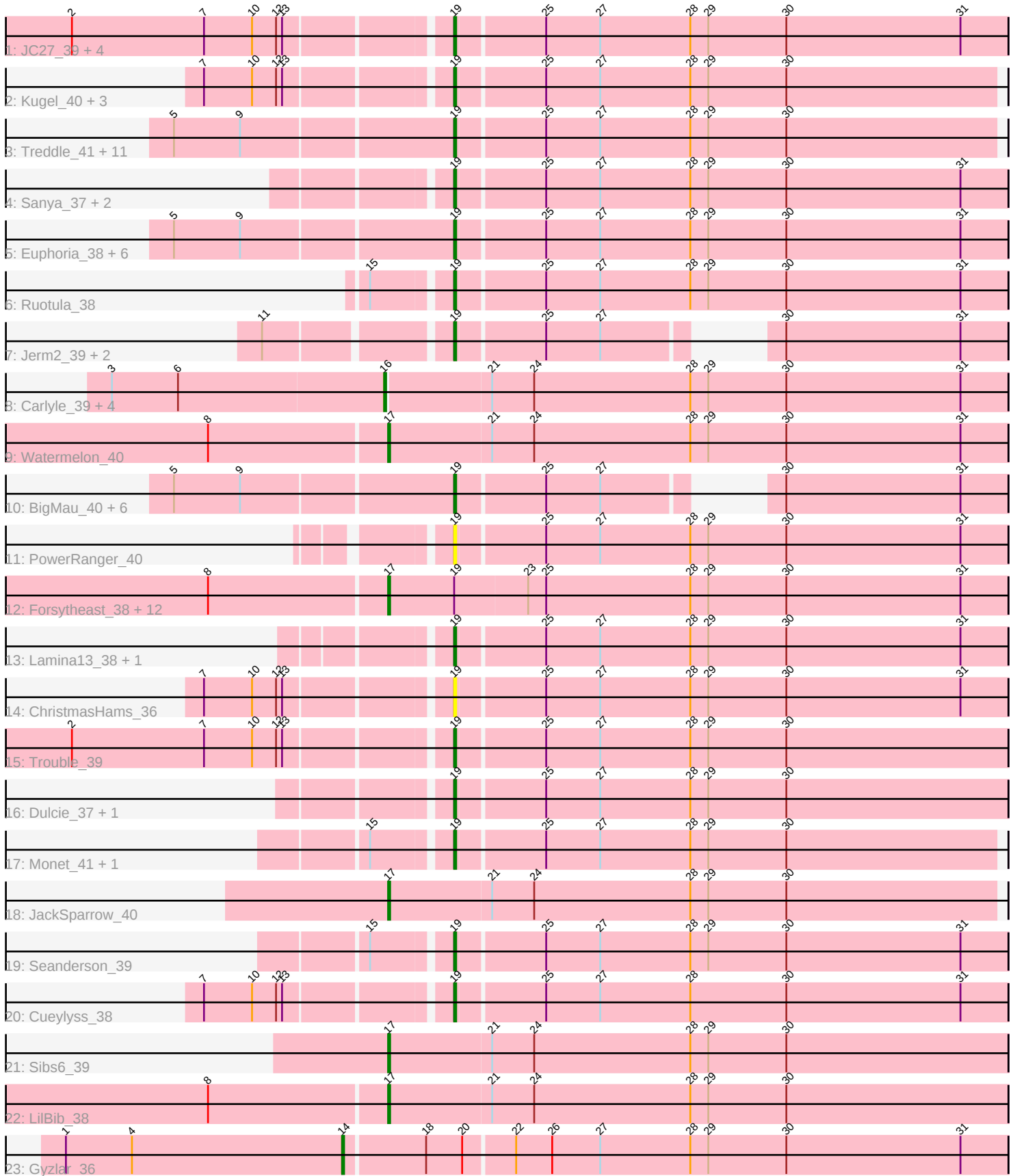


Pham 280379



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 280379 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280379 has 76 members, 6 are drafts.

Phages represented in each track:

- Track 1 : JC27_39, Ashballer_40, Acme_41, Greg_40, Fajezeel_40
- Track 2 : Kugel_40, Nhonho_38, Scowl_38, Barriga_38
- Track 3 : Treddle_41, Whitspit_37, BeesKnees_39, Petruchio_39, Edtherson_40, Zephyr_39, DreamCatcher_41, PinkPlastic_37, Aeneas_41, Bigchungu_38, Mule_37, Seabiscuit_40
- Track 4 : Sanya_37, Ciao_38, Pippin_40
- Track 5 : Euphoria_38, Marcell_38, SpikeBT_40, Pari_39, GageAP_40, BillKnuckles_39, U2_38
- Track 6 : Ruotula_38
- Track 7 : Jerm2_39, HermioneGrange_38, Rohr_39
- Track 8 : Carlyle_39, Chanagan_37, PherrisBueller_39, Dreamboat_39, Jasper_39
- Track 9 : Watermelon_40
- Track 10 : BigMau_40, Burton_39, Museum_40, Molly_40, Petp2012_40, TwoPeat_39, Bob3_37
- Track 11 : PowerRanger_40
- Track 12 : Forsytheast_38, SwissCheese_40, Marchy_33, Corvo_39, Levia_35, ShortQueendom_33, HanShotFirst_37, Moose_38, PhineBark_37, Altman_40, Blackflame_38, Payneul_38, Kanely_39
- Track 13 : Lamina13_38, Tasp14_39
- Track 14 : ChristmasHams_36
- Track 15 : Trouble_39
- Track 16 : Dulcie_37, Rutherferd_40
- Track 17 : Monet_41, Pepe_34
- Track 18 : JackSparrow_40
- Track 19 : Seanderson_39
- Track 20 : Cueylyss_38
- Track 21 : Sibs6_39
- Track 22 : LilBib_38
- Track 23 : Gyzlar_36

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

The start number called the most often in the published annotations is 19, it was called in 49 of the 70 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acme_41, Aeneas_41, Ashballer_40, Barriga_38, BeesKnees_39, BigMau_40, Bigchungi_38, BillKnuckles_39, Bob3_37, Burton_39, ChristmasHams_36, Ciao_38, Cueyllyss_38, DreamCatcher_41, Dulcie_37, Edtherson_40, Euphoria_38, Fajezeel_40, GageAP_40, Greg_40, HermioneGrange_38, JC27_39, Jerm2_39, Kugel_40, Lamina13_38, Marcell_38, Molly_40, Monet_41, Mule_37, Museum_40, Nhonho_38, Pari_39, Pepe_34, Petp2012_40, Petruchio_39, PinkPlastic_37, Pippin_40, PowerRanger_40, Rohr_39, Ruotula_38, Rutherford_40, Sanya_37, Scowl_38, Seabiscuit_40, Seanderson_39, SpikeBT_40, Tasp14_39, Treddle_41, Trouble_39, TwoPeat_39, U2_38, Whitspit_37, Zephyr_39,

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

- Altman_40, Blackflame_38, Corvo_39, Forsytheast_38, HanShotFirst_37, Kanely_39, Levia_35, Marchy_33, Moose_38, Payneful_38, PhineBark_37, ShortQueendom_33, SwissCheese_40,

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

- Carlyle_39, Chanagan_37, Dreamboat_39, Gyzlar_36, JackSparrow_40, Jasper_39, LilBib_38, PherrisBueller_39, Sibs6_39, Watermelon_40,

Summary by start number:

Start 14:

- Found in 1 of 76 (1.3%) of genes in pham
- Manual Annotations of this start: 1 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Gyzlar_36 (A1),

Start 16:

- Found in 5 of 76 (6.6%) of genes in pham
- Manual Annotations of this start: 5 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Carlyle_39 (A1), Chanagan_37 (A1), Dreamboat_39 (A1), Jasper_39 (A1), PherrisBueller_39 (A1),

Start 17:

- Found in 17 of 76 (22.4%) of genes in pham
- Manual Annotations of this start: 15 of 70
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altman_40 (A1), Blackflame_38 (A1), Corvo_39 (A1), Forsytheast_38 (A1), HanShotFirst_37 (A1), JackSparrow_40 (A1), Kanely_39 (A1), Levia_35 (A1), LilBib_38 (A1), Marchy_33 (A1), Moose_38 (A1), Payneful_38 (A1), PhineBark_37 (A1), ShortQueendom_33 (A1), Sibs6_39 (A1), SwissCheese_40 (A1), Watermelon_40 (A1),

Start 19:

- Found in 66 of 76 (86.8%) of genes in pham
- Manual Annotations of this start: 49 of 70
- Called 80.3% of time when present
- Phage (with cluster) where this start called: Acme_41 (A1), Aeneas_41 (A1), Ashballer_40 (A1), Barriga_38 (A1), BeesKnees_39 (A1), BigMau_40 (A1), Bigchungi_38 (A1), BillKnuckles_39 (A1), Bob3_37 (A1), Burton_39 (A1),

ChristmasHams_36 (A1), Ciao_38 (A1), Cueyllyss_38 (A1), DreamCatcher_41 (A1), Dulcie_37 (A1), Edtherson_40 (A1), Euphoria_38 (A1), Fajezeel_40 (A1), GageAP_40 (A1), Greg_40 (A1), HermioneGrange_38 (A1), JC27_39 (A1), Jerm2_39 (A1), Kugel_40 (A1), Lamina13_38 (A1), Marcell_38 (A1), Molly_40 (A1), Monet_41 (A1), Mule_37 (A1), Museum_40 (A1), Nhonho_38 (A1), Pari_39 (A1), Pepe_34 (A1), Petp2012_40 (A1), Petruchio_39 (A1), PinkPlastic_37 (A1), Pippin_40 (A1), PowerRanger_40 (A1), Rohr_39 (A1), Ruotula_38 (A1), Rutherferd_40 (A1), Sanya_37 (A1), Scowl_38 (A1), Seabiscuit_40 (A1), Seanderson_39 (A1), SpikeBT_40 (A1), Tasp14_39 (A1), Treddle_41 (A1), Trouble_39 (A1), TwoPeat_39 (A1), U2_38 (A1), Whitspit_37 (A1), Zephyr_39 (A1),

Summary by clusters:

There is one cluster represented in this pham: A1

Info for manual annotations of cluster A1:

- Start number 14 was manually annotated 1 time for cluster A1.
- Start number 16 was manually annotated 5 times for cluster A1.
- Start number 17 was manually annotated 15 times for cluster A1.
- Start number 19 was manually annotated 49 times for cluster A1.

Gene Information:

Gene: Acme_41 Start: 31739, Stop: 31467, Start Num: 19

Candidate Starts for Acme_41:

(2, 31919), (7, 31853), (10, 31829), (12, 31817), (13, 31814), (Start: 19 @31739 has 49 MA's), (25, 31697), (27, 31670), (28, 31625), (29, 31616), (30, 31577), (31, 31490),

Gene: Aeneas_41 Start: 31799, Stop: 31530, Start Num: 19

Candidate Starts for Aeneas_41:

(5, 31934), (9, 31901), (Start: 19 @31799 has 49 MA's), (25, 31760), (27, 31733), (28, 31688), (29, 31679), (30, 31640),

Gene: Altman_40 Start: 32259, Stop: 31951, Start Num: 17

Candidate Starts for Altman_40:

(8, 32346), (Start: 17 @32259 has 15 MA's), (Start: 19 @32226 has 49 MA's), (23, 32190), (25, 32181), (28, 32109), (29, 32100), (30, 32061), (31, 31974),

Gene: Ashballer_40 Start: 32195, Stop: 31923, Start Num: 19

Candidate Starts for Ashballer_40:

(2, 32375), (7, 32309), (10, 32285), (12, 32273), (13, 32270), (Start: 19 @32195 has 49 MA's), (25, 32153), (27, 32126), (28, 32081), (29, 32072), (30, 32033), (31, 31946),

Gene: Barriga_38 Start: 30917, Stop: 30645, Start Num: 19

Candidate Starts for Barriga_38:

(7, 31031), (10, 31007), (12, 30995), (13, 30992), (Start: 19 @30917 has 49 MA's), (25, 30875), (27, 30848), (28, 30803), (29, 30794), (30, 30755),

Gene: BeesKnees_39 Start: 31359, Stop: 31087, Start Num: 19

Candidate Starts for BeesKnees_39:

(5, 31494), (9, 31461), (Start: 19 @31359 has 49 MA's), (25, 31317), (27, 31290), (28, 31245), (29, 31236), (30, 31197),

Gene: BigMau_40 Start: 31436, Stop: 31206, Start Num: 19

Candidate Starts for BigMau_40:

(5, 31571), (9, 31538), (Start: 19 @31436 has 49 MA's), (25, 31394), (27, 31367), (30, 31316), (31, 31229),

Gene: Bigchungi_38 Start: 31052, Stop: 30780, Start Num: 19

Candidate Starts for Bigchungi_38:

(5, 31187), (9, 31154), (Start: 19 @31052 has 49 MA's), (25, 31010), (27, 30983), (28, 30938), (29, 30929), (30, 30890),

Gene: BillKnuckles_39 Start: 32162, Stop: 31890, Start Num: 19

Candidate Starts for BillKnuckles_39:

(5, 32297), (9, 32264), (Start: 19 @32162 has 49 MA's), (25, 32120), (27, 32093), (28, 32048), (29, 32039), (30, 32000), (31, 31913),

Gene: Blackflame_38 Start: 30951, Stop: 30643, Start Num: 17

Candidate Starts for Blackflame_38:

(8, 31038), (Start: 17 @30951 has 15 MA's), (Start: 19 @30918 has 49 MA's), (23, 30882), (25, 30873), (28, 30801), (29, 30792), (30, 30753), (31, 30666),

Gene: Bob3_37 Start: 30786, Stop: 30556, Start Num: 19

Candidate Starts for Bob3_37:

(5, 30921), (9, 30888), (Start: 19 @30786 has 49 MA's), (25, 30744), (27, 30717), (30, 30666), (31, 30579),

Gene: Burton_39 Start: 31356, Stop: 31126, Start Num: 19

Candidate Starts for Burton_39:

(5, 31491), (9, 31458), (Start: 19 @31356 has 49 MA's), (25, 31314), (27, 31287), (30, 31236), (31, 31149),

Gene: Carlyle_39 Start: 30068, Stop: 29760, Start Num: 16

Candidate Starts for Carlyle_39:

(3, 30203), (6, 30170), (Start: 16 @30068 has 5 MA's), (21, 30017), (24, 29996), (28, 29918), (29, 29909), (30, 29870), (31, 29783),

Gene: Chanagan_37 Start: 30908, Stop: 30600, Start Num: 16

Candidate Starts for Chanagan_37:

(3, 31043), (6, 31010), (Start: 16 @30908 has 5 MA's), (21, 30857), (24, 30836), (28, 30758), (29, 30749), (30, 30710), (31, 30623),

Gene: ChristmasHams_36 Start: 28576, Stop: 28304, Start Num: 19

Candidate Starts for ChristmasHams_36:

(7, 28690), (10, 28666), (12, 28654), (13, 28651), (Start: 19 @28576 has 49 MA's), (25, 28534), (27, 28507), (28, 28462), (29, 28453), (30, 28414), (31, 28327),

Gene: Ciao_38 Start: 31210, Stop: 30938, Start Num: 19

Candidate Starts for Ciao_38:

(Start: 19 @31210 has 49 MA's), (25, 31168), (27, 31141), (28, 31096), (29, 31087), (30, 31048), (31, 30961),

Gene: Corvo_39 Start: 32273, Stop: 31965, Start Num: 17

Candidate Starts for Corvo_39:

(8, 32360), (Start: 17 @32273 has 15 MA's), (Start: 19 @32240 has 49 MA's), (23, 32204), (25, 32195), (28, 32123), (29, 32114), (30, 32075), (31, 31988),

Gene: Cueyllyss_38 Start: 31412, Stop: 31140, Start Num: 19

Candidate Starts for Cueyllyss_38:

(7, 31526), (10, 31502), (12, 31490), (13, 31487), (Start: 19 @31412 has 49 MA's), (25, 31370), (27, 31343), (28, 31298), (30, 31250), (31, 31163),

Gene: DreamCatcher_41 Start: 32660, Stop: 32388, Start Num: 19

Candidate Starts for DreamCatcher_41:

(5, 32795), (9, 32762), (Start: 19 @32660 has 49 MA's), (25, 32618), (27, 32591), (28, 32546), (29, 32537), (30, 32498),

Gene: Dreamboat_39 Start: 31286, Stop: 30978, Start Num: 16

Candidate Starts for Dreamboat_39:

(3, 31421), (6, 31388), (Start: 16 @31286 has 5 MA's), (21, 31235), (24, 31214), (28, 31136), (29, 31127), (30, 31088), (31, 31001),

Gene: Dulcie_37 Start: 30943, Stop: 30671, Start Num: 19

Candidate Starts for Dulcie_37:

(Start: 19 @30943 has 49 MA's), (25, 30901), (27, 30874), (28, 30829), (29, 30820), (30, 30781),

Gene: Edtherson_40 Start: 32538, Stop: 32272, Start Num: 19

Candidate Starts for Edtherson_40:

(5, 32673), (9, 32640), (Start: 19 @32538 has 49 MA's), (25, 32496), (27, 32469), (28, 32424), (29, 32415), (30, 32376),

Gene: Euphoria_38 Start: 31379, Stop: 31107, Start Num: 19

Candidate Starts for Euphoria_38:

(5, 31514), (9, 31481), (Start: 19 @31379 has 49 MA's), (25, 31337), (27, 31310), (28, 31265), (29, 31256), (30, 31217), (31, 31130),

Gene: Fajezeel_40 Start: 31568, Stop: 31296, Start Num: 19

Candidate Starts for Fajezeel_40:

(2, 31748), (7, 31682), (10, 31658), (12, 31646), (13, 31643), (Start: 19 @31568 has 49 MA's), (25, 31526), (27, 31499), (28, 31454), (29, 31445), (30, 31406), (31, 31319),

Gene: Forsytheast_38 Start: 31551, Stop: 31243, Start Num: 17

Candidate Starts for Forsytheast_38:

(8, 31638), (Start: 17 @31551 has 15 MA's), (Start: 19 @31518 has 49 MA's), (23, 31482), (25, 31473), (28, 31401), (29, 31392), (30, 31353), (31, 31266),

Gene: GageAP_40 Start: 31664, Stop: 31392, Start Num: 19

Candidate Starts for GageAP_40:

(5, 31799), (9, 31766), (Start: 19 @31664 has 49 MA's), (25, 31622), (27, 31595), (28, 31550), (29, 31541), (30, 31502), (31, 31415),

Gene: Greg_40 Start: 31568, Stop: 31296, Start Num: 19

Candidate Starts for Greg_40:

(2, 31748), (7, 31682), (10, 31658), (12, 31646), (13, 31643), (Start: 19 @31568 has 49 MA's), (25, 31526), (27, 31499), (28, 31454), (29, 31445), (30, 31406), (31, 31319),

Gene: Gyzlar_36 Start: 30052, Stop: 29726, Start Num: 14

Candidate Starts for Gyzlar_36:

(1, 30190), (4, 30157), (Start: 14 @30052 has 1 MA's), (18, 30013), (20, 29995), (22, 29971), (26, 29953), (27, 29929), (28, 29884), (29, 29875), (30, 29836), (31, 29749),

Gene: HanShotFirst_37 Start: 30903, Stop: 30595, Start Num: 17

Candidate Starts for HanShotFirst_37:

(8, 30990), (Start: 17 @30903 has 15 MA's), (Start: 19 @30870 has 49 MA's), (23, 30834), (25, 30825), (28, 30753), (29, 30744), (30, 30705), (31, 30618),

Gene: HermioneGrange_38 Start: 31174, Stop: 30944, Start Num: 19

Candidate Starts for HermioneGrange_38:

(11, 31258), (Start: 19 @31174 has 49 MA's), (25, 31132), (27, 31105), (30, 31054), (31, 30967),

Gene: JC27_39 Start: 31765, Stop: 31493, Start Num: 19

Candidate Starts for JC27_39:

(2, 31945), (7, 31879), (10, 31855), (12, 31843), (13, 31840), (Start: 19 @31765 has 49 MA's), (25, 31723), (27, 31696), (28, 31651), (29, 31642), (30, 31603), (31, 31516),

Gene: JackSparrow_40 Start: 32093, Stop: 31791, Start Num: 17

Candidate Starts for JackSparrow_40:

(Start: 17 @32093 has 15 MA's), (21, 32042), (24, 32021), (28, 31943), (29, 31934), (30, 31895),

Gene: Jasper_39 Start: 31172, Stop: 30864, Start Num: 16

Candidate Starts for Jasper_39:

(3, 31307), (6, 31274), (Start: 16 @31172 has 5 MA's), (21, 31121), (24, 31100), (28, 31022), (29, 31013), (30, 30974), (31, 30887),

Gene: Jerm2_39 Start: 31429, Stop: 31199, Start Num: 19

Candidate Starts for Jerm2_39:

(11, 31513), (Start: 19 @31429 has 49 MA's), (25, 31387), (27, 31360), (30, 31309), (31, 31222),

Gene: Kanely_39 Start: 32035, Stop: 31727, Start Num: 17

Candidate Starts for Kanely_39:

(8, 32122), (Start: 17 @32035 has 15 MA's), (Start: 19 @32002 has 49 MA's), (23, 31966), (25, 31957), (28, 31885), (29, 31876), (30, 31837), (31, 31750),

Gene: Kugel_40 Start: 31983, Stop: 31717, Start Num: 19

Candidate Starts for Kugel_40:

(7, 32097), (10, 32073), (12, 32061), (13, 32058), (Start: 19 @31983 has 49 MA's), (25, 31941), (27, 31914), (28, 31869), (29, 31860), (30, 31821),

Gene: Lamina13_38 Start: 30935, Stop: 30663, Start Num: 19

Candidate Starts for Lamina13_38:

(Start: 19 @30935 has 49 MA's), (25, 30893), (27, 30866), (28, 30821), (29, 30812), (30, 30773), (31, 30686),

Gene: Levia_35 Start: 31194, Stop: 30886, Start Num: 17

Candidate Starts for Levia_35:

(8, 31281), (Start: 17 @31194 has 15 MA's), (Start: 19 @31161 has 49 MA's), (23, 31125), (25, 31116), (28, 31044), (29, 31035), (30, 30996), (31, 30909),

Gene: LilBib_38 Start: 32107, Stop: 31799, Start Num: 17

Candidate Starts for LilBib_38:

(8, 32194), (Start: 17 @32107 has 15 MA's), (21, 32056), (24, 32035), (28, 31957), (29, 31948), (30, 31909),

Gene: Marcell_38 Start: 31685, Stop: 31413, Start Num: 19

Candidate Starts for Marcell_38:

(5, 31820), (9, 31787), (Start: 19 @31685 has 49 MA's), (25, 31643), (27, 31616), (28, 31571), (29, 31562), (30, 31523), (31, 31436),

Gene: Marchy_33 Start: 28275, Stop: 27967, Start Num: 17

Candidate Starts for Marchy_33:

(8, 28362), (Start: 17 @28275 has 15 MA's), (Start: 19 @28242 has 49 MA's), (23, 28206), (25, 28197), (28, 28125), (29, 28116), (30, 28077), (31, 27990),

Gene: Molly_40 Start: 31229, Stop: 30999, Start Num: 19

Candidate Starts for Molly_40:

(5, 31364), (9, 31331), (Start: 19 @31229 has 49 MA's), (25, 31187), (27, 31160), (30, 31109), (31, 31022),

Gene: Monet_41 Start: 33055, Stop: 32789, Start Num: 19

Candidate Starts for Monet_41:

(15, 33091), (Start: 19 @33055 has 49 MA's), (25, 33013), (27, 32986), (28, 32941), (29, 32932), (30, 32893),

Gene: Moose_38 Start: 31551, Stop: 31243, Start Num: 17

Candidate Starts for Moose_38:

(8, 31638), (Start: 17 @31551 has 15 MA's), (Start: 19 @31518 has 49 MA's), (23, 31482), (25, 31473), (28, 31401), (29, 31392), (30, 31353), (31, 31266),

Gene: Mule_37 Start: 29541, Stop: 29269, Start Num: 19

Candidate Starts for Mule_37:

(5, 29676), (9, 29643), (Start: 19 @29541 has 49 MA's), (25, 29499), (27, 29472), (28, 29427), (29, 29418), (30, 29379),

Gene: Museum_40 Start: 31295, Stop: 31065, Start Num: 19

Candidate Starts for Museum_40:

(5, 31430), (9, 31397), (Start: 19 @31295 has 49 MA's), (25, 31253), (27, 31226), (30, 31175), (31, 31088),

Gene: Nhonho_38 Start: 31661, Stop: 31389, Start Num: 19

Candidate Starts for Nhonho_38:

(7, 31775), (10, 31751), (12, 31739), (13, 31736), (Start: 19 @31661 has 49 MA's), (25, 31619), (27, 31592), (28, 31547), (29, 31538), (30, 31499),

Gene: Pari_39 Start: 31087, Stop: 30815, Start Num: 19

Candidate Starts for Pari_39:

(5, 31222), (9, 31189), (Start: 19 @31087 has 49 MA's), (25, 31045), (27, 31018), (28, 30973), (29, 30964), (30, 30925), (31, 30838),

Gene: Payneful_38 Start: 30992, Stop: 30684, Start Num: 17

Candidate Starts for Payneful_38:

(8, 31079), (Start: 17 @30992 has 15 MA's), (Start: 19 @30959 has 49 MA's), (23, 30923), (25, 30914), (28, 30842), (29, 30833), (30, 30794), (31, 30707),

Gene: Pepe_34 Start: 29170, Stop: 28904, Start Num: 19

Candidate Starts for Pepe_34:

(15, 29206), (Start: 19 @29170 has 49 MA's), (25, 29128), (27, 29101), (28, 29056), (29, 29047), (30, 29008),

Gene: Petp2012_40 Start: 32213, Stop: 31983, Start Num: 19

Candidate Starts for Petp2012_40:

(5, 32348), (9, 32315), (Start: 19 @32213 has 49 MA's), (25, 32171), (27, 32144), (30, 32093), (31, 32006),

Gene: Petruchio_39 Start: 31567, Stop: 31298, Start Num: 19

Candidate Starts for Petruchio_39:

(5, 31702), (9, 31669), (Start: 19 @31567 has 49 MA's), (25, 31528), (27, 31501), (28, 31456), (29, 31447), (30, 31408),

Gene: PherrisBueller_39 Start: 31183, Stop: 30875, Start Num: 16

Candidate Starts for PherrisBueller_39:

(3, 31318), (6, 31285), (Start: 16 @31183 has 5 MA's), (21, 31132), (24, 31111), (28, 31033), (29, 31024), (30, 30985), (31, 30898),

Gene: PhineBark_37 Start: 32212, Stop: 31904, Start Num: 17

Candidate Starts for PhineBark_37:

(8, 32299), (Start: 17 @32212 has 15 MA's), (Start: 19 @32179 has 49 MA's), (23, 32143), (25, 32134), (28, 32062), (29, 32053), (30, 32014), (31, 31927),

Gene: PinkPlastic_37 Start: 31097, Stop: 30825, Start Num: 19

Candidate Starts for PinkPlastic_37:

(5, 31232), (9, 31199), (Start: 19 @31097 has 49 MA's), (25, 31055), (27, 31028), (28, 30983), (29, 30974), (30, 30935),

Gene: Pippin_40 Start: 31627, Stop: 31355, Start Num: 19

Candidate Starts for Pippin_40:

(Start: 19 @31627 has 49 MA's), (25, 31585), (27, 31558), (28, 31513), (29, 31504), (30, 31465), (31, 31378),

Gene: PowerRanger_40 Start: 32378, Stop: 32106, Start Num: 19

Candidate Starts for PowerRanger_40:

(Start: 19 @32378 has 49 MA's), (25, 32336), (27, 32309), (28, 32264), (29, 32255), (30, 32216), (31, 32129),

Gene: Rohr_39 Start: 31475, Stop: 31245, Start Num: 19

Candidate Starts for Rohr_39:

(11, 31559), (Start: 19 @31475 has 49 MA's), (25, 31433), (27, 31406), (30, 31355), (31, 31268),

Gene: Ruotula_38 Start: 32043, Stop: 31771, Start Num: 19

Candidate Starts for Ruotula_38:

(15, 32079), (Start: 19 @32043 has 49 MA's), (25, 32001), (27, 31974), (28, 31929), (29, 31920), (30, 31881), (31, 31794),

Gene: Rutherferd_40 Start: 32367, Stop: 32101, Start Num: 19

Candidate Starts for Rutherford_40:

(Start: 19 @32367 has 49 MA's), (25, 32325), (27, 32298), (28, 32253), (29, 32244), (30, 32205),

Gene: Sanya_37 Start: 32063, Stop: 31791, Start Num: 19

Candidate Starts for Sanya_37:

(Start: 19 @32063 has 49 MA's), (25, 32021), (27, 31994), (28, 31949), (29, 31940), (30, 31901), (31, 31814),

Gene: Scowl_38 Start: 31823, Stop: 31551, Start Num: 19

Candidate Starts for Scowl_38:

(7, 31937), (10, 31913), (12, 31901), (13, 31898), (Start: 19 @31823 has 49 MA's), (25, 31781), (27, 31754), (28, 31709), (29, 31700), (30, 31661),

Gene: Seabiscuit_40 Start: 31328, Stop: 31056, Start Num: 19

Candidate Starts for Seabiscuit_40:

(5, 31463), (9, 31430), (Start: 19 @31328 has 49 MA's), (25, 31286), (27, 31259), (28, 31214), (29, 31205), (30, 31166),

Gene: Seanderson_39 Start: 31957, Stop: 31685, Start Num: 19

Candidate Starts for Seanderson_39:

(15, 31993), (Start: 19 @31957 has 49 MA's), (25, 31915), (27, 31888), (28, 31843), (29, 31834), (30, 31795), (31, 31708),

Gene: ShortQueendom_33 Start: 28032, Stop: 27724, Start Num: 17

Candidate Starts for ShortQueendom_33:

(8, 28119), (Start: 17 @28032 has 15 MA's), (Start: 19 @27999 has 49 MA's), (23, 27963), (25, 27954), (28, 27882), (29, 27873), (30, 27834), (31, 27747),

Gene: Sibs6_39 Start: 30489, Stop: 30181, Start Num: 17

Candidate Starts for Sibs6_39:

(Start: 17 @30489 has 15 MA's), (21, 30438), (24, 30417), (28, 30339), (29, 30330), (30, 30291),

Gene: SpikeBT_40 Start: 32361, Stop: 32089, Start Num: 19

Candidate Starts for SpikeBT_40:

(5, 32496), (9, 32463), (Start: 19 @32361 has 49 MA's), (25, 32319), (27, 32292), (28, 32247), (29, 32238), (30, 32199), (31, 32112),

Gene: SwissCheese_40 Start: 32051, Stop: 31743, Start Num: 17

Candidate Starts for SwissCheese_40:

(8, 32138), (Start: 17 @32051 has 15 MA's), (Start: 19 @32018 has 49 MA's), (23, 31982), (25, 31973), (28, 31901), (29, 31892), (30, 31853), (31, 31766),

Gene: Tasp14_39 Start: 31559, Stop: 31287, Start Num: 19

Candidate Starts for Tasp14_39:

(Start: 19 @31559 has 49 MA's), (25, 31517), (27, 31490), (28, 31445), (29, 31436), (30, 31397), (31, 31310),

Gene: Treddle_41 Start: 33009, Stop: 32743, Start Num: 19

Candidate Starts for Treddle_41:

(5, 33144), (9, 33111), (Start: 19 @33009 has 49 MA's), (25, 32967), (27, 32940), (28, 32895), (29, 32886), (30, 32847),

Gene: Trouble_39 Start: 32267, Stop: 31995, Start Num: 19

Candidate Starts for Trouble_39:

(2, 32447), (7, 32381), (10, 32357), (12, 32345), (13, 32342), (Start: 19 @32267 has 49 MA's), (25, 32225), (27, 32198), (28, 32153), (29, 32144), (30, 32105),

Gene: TwoPeat_39 Start: 31714, Stop: 31484, Start Num: 19

Candidate Starts for TwoPeat_39:

(5, 31849), (9, 31816), (Start: 19 @31714 has 49 MA's), (25, 31672), (27, 31645), (30, 31594), (31, 31507),

Gene: U2_38 Start: 31407, Stop: 31135, Start Num: 19

Candidate Starts for U2_38:

(5, 31542), (9, 31509), (Start: 19 @31407 has 49 MA's), (25, 31365), (27, 31338), (28, 31293), (29, 31284), (30, 31245), (31, 31158),

Gene: Watermelon_40 Start: 32252, Stop: 31944, Start Num: 17

Candidate Starts for Watermelon_40:

(8, 32339), (Start: 17 @32252 has 15 MA's), (21, 32201), (24, 32180), (28, 32102), (29, 32093), (30, 32054), (31, 31967),

Gene: Whitspit_37 Start: 29864, Stop: 29595, Start Num: 19

Candidate Starts for Whitspit_37:

(5, 29999), (9, 29966), (Start: 19 @29864 has 49 MA's), (25, 29825), (27, 29798), (28, 29753), (29, 29744), (30, 29705),

Gene: Zephyr_39 Start: 31816, Stop: 31544, Start Num: 19

Candidate Starts for Zephyr_39:

(5, 31951), (9, 31918), (Start: 19 @31816 has 49 MA's), (25, 31774), (27, 31747), (28, 31702), (29, 31693), (30, 31654),