num: 14

Candidate Starts for Delrey21_41:

(Start: 14 @37882 has 26 MA's), (Start: 17 @37897 has 2 MA's), (34, 38248), (37, 38287), (42, 38371), (54, 38554), (56, 38560), (73, 38728), (86, 38854), (92, 38929), (94, 38941), (107, 39070), (112, 39109), (113, 39121), (116, 39160), (119, 39211), (124, 39277), (126, 39283), (129, 39319), (135, 39412), (137, 39457), (139, 39475), (140, 39478),

Gene: Denise_18 Start: 16581, Stop: 17858, Start Num: 14

Candidate Starts for Denise_18:

(6, 16434), (Start: 10 @16566 has 3 MA's), (Start: 14 @16581 has 26 MA's), (22, 16704), (29, 16848), (33, 16941), (34, 16947), (36, 16971), (39, 17022), (45, 17061), (53, 17211), (55, 17226), (58, 17247), (60, 17253), (61, 17256), (67, 17319), (76, 17418), (77, 17421), (78, 17439), (83, 17478), (85, 17496), (96, 17622), (97, 17631), (102, 17670), (104, 17697),

Gene: Derg_37 Start: 35972, Stop: 37555, Start Num: 14

Candidate Starts for Derg_37:

(Start: 9 @35933 has 1 MA's), (Start: 14 @35972 has 26 MA's), (Start: 17 @35987 has 2 MA's), (34, 36338), (37, 36377), (46, 36461), (53, 36605), (57, 36632), (58, 36641), (60, 36647), (61, 36650), (62, 36680), (66, 36710), (73, 36791), (80, 36851), (90, 36977), (92, 36986), (119, 37268), (123, 37316), (124, 37337), (125, 37340), (128, 37364), (129, 37379), (130, 37412), (139, 37529),

Gene: Dina_21 Start: 19817, Stop: 21049, Start Num: 14

Candidate Starts for Dina_21:

(Start: 14 @19817 has 26 MA's), (16, 19826), (18, 19832), (29, 20063), (30, 20069), (31, 20081), (38, 20210), (41, 20258), (65, 20522), (70, 20546), (73, 20579), (87, 20705), (88, 20756), (100, 20819),

Gene: DoctorFroggo_41 Start: 37882, Stop: 39492, Start Num: 14

Candidate Starts for DoctorFroggo_41:

(Start: 14 @37882 has 26 MA's), (Start: 17 @37897 has 2 MA's), (34, 38248), (37, 38287), (42, 38371), (54, 38554), (56, 38560), (73, 38728), (86, 38854), (92, 38929), (94, 38941), (107, 39070), (112, 39109), (113, 39121), (116, 39160), (119, 39211), (124, 39277), (126, 39283), (129, 39319), (135, 39412), (137, 39457), (139, 39475), (140, 39478),

Gene: Flatwoods_42 Start: 36324, Stop: 37907, Start Num: 14

Candidate Starts for Flatwoods_42:

(Start: 9 @36285 has 1 MA's), (Start: 14 @36324 has 26 MA's), (Start: 17 @36339 has 2 MA's), (34, 36690), (37, 36729), (46, 36813), (53, 36957), (57, 36984), (58, 36993), (60, 36999), (61, 37002), (62, 37032), (66, 37062), (73, 37143), (80, 37203), (90, 37329), (92, 37338), (119, 37620), (123, 37668), (124, 37689), (125, 37692), (128, 37716), (129, 37731), (130, 37764), (139, 37881),

Gene: Fosterous_39 Start: 36067, Stop: 37644, Start Num: 14

Candidate Starts for Fosterous_39:

(Start: 14 @36067 has 26 MA's), (Start: 17 @36082 has 2 MA's), (34, 36433), (37, 36472), (46, 36547), (57, 36718), (58, 36727), (60, 36733), (61, 36736), (62, 36766), (66, 36796), (69, 36814), (73, 36877), (90, 37063), (92, 37072), (112, 37252), (119, 37354), (123, 37405), (124, 37426), (125, 37429), (128, 37453), (129, 37468), (130, 37501), (132, 37552), (138, 37606),

Gene: Frickyeah_22 Start: 18680, Stop: 19957, Start Num: 14

Candidate Starts for Frickyeah_22:

(Start: 10 @18665 has 3 MA's), (Start: 14 @18680 has 26 MA's), (22, 18803), (29, 18947), (34, 19046), (36, 19070), (39, 19121), (45, 19160), (53, 19310), (55, 19325), (58, 19346), (60, 19352), (61, 19355), (67, 19418), (77, 19520), (78, 19538), (83, 19577), (85, 19595), (96, 19721), (97, 19730), (102, 19769), (104, 19796),

Gene: Gaea_41 Start: 35931, Stop: 37553, Start Num: 9

Candidate Starts for Gaea_41:

(Start: 9 @35931 has 1 MA's), (Start: 14 @35970 has 26 MA's), (Start: 17 @35985 has 2 MA's), (31, 36255), (34, 36336), (37, 36375), (46, 36459), (57, 36630), (58, 36639), (60, 36645), (61, 36648), (62, 36678), (66, 36708), (73, 36789), (80, 36849), (90, 36975), (92, 36984), (114, 37188), (119, 37266), (123, 37314), (124, 37335), (125, 37338), (127, 37350), (128, 37362), (129, 37377), (130, 37410), (139, 37527),

Gene: Gustavo_41 Start: 36119, Stop: 37723, Start Num: 14

Candidate Starts for Gustavo_41:

(Start: 9 @36083 has 1 MA's), (Start: 14 @36119 has 26 MA's), (Start: 17 @36134 has 2 MA's), (34, 36485), (37, 36524), (46, 36626), (56, 36788), (57, 36797), (58, 36806), (60, 36812), (61, 36815), (62, 36845), (66, 36875), (69, 36893), (73, 36956), (80, 37016), (84, 37055), (90, 37142), (112, 37331), (119, 37433), (123, 37484), (124, 37505), (125, 37508), (128, 37532), (129, 37547), (130, 37580), (133, 37631), (138, 37685), (139, 37697),

Gene: JKSyngboy_39 Start: 36715, Stop: 38322, Start Num: 14

Candidate Starts for JKSyngboy_39:

(Start: 14 @36715 has 26 MA's), (Start: 17 @36730 has 2 MA's), (31, 37000), (34, 37081), (37, 37120), (46, 37228), (58, 37408), (60, 37414), (61, 37417), (62, 37447), (66, 37477), (69, 37495), (73, 37558), (80, 37618), (90, 37744), (92, 37753), (119, 38035), (123, 38083), (124, 38104), (125, 38107), (127, 38119), (128, 38131), (130, 38179), (138, 38284), (139, 38296),

Gene: Juicebox_23 Start: 21279, Stop: 22559, Start Num: 14

Candidate Starts for Juicebox_23:

(1, 20949), (3, 20967), (5, 21021), (8, 21237), (Start: 14 @21279 has 26 MA's), (23, 21432), (32, 21621), (43, 21762), (50, 21837), (52, 21885), (62, 21996), (63, 22014), (74, 22086), (76, 22104), (82, 22164), (85, 22185), (103, 22365), (110, 22428), (120, 22524),

Gene: Kroos_42 Start: 36880, Stop: 38463, Start Num: 14

Candidate Starts for Kroos_42:

(Start: 9 @36841 has 1 MA's), (Start: 14 @36880 has 26 MA's), (Start: 17 @36895 has 2 MA's), (34, 37246), (37, 37285), (46, 37369), (57, 37540), (58, 37549), (60, 37555), (61, 37558), (62, 37588), (66, 37618), (73, 37699), (80, 37759), (90, 37885), (92, 37894), (114, 38098), (119, 38176), (123, 38224), (124, 38245), (125, 38248), (127, 38260), (128, 38272), (129, 38287), (130, 38320), (139, 38437),

Gene: Kwobi_42 Start: 36866, Stop: 38449, Start Num: 14

Candidate Starts for Kwobi_42:

(Start: 14 @36866 has 26 MA's), (Start: 17 @36881 has 2 MA's), (31, 37151), (34, 37232), (37, 37271), (46, 37355), (57, 37526), (58, 37535), (60, 37541), (61, 37544), (62, 37574), (66, 37604), (73, 37685), (80, 37745), (90, 37871), (92, 37880), (106, 38006), (119, 38162), (123, 38210), (124, 38231), (125, 38234), (128, 38258), (129, 38273), (130, 38306), (131, 38333), (139, 38423),

Gene: Lederberg_21 Start: 19839, Stop: 21065, Start Num: 14

Candidate Starts for Lederberg_21:

(Start: 14 @19839 has 26 MA's), (16, 19848), (18, 19854), (29, 20085), (31, 20103), (38, 20232), (41, 20280), (59, 20478), (65, 20544), (70, 20568), (73, 20601), (88, 20778), (100, 20841),

Gene: LilHam_39 Start: 35467, Stop: 37050, Start Num: 14

Candidate Starts for LilHam_39:

(Start: 9 @35428 has 1 MA's), (Start: 14 @35467 has 26 MA's), (Start: 17 @35482 has 2 MA's), (31, 35752), (37, 35872), (46, 35956), (57, 36127), (58, 36136), (60, 36142), (61, 36145), (62, 36175), (66, 36205), (73, 36286), (80, 36346), (90, 36472), (92, 36481), (106, 36607), (119, 36763), (123, 36811), (124, 36832), (125, 36835), (128, 36859), (129, 36874), (130, 36907), (131, 36934), (139, 37024),

Gene: LitninMcQueen_22 Start: 18659, Stop: 19951, Start Num: 10

Candidate Starts for LitninMcQueen_22:

(Start: 10 @18659 has 3 MA's), (Start: 14 @18674 has 26 MA's), (22, 18797), (34, 19040), (36, 19064), (39, 19115), (45, 19154), (51, 19220), (53, 19304), (55, 19319), (58, 19340), (60, 19346), (61, 19349), (62, 19379), (67, 19412), (76, 19511), (77, 19514), (78, 19532), (83, 19571), (85, 19589), (96, 19715), (97, 19724), (102, 19763), (104, 19790),

Gene: Lucky10_20 Start: 17297, Stop: 18589, Start Num: 10

Candidate Starts for Lucky10_20:

(7, 17261), (Start: 10 @17297 has 3 MA's), (Start: 14 @17312 has 26 MA's), (22, 17435), (34, 17678), (36, 17702), (39, 17753), (45, 17792), (53, 17942), (55, 17957), (61, 17987), (62, 18017), (67, 18050), (77, 18152), (78, 18170), (83, 18209), (85, 18227), (96, 18353), (97, 18362), (102, 18401), (104, 18428),

Gene: Maselop_50 Start: 35727, Stop: 37070, Start Num: 15

Candidate Starts for Maselop_50:

(Start: 15 @35727 has 5 MA's), (25, 35925), (26, 35955), (27, 35967), (31, 36006), (34, 36078), (40, 36156), (44, 36198), (47, 36207), (55, 36330), (56, 36333), (61, 36363), (68, 36432), (73, 36480), (89, 36663), (95, 36696), (98, 36726), (101, 36738), (109, 36846), (115, 36891), (122, 36996),

Gene: Mbo4_19 Start: 17568, Stop: 18866, Start Num: 14

Candidate Starts for Mbo4_19:

(11, 17553), (Start: 14 @17568 has 26 MA's), (Start: 17 @17583 has 2 MA's), (21, 17646), (28, 17814), (29, 17826), (31, 17844), (34, 17925), (35, 17937), (43, 18045), (49, 18072), (56, 18222), (80, 18429), (82, 18450), (91, 18552), (99, 18600), (111, 18711), (117, 18774),

Gene: Natkenzie_42 Start: 37710, Stop: 39302, Start Num: 17

Candidate Starts for Natkenzie_42:

(Start: 14 @37695 has 26 MA's), (Start: 17 @37710 has 2 MA's), (22, 37818), (34, 38061), (37, 38100), (42, 38181), (56, 38370), (71, 38499), (73, 38538), (86, 38664), (92, 38739), (94, 38751), (107, 38880), (113, 38931), (116, 38970), (119, 39021), (124, 39087), (126, 39093), (129, 39129), (135, 39222), (137, 39267), (140, 39288),

Gene: Phabuloso_22 Start: 18659, Stop: 19951, Start Num: 10

Candidate Starts for Phabuloso_22:

(Start: 10 @18659 has 3 MA's), (Start: 14 @18674 has 26 MA's), (22, 18797), (29, 18941), (34, 19040), (36, 19064), (39, 19115), (45, 19154), (53, 19304), (55, 19319), (58, 19340), (60, 19346), (61, 19349), (62, 19379), (67, 19412), (76, 19511), (77, 19514), (78, 19532), (83, 19571), (85, 19589), (96, 19715), (97, 19724), (102, 19763), (104, 19790),

Gene: Polyuyki_50 Start: 35716, Stop: 37059, Start Num: 15

Candidate Starts for Polyuyki_50:

(Start: 15 @35716 has 5 MA's), (25, 35914), (26, 35944), (27, 35956), (31, 35995), (34, 36067), (40, 36145), (44, 36187), (47, 36196), (55, 36319), (56, 36322), (61, 36352), (68, 36421), (73, 36469), (89, 36652), (95, 36685), (98, 36715), (101, 36727), (109, 36835), (115, 36880), (122, 36985),

Gene: Ribeye_42 Start: 37298, Stop: 38881, Start Num: 14

Candidate Starts for Ribeye_42:

(Start: 9 @37259 has 1 MA's), (Start: 14 @37298 has 26 MA's), (Start: 17 @37313 has 2 MA's), (34, 37664), (37, 37703), (46, 37787), (57, 37958), (58, 37967), (60, 37973), (61, 37976), (62, 38006), (66, 38036), (73, 38117), (80, 38177), (90, 38303), (92, 38312), (114, 38516), (119, 38594), (123, 38642), (124, 38663), (125, 38666), (127, 38678), (128, 38690), (129, 38705), (130, 38738), (131, 38765), (139, 38855),

Gene: SamW_21 Start: 19818, Stop: 21044, Start Num: 14

Candidate Starts for SamW_21:

(Start: 14 @19818 has 26 MA's), (16, 19827), (18, 19833), (29, 20064), (31, 20082), (38, 20211), (41, 20259), (59, 20457), (65, 20523), (70, 20547), (73, 20580), (88, 20757), (100, 20820),

Gene: Sampson_42 Start: 37640, Stop: 39247, Start Num: 14

Candidate Starts for Sampson_42:

(Start: 14 @37640 has 26 MA's), (Start: 17 @37655 has 2 MA's), (22, 37763), (34, 38006), (37, 38045), (42, 38126), (56, 38315), (71, 38444), (73, 38483), (86, 38609), (92, 38684), (94, 38696), (107, 38825), (113, 38876), (116, 38915), (119, 38966), (124, 39032), (126, 39038), (129, 39074), (135, 39167), (137, 39212), (140, 39233),

Gene: Saronaya_41 Start: 36119, Stop: 37723, Start Num: 14

Candidate Starts for Saronaya_41:

(Start: 9 @36083 has 1 MA's), (Start: 14 @36119 has 26 MA's), (Start: 17 @36134 has 2 MA's), (34, 36485), (37, 36524), (46, 36626), (56, 36788), (57, 36797), (58, 36806), (60, 36812), (61, 36815), (62, 36845), (66, 36875), (69, 36893), (73, 36956), (80, 37016), (84, 37055), (90, 37142), (112, 37331), (119, 37433), (123, 37484), (124, 37505), (125, 37508), (128, 37532), (129, 37547), (130, 37580), (133, 37631), (138, 37685), (139, 37697),

Gene: SchottB_40 Start: 37140, Stop: 38723, Start Num: 14

Candidate Starts for SchottB_40:

(Start: 9 @37101 has 1 MA's), (Start: 14 @37140 has 26 MA's), (Start: 17 @37155 has 2 MA's), (31, 37425), (34, 37506), (37, 37545), (46, 37629), (57, 37800), (58, 37809), (60, 37815), (61, 37818), (62, 37848), (66, 37878), (73, 37959), (80, 38019), (90, 38145), (92, 38154), (106, 38280), (119, 38436), (123, 38484), (124, 38505), (125, 38508), (128, 38532), (129, 38547), (130, 38580), (131, 38607), (139, 38697),

Gene: Scioto_43 Start: 37696, Stop: 39303, Start Num: 14

Candidate Starts for Scioto_43:

(Start: 14 @37696 has 26 MA's), (Start: 17 @37711 has 2 MA's), (22, 37819), (34, 38062), (37, 38101), (42, 38182), (56, 38371), (71, 38500), (73, 38539), (86, 38665), (92, 38740), (94, 38752), (107, 38881), (113, 38932), (116, 38971), (119, 39022), (124, 39088), (126, 39094), (129, 39130), (135, 39223), (137, 39268), (140, 39289),

Gene: StAB_21 Start: 19864, Stop: 21096, Start Num: 14

Candidate Starts for StAB_21:

(1, 19534), (2, 19549), (4, 19555), (Start: 14 @19864 has 26 MA's), (16, 19873), (29, 20110), (31, 20128), (38, 20257), (41, 20305), (59, 20503), (65, 20569), (70, 20593), (73, 20626), (87, 20752), (88, 20803), (100, 20866),

Gene: Tangerine_41 Start: 36012, Stop: 37595, Start Num: 14

Candidate Starts for Tangerine_41:

(Start: 9 @35973 has 1 MA's), (Start: 14 @36012 has 26 MA's), (Start: 17 @36027 has 2 MA's), (34, 36378), (37, 36417), (46, 36501), (57, 36672), (58, 36681), (60, 36687), (61, 36690), (62, 36720), (66, 36750), (73, 36831), (80, 36891), (90, 37017), (92, 37026), (119, 37308), (123, 37356), (124, 37377), (125, 37380), (128, 37404), (129, 37419), (130, 37452), (139, 37569),

Gene: Tardus_43 Start: 37065, Stop: 38660, Start Num: 17

Candidate Starts for Tardus_43:

(Start: 14 @37050 has 26 MA's), (Start: 17 @37065 has 2 MA's), (34, 37416), (37, 37455), (42, 37539), (56, 37728), (71, 37857), (73, 37896), (86, 38022), (92, 38097), (94, 38109), (107, 38238), (113, 38289), (116, 38328), (119, 38379), (124, 38445), (126, 38451), (129, 38487), (135, 38580), (137, 38625), (140, 38646),

Gene: Troy_21 Start: 19818, Stop: 21044, Start Num: 14

Candidate Starts for Troy_21:

(Start: 14 @19818 has 26 MA's), (16, 19827), (18, 19833), (29, 20064), (31, 20082), (38, 20211), (41, 20259), (59, 20457), (65, 20523), (70, 20547), (73, 20580), (88, 20757), (100, 20820),

Gene: Tycho_41 Start: 36099, Stop: 37682, Start Num: 14

Candidate Starts for Tycho_41:

(Start: 9 @36060 has 1 MA's), (Start: 14 @36099 has 26 MA's), (Start: 17 @36114 has 2 MA's), (31, 36384), (34, 36465), (37, 36504), (46, 36588), (57, 36759), (58, 36768), (60, 36774), (61, 36777), (62, 36807), (66, 36837), (73, 36918), (80, 36978), (90, 37104), (92, 37113), (119, 37395), (123, 37443), (124, 37464), (125, 37467), (128, 37491), (129, 37506), (130, 37539), (139, 37656),

Gene: Verity_41 Start: 37882, Stop: 39492, Start Num: 14

Candidate Starts for Verity_41:

(Start: 14 @37882 has 26 MA's), (Start: 17 @37897 has 2 MA's), (34, 38248), (37, 38287), (42, 38371), (54, 38554), (56, 38560), (73, 38728), (86, 38854), (92, 38929), (94, 38941), (107, 39070), (112, 39109), (113, 39121), (116, 39160), (119, 39211), (124, 39277), (126, 39283), (129, 39319), (135, 39412), (137, 39457), (139, 39475), (140, 39478),

Gene: ViaConlectus_42 Start: 36330, Stop: 37937, Start Num: 14

Candidate Starts for ViaConlectus_42:

(12, 36312), (Start: 14 @36330 has 26 MA's), (Start: 17 @36345 has 2 MA's), (34, 36696), (37, 36735), (42, 36816), (56, 37005), (71, 37134), (73, 37173), (86, 37299), (92, 37374), (94, 37386), (107, 37515), (113, 37566), (116, 37605), (119, 37656), (124, 37722), (126, 37728), (129, 37764), (135, 37857), (137, 37902), (140, 37923),

Gene: YorkOnyx_42 Start: 36358, Stop: 37941, Start Num: 14

Candidate Starts for YorkOnyx_42:

(Start: 9 @36319 has 1 MA's), (Start: 14 @36358 has 26 MA's), (Start: 17 @36373 has 2 MA's), (34, 36724), (37, 36763), (46, 36847), (57, 37018), (58, 37027), (60, 37033), (61, 37036), (62, 37066), (66, 37096), (73, 37177), (80, 37237), (90, 37363), (92, 37372), (114, 37576), (118, 37642), (119, 37654), (123, 37702), (124, 37723), (125, 37726), (127, 37738), (128, 37750), (129, 37765), (130, 37798), (131, 37825), (139, 37915),

Gene: Zipp_41 Start: 37800, Stop: 39395, Start Num: 17

Candidate Starts for Zipp_41:

(Start: 14 @37785 has 26 MA's), (Start: 17 @37800 has 2 MA's), (34, 38151), (37, 38190), (42, 38274), (56, 38463), (71, 38592), (73, 38631), (86, 38757), (94, 38844), (107, 38973), (112, 39012), (113, 39024), (116, 39063), (119, 39114), (123, 39159), (124, 39180), (126, 39186), (129, 39222), (135, 39315), (137, 39360), (139, 39378), (140, 39381), (141, 39387),

Gene: Zitch_45 Start: 36483, Stop: 38093, Start Num: 14

Candidate Starts for Zitch_45:

(Start: 14 @36483 has 26 MA's), (Start: 17 @36498 has 2 MA's), (34, 36849), (37, 36888), (42, 36972), (48, 37002), (54, 37155), (56, 37161), (65, 37245), (71, 37290), (73, 37329), (86, 37455), (92, 37530), (94, 37542), (107, 37671), (112, 37710), (113, 37722), (116, 37761), (119, 37812), (124, 37878), (126, 37884), (129, 37920), (135, 38013), (137, 38058), (140, 38079),