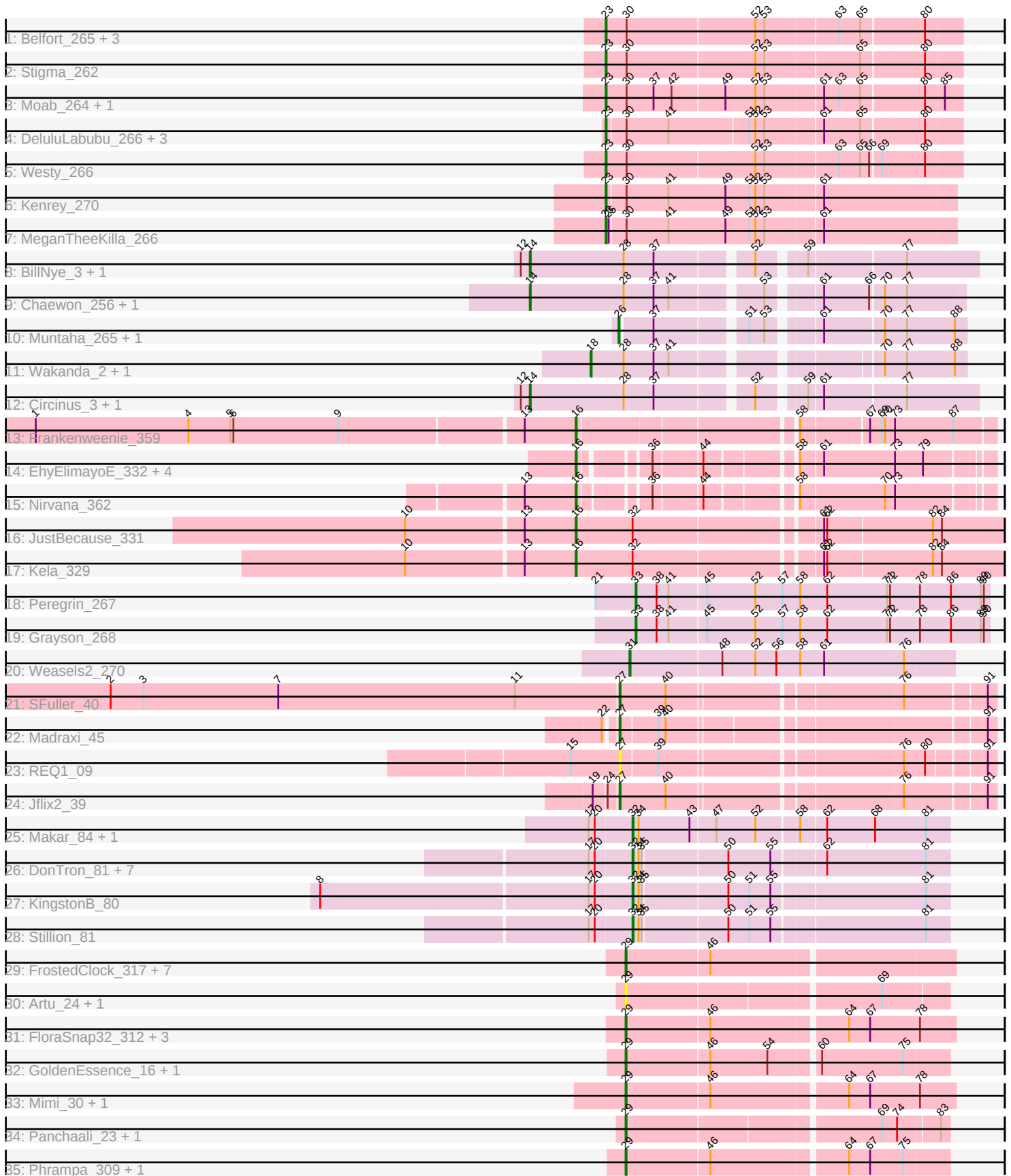


Pham 328992



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 328992 Report

This analysis was run 09/05/26 on database version 662.

Pham number 328992 has 74 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Belfort_265, Karp_265, Comrade_260, SparkleGoddess_264
- Track 2 : Stigma_262
- Track 3 : Moab_264, Patelgo_267
- Track 4 : DeluluLabubu_266, Gilson_264, Maupel_270, Francob_267
- Track 5 : Westy_266
- Track 6 : Kenrey_270
- Track 7 : MeganTheeKilla_266
- Track 8 : BillNye_3, BillNye_249
- Track 9 : Chaewon_256, Chaewon_4
- Track 10 : Muntaha_265, Muntaha_2
- Track 11 : Wakanda_2, Wakanda_261
- Track 12 : Circinus_3, Circinus_248
- Track 13 : Frankenweenie_359
- Track 14 : EhyElimayoE_332, Kradal_329, Quantum_327, Satis_329, Sarkar_327
- Track 15 : Nirvana_362
- Track 16 : JustBecause_331
- Track 17 : Kela_329
- Track 18 : Peregrin_267
- Track 19 : Grayson_268
- Track 20 : Weasels2_270
- Track 21 : SFuller_40
- Track 22 : Madraxi_45
- Track 23 : REQ1_09
- Track 24 : Jflix2_39
- Track 25 : Makar_84, Clawz_82
- Track 26 : DonTron_81, Purplicious_81, ColdSoup_84, Jollymon_81, Amo99_84, Grumio_82, Soos_77, Sting_80
- Track 27 : KingstonB_80
- Track 28 : Stillion_81
- Track 29 : FrostedClock_317, Racecar_31, Racecar_320, Bloom_319, Bloom_32, Talia1610_30, Talia1610_316, FrostedClock_32
- Track 30 : Artu_24, Artu_311
- Track 31 : FloraSnap32_312, Patbob_29, Patbob_315, FloraSnap32_27
- Track 32 : GoldenEssence_16, GoldenEssence_297
- Track 33 : Mimi_30, Mimi_315
- Track 34 : Panchaali_23, Panchaali_310
- Track 35 : Phrampa_309, Phrampa_25

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

The start number called the most often in the published annotations is 29, it was called in 14 of the 59 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Artu_24, Artu_311, Bloom_319, Bloom_32, FloraSnap32_27, FloraSnap32_312, FrostedClock_317, FrostedClock_32, GoldenEssence_16, GoldenEssence_297, Mimi_30, Mimi_315, Panchaali_23, Panchaali_310, Patbob_29, Patbob_315, Phrampa_25, Phrampa_309, Racecar_31, Racecar_320, Talia1610_30, Talia1610_316,

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

-

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

- Amo99_84, Belfort_265, BillNye_249, BillNye_3, Chaewon_256, Chaewon_4, Circinus_248, Circinus_3, Clawz_82, ColdSoup_84, Comrade_260, DeluluLabubu_266, DonTron_81, EhyElimayoE_332, Francob_267, Frankenweenie_359, Gilson_264, Grayson_268, Grumio_82, Jflix2_39, Jollymon_81, JustBecause_331, Karp_265, Kela_329, Kenrey_270, KingstonB_80, Kradal_329, Madraxi_45, Makar_84, Maupel_270, MeganTheeKilla_266, Moab_264, Muntaha_2, Muntaha_265, Nirvana_362, Patelgo_267, Peregrin_267, Purplicious_81, Quantum_327, REQ1_09, SFuller_40, Sarkar_327, Satis_329, Soos_77, SparkleGoddess_264, Stigma_262, Stillion_81, Sting_80, Wakanda_2, Wakanda_261, Weasels2_270, Westy_266,

Summary by start number:

Start 14:

- Found in 6 of 74 (8.1%) of genes in pham
- Manual Annotations of this start: 6 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BillNye_249 (BK2), BillNye_3 (BK2), Chaewon_256 (BK2), Chaewon_4 (BK2), Circinus_248 (BK2), Circinus_3 (BK2),

Start 16:

- Found in 9 of 74 (12.2%) of genes in pham
- Manual Annotations of this start: 9 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: EhyElimayoE_332 (BM), Frankenweenie_359 (BM), JustBecause_331 (BM), Kela_329 (BM), Kradal_329 (BM), Nirvana_362 (BM), Quantum_327 (BM), Sarkar_327 (BM), Satis_329 (BM),

Start 18:

- Found in 2 of 74 (2.7%) of genes in pham
- Manual Annotations of this start: 2 of 59
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Wakanda_2 (BK2), Wakanda_261 (BK2),

Start 23:

- Found in 14 of 74 (18.9%) of genes in pham
- Manual Annotations of this start: 13 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Belfort_265 (BK1), Comrade_260 (BK1), DeluluLabubu_266 (BK1), Francob_267 (BK1), Gilson_264 (BK1), Karp_265 (BK1), Kenrey_270 (BK1), Maupel_270 (BK1), MeganTheeKilla_266 (BK1), Moab_264 (BK1), Patelgo_267 (BK1), SparkleGoddess_264 (BK1), Stigma_262 (BK1), Westy_266 (BK1),

Start 26:

- Found in 2 of 74 (2.7%) of genes in pham
- Manual Annotations of this start: 2 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Muntaha_2 (BK2), Muntaha_265 (BK2),

Start 27:

- Found in 4 of 74 (5.4%) of genes in pham
- Manual Annotations of this start: 3 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jflix2_39 (CF), Madraxi_45 (CF), REQ1_09 (CF), SFuller_40 (CF),

Start 29:

- Found in 22 of 74 (29.7%) of genes in pham
- Manual Annotations of this start: 14 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Artu_24 (FC), Artu_311 (FC), Bloom_319 (FC), Bloom_32 (FC), FloraSnap32_27 (FC), FloraSnap32_312 (FC), FrostedClock_317 (FC), FrostedClock_32 (FC), GoldenEssence_16 (FC), GoldenEssence_297 (FC), Mimi_30 (FC), Mimi_315 (FC), Panchaali_23 (FC), Panchaali_310 (FC), Patbob_29 (FC), Patbob_315 (FC), Phrampa_25 (FC), Phrampa_309 (FC), Racecar_31 (FC), Racecar_320 (FC), Talia1610_30 (FC), Talia1610_316 (FC),

Start 31:

- Found in 1 of 74 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Weasels2_270 (CB),

Start 32:

- Found in 14 of 74 (18.9%) of genes in pham
- Manual Annotations of this start: 7 of 59
- Called 85.7% of time when present
- Phage (with cluster) where this start called: Amo99_84 (CP), Clawz_82 (CP), ColdSoup_84 (CP), DonTron_81 (CP), Grumio_82 (CP), Jollymon_81 (CP), KingstonB_80 (CP), Makar_84 (CP), Purplicious_81 (CP), Soos_77 (CP), Stillion_81 (CP), Sting_80 (CP),

Start 33:

- Found in 2 of 74 (2.7%) of genes in pham
- Manual Annotations of this start: 2 of 59
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Grayson_268 (CB), Peregrin_267 (CB),

Summary by clusters:

There are 7 clusters represented in this pham: BM, CF, FC, BK1, BK2, CB, CP,

Info for manual annotations of cluster BK1:

- Start number 23 was manually annotated 13 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 14 was manually annotated 6 times for cluster BK2.
- Start number 18 was manually annotated 2 times for cluster BK2.
- Start number 26 was manually annotated 2 times for cluster BK2.

Info for manual annotations of cluster BM:

- Start number 16 was manually annotated 9 times for cluster BM.

Info for manual annotations of cluster CB:

- Start number 31 was manually annotated 1 time for cluster CB.
- Start number 33 was manually annotated 2 times for cluster CB.

Info for manual annotations of cluster CF:

- Start number 27 was manually annotated 3 times for cluster CF.

Info for manual annotations of cluster CP:

- Start number 32 was manually annotated 7 times for cluster CP.

Info for manual annotations of cluster FC:

- Start number 29 was manually annotated 14 times for cluster FC.

Gene Information:

Gene: Amo99_84 Start: 52457, Stop: 52759, Start Num: 32

Candidate Starts for Amo99_84:

(17, 52415), (20, 52421), (Start: 32 @52457 has 7 MA's), (34, 52463), (35, 52466), (50, 52547), (55, 52589), (62, 52637), (81, 52736),

Gene: Artu_24 Start: 9828, Stop: 10130, Start Num: 29

Candidate Starts for Artu_24:

(Start: 29 @9828 has 14 MA's), (69, 10068),

Gene: Artu_311 Start: 188982, Stop: 189284, Start Num: 29

Candidate Starts for Artu_311:

(Start: 29 @188982 has 14 MA's), (69, 189222),

Gene: Belfort_265 Start: 126637, Stop: 126978, Start Num: 23

Candidate Starts for Belfort_265:

(Start: 23 @126637 has 13 MA's), (30, 126658), (52, 126784), (53, 126793), (63, 126862), (65, 126883), (80, 126943),

Gene: BillNye_3 Start: 1039, Stop: 1449, Start Num: 14

Candidate Starts for BillNye_3:

(12, 1030), (Start: 14 @1039 has 6 MA's), (28, 1132), (37, 1162), (52, 1249), (59, 1288), (77, 1378),

Gene: BillNye_249 Start: 125861, Stop: 126271, Start Num: 14

Candidate Starts for BillNye_249:

(12, 125852), (Start: 14 @125861 has 6 MA's), (28, 125954), (37, 125984), (52, 126071), (59, 126110), (77, 126200),

Gene: Bloom_319 Start: 187552, Stop: 187866, Start Num: 29

Candidate Starts for Bloom_319:

(Start: 29 @187552 has 14 MA's), (46, 187633),

Gene: Bloom_32 Start: 14077, Stop: 14391, Start Num: 29

Candidate Starts for Bloom_32:

(Start: 29 @14077 has 14 MA's), (46, 14158),

Gene: Chaewon_256 Start: 126768, Stop: 127163, Start Num: 14

Candidate Starts for Chaewon_256:

(Start: 14 @126768 has 6 MA's), (28, 126861), (37, 126891), (41, 126906), (53, 126987), (61, 127029), (66, 127074), (70, 127086), (77, 127107),

Gene: Chaewon_4 Start: 1041, Stop: 1436, Start Num: 14

Candidate Starts for Chaewon_4:

(Start: 14 @1041 has 6 MA's), (28, 1134), (37, 1164), (41, 1179), (53, 1260), (61, 1302), (66, 1347), (70, 1359), (77, 1380),

Gene: Circinus_3 Start: 1078, Stop: 1488, Start Num: 14

Candidate Starts for Circinus_3:

(12, 1069), (Start: 14 @1078 has 6 MA's), (28, 1171), (37, 1201), (52, 1288), (59, 1327), (61, 1339), (77, 1417),

Gene: Circinus_248 Start: 125405, Stop: 125815, Start Num: 14

Candidate Starts for Circinus_248:

(12, 125396), (Start: 14 @125405 has 6 MA's), (28, 125498), (37, 125528), (52, 125615), (59, 125654), (61, 125666), (77, 125744),

Gene: Clawz_82 Start: 52540, Stop: 52845, Start Num: 32

Candidate Starts for Clawz_82:

(17, 52498), (20, 52504), (Start: 32 @52540 has 7 MA's), (34, 52546), (43, 52597), (47, 52621), (52, 52660), (58, 52699), (62, 52723), (68, 52771), (81, 52822),

Gene: ColdSoup_84 Start: 52538, Stop: 52840, Start Num: 32

Candidate Starts for ColdSoup_84:

(17, 52496), (20, 52502), (Start: 32 @52538 has 7 MA's), (34, 52544), (35, 52547), (50, 52628), (55, 52670), (62, 52718), (81, 52817),

Gene: Comrade_260 Start: 126776, Stop: 127117, Start Num: 23

Candidate Starts for Comrade_260:

(Start: 23 @126776 has 13 MA's), (30, 126797), (52, 126923), (53, 126932), (63, 127001), (65, 127022), (80, 127082),

Gene: DeluluLabubu_266 Start: 126437, Stop: 126772, Start Num: 23

Candidate Starts for DeluluLabubu_266:

(Start: 23 @126437 has 13 MA's), (30, 126455), (41, 126497), (51, 126572), (52, 126578), (53, 126587), (61, 126641), (65, 126677), (80, 126737),

Gene: DonTron_81 Start: 52416, Stop: 52718, Start Num: 32

Candidate Starts for DonTron_81:

(17, 52374), (20, 52380), (Start: 32 @52416 has 7 MA's), (34, 52422), (35, 52425), (50, 52506), (55, 52548), (62, 52596), (81, 52695),

Gene: EhyElimayoE_332 Start: 178762, Stop: 178415, Start Num: 16

Candidate Starts for EhyElimayoE_332:

(Start: 16 @178762 has 9 MA's), (36, 178708), (44, 178666), (58, 178588), (61, 178570), (73, 178501), (79, 178474),

Gene: FloraSnap32_312 Start: 186646, Stop: 186960, Start Num: 29

Candidate Starts for FloraSnap32_312:

(Start: 29 @186646 has 14 MA's), (46, 186727), (64, 186856), (67, 186877), (78, 186925),

Gene: FloraSnap32_27 Start: 12508, Stop: 12822, Start Num: 29

Candidate Starts for FloraSnap32_27:

(Start: 29 @12508 has 14 MA's), (46, 12589), (64, 12718), (67, 12739), (78, 12787),

Gene: Francob_267 Start: 126631, Stop: 126966, Start Num: 23

Candidate Starts for Francob_267:

(Start: 23 @126631 has 13 MA's), (30, 126649), (41, 126691), (51, 126766), (52, 126772), (53, 126781), (61, 126835), (65, 126871), (80, 126931),

Gene: Frankenweenie_359 Start: 192379, Stop: 192002, Start Num: 16

Candidate Starts for Frankenweenie_359:

(1, 192910), (4, 192757), (5, 192715), (6, 192712), (9, 192607), (13, 192430), (Start: 16 @192379 has 9 MA's), (58, 192181), (67, 192121), (69, 192109), (70, 192106), (73, 192097), (87, 192040),

Gene: FrostedClock_317 Start: 187435, Stop: 187749, Start Num: 29

Candidate Starts for FrostedClock_317:

(Start: 29 @187435 has 14 MA's), (46, 187516),

Gene: FrostedClock_32 Start: 13635, Stop: 13949, Start Num: 29

Candidate Starts for FrostedClock_32:

(Start: 29 @13635 has 14 MA's), (46, 13716),

Gene: Gilson_264 Start: 126168, Stop: 126503, Start Num: 23

Candidate Starts for Gilson_264:

(Start: 23 @126168 has 13 MA's), (30, 126186), (41, 126228), (51, 126303), (52, 126309), (53, 126318), (61, 126372), (65, 126408), (80, 126468),

Gene: GoldenEssence_16 Start: 7886, Stop: 8194, Start Num: 29

Candidate Starts for GoldenEssence_16:

(Start: 29 @7886 has 14 MA's), (46, 7967), (54, 8024), (60, 8069), (75, 8150),

Gene: GoldenEssence_297 Start: 178439, Stop: 178747, Start Num: 29

Candidate Starts for GoldenEssence_297:

(Start: 29 @178439 has 14 MA's), (46, 178520), (54, 178577), (60, 178622), (75, 178703),

Gene: Grayson_268 Start: 123424, Stop: 123077, Start Num: 33

Candidate Starts for Grayson_268:

(Start: 33 @123424 has 2 MA's), (38, 123403), (41, 123391), (45, 123355), (52, 123307), (57, 123280), (58, 123262), (62, 123235), (71, 123175), (72, 123172), (78, 123145), (86, 123115), (89, 123085), (90, 123082),

Gene: Grumio_82 Start: 52016, Stop: 52318, Start Num: 32

Candidate Starts for Grumio_82:

(17, 51974), (20, 51980), (Start: 32 @52016 has 7 MA's), (34, 52022), (35, 52025), (50, 52106), (55, 52148), (62, 52196), (81, 52295),

Gene: Jflix2_39 Start: 31204, Stop: 30860, Start Num: 27

Candidate Starts for Jflix2_39:

(19, 31225), (24, 31213), (Start: 27 @31204 has 3 MA's), (40, 31159), (76, 30943), (91, 30868),

Gene: Jollymon_81 Start: 52538, Stop: 52840, Start Num: 32

Candidate Starts for Jollymon_81:

(17, 52496), (20, 52502), (Start: 32 @52538 has 7 MA's), (34, 52544), (35, 52547), (50, 52628), (55, 52670), (62, 52718), (81, 52817),

Gene: JustBecause_331 Start: 175882, Stop: 175484, Start Num: 16

Candidate Starts for JustBecause_331:

(10, 176047), (13, 175933), (Start: 16 @175882 has 9 MA's), (Start: 32 @175828 has 7 MA's), (61, 175660), (62, 175657), (82, 175555), (84, 175546),

Gene: Karp_265 Start: 128234, Stop: 128575, Start Num: 23

Candidate Starts for Karp_265:

(Start: 23 @128234 has 13 MA's), (30, 128255), (52, 128381), (53, 128390), (63, 128459), (65, 128480), (80, 128540),

Gene: Kela_329 Start: 176783, Stop: 176385, Start Num: 16

Candidate Starts for Kela_329:

(10, 176948), (13, 176834), (Start: 16 @176783 has 9 MA's), (Start: 32 @176729 has 7 MA's), (61, 176561), (62, 176558), (82, 176456), (84, 176447),

Gene: Kenrey_270 Start: 127380, Stop: 127718, Start Num: 23

Candidate Starts for Kenrey_270:

(Start: 23 @127380 has 13 MA's), (30, 127398), (41, 127440), (49, 127497), (51, 127521), (52, 127527), (53, 127536), (61, 127590),

Gene: KingstonB_80 Start: 51949, Stop: 52251, Start Num: 32

Candidate Starts for KingstonB_80:

(8, 51643), (17, 51907), (20, 51913), (Start: 32 @51949 has 7 MA's), (34, 51955), (35, 51958), (50, 52039), (51, 52060), (55, 52081), (81, 52228),

Gene: Kradal_329 Start: 178759, Stop: 178412, Start Num: 16

Candidate Starts for Kradal_329:

(Start: 16 @178759 has 9 MA's), (36, 178705), (44, 178663), (58, 178585), (61, 178567), (73, 178498), (79, 178471),

Gene: Madraxi_45 Start: 34410, Stop: 34072, Start Num: 27

Candidate Starts for Madraxi_45:

(22, 34419), (Start: 27 @34410 has 3 MA's), (39, 34374), (40, 34368), (91, 34080),

Gene: Makar_84 Start: 52272, Stop: 52577, Start Num: 32

Candidate Starts for Makar_84:

(17, 52230), (20, 52236), (Start: 32 @52272 has 7 MA's), (34, 52278), (43, 52329), (47, 52353), (52, 52392), (58, 52431), (62, 52455), (68, 52503), (81, 52554),

Gene: Maupel_270 Start: 125361, Stop: 125696, Start Num: 23

Candidate Starts for Maupel_270:

(Start: 23 @125361 has 13 MA's), (30, 125379), (41, 125421), (51, 125496), (52, 125502), (53, 125511), (61, 125565), (65, 125601), (80, 125661),

Gene: MeganTheeKilla_266 Start: 125979, Stop: 126317, Start Num: 23

Candidate Starts for MeganTheeKilla_266:

(Start: 23 @125979 has 13 MA's), (25, 125982), (30, 125997), (41, 126039), (49, 126096), (51, 126120), (52, 126126), (53, 126135), (61, 126189),

Gene: Mimi_30 Start: 13529, Stop: 13843, Start Num: 29

Candidate Starts for Mimi_30:

(Start: 29 @13529 has 14 MA's), (46, 13610), (64, 13739), (67, 13760), (78, 13808),

Gene: Mimi_315 Start: 186189, Stop: 186503, Start Num: 29

Candidate Starts for Mimi_315:

(Start: 29 @186189 has 14 MA's), (46, 186270), (64, 186399), (67, 186420), (78, 186468),

Gene: Moab_264 Start: 127015, Stop: 127356, Start Num: 23

Candidate Starts for Moab_264:

(Start: 23 @127015 has 13 MA's), (30, 127036), (37, 127063), (42, 127081), (49, 127132), (52, 127162), (53, 127171), (61, 127225), (63, 127240), (65, 127261), (80, 127321), (85, 127339),

Gene: Muntaha_265 Start: 126426, Stop: 126731, Start Num: 26

Candidate Starts for Muntaha_265:

(Start: 26 @126426 has 2 MA's), (37, 126456), (51, 126537), (53, 126552), (61, 126594), (70, 126651), (77, 126672), (88, 126720),

Gene: Muntaha_2 Start: 749, Stop: 1054, Start Num: 26

Candidate Starts for Muntaha_2:

(Start: 26 @749 has 2 MA's), (37, 779), (51, 860), (53, 875), (61, 917), (70, 974), (77, 995), (88, 1043),

Gene: Nirvana_362 Start: 195822, Stop: 195472, Start Num: 16

Candidate Starts for Nirvana_362:

(13, 195873), (Start: 16 @195822 has 9 MA's), (36, 195765), (44, 195723), (58, 195645), (70, 195567), (73, 195558),

Gene: Panchaali_23 Start: 9758, Stop: 10060, Start Num: 29

Candidate Starts for Panchaali_23:

(Start: 29 @9758 has 14 MA's), (69, 9998), (74, 10013), (83, 10052),

Gene: Panchaali_310 Start: 188816, Stop: 189118, Start Num: 29

Candidate Starts for Panchaali_310:

(Start: 29 @188816 has 14 MA's), (69, 189056), (74, 189071), (83, 189110),

Gene: Patbob_29 Start: 13693, Stop: 14007, Start Num: 29

Candidate Starts for Patbob_29:

(Start: 29 @13693 has 14 MA's), (46, 13774), (64, 13903), (67, 13924), (78, 13972),

Gene: Patbob_315 Start: 189152, Stop: 189466, Start Num: 29

Candidate Starts for Patbob_315:

(Start: 29 @189152 has 14 MA's), (46, 189233), (64, 189362), (67, 189383), (78, 189431),

Gene: Patelgo_267 Start: 127948, Stop: 128289, Start Num: 23

Candidate Starts for Patelgo_267:

(Start: 23 @127948 has 13 MA's), (30, 127969), (37, 127996), (42, 128014), (49, 128065), (52, 128095), (53, 128104), (61, 128158), (63, 128173), (65, 128194), (80, 128254), (85, 128272),

Gene: Peregrin_267 Start: 125091, Stop: 124744, Start Num: 33

Candidate Starts for Peregrin_267:

(21, 125130), (Start: 33 @125091 has 2 MA's), (38, 125070), (41, 125058), (45, 125022), (52, 124974), (57, 124947), (58, 124929), (62, 124902), (71, 124842), (72, 124839), (78, 124812), (86, 124782), (89, 124752), (90, 124749),

Gene: Phrampa_309 Start: 187978, Stop: 188286, Start Num: 29

Candidate Starts for Phrampa_309:

(Start: 29 @187978 has 14 MA's), (46, 188059), (64, 188188), (67, 188209), (75, 188242),

Gene: Phrampa_25 Start: 11607, Stop: 11915, Start Num: 29

Candidate Starts for Phrampa_25:

(Start: 29 @11607 has 14 MA's), (46, 11688), (64, 11817), (67, 11838), (75, 11871),

Gene: Purpicious_81 Start: 51781, Stop: 52083, Start Num: 32

Candidate Starts for Purpicious_81:

(17, 51739), (20, 51745), (Start: 32 @51781 has 7 MA's), (34, 51787), (35, 51790), (50, 51871), (55, 51913), (62, 51961), (81, 52060),

Gene: Quantum_327 Start: 178753, Stop: 178406, Start Num: 16

Candidate Starts for Quantum_327:

(Start: 16 @178753 has 9 MA's), (36, 178699), (44, 178657), (58, 178579), (61, 178561), (73, 178492), (79, 178465),

Gene: REQ1_09 Start: 2994, Stop: 2656, Start Num: 27

Candidate Starts for REQ1_09:

(15, 3042), (Start: 27 @2994 has 3 MA's), (39, 2958), (76, 2736), (80, 2715), (91, 2664),

Gene: Racecar_31 Start: 14121, Stop: 14435, Start Num: 29

Candidate Starts for Racecar_31:

(Start: 29 @14121 has 14 MA's), (46, 14202),

Gene: Racecar_320 Start: 187830, Stop: 188144, Start Num: 29

Candidate Starts for Racecar_320:

(Start: 29 @187830 has 14 MA's), (46, 187911),

Gene: SFuller_40 Start: 31566, Stop: 31222, Start Num: 27

Candidate Starts for SFuller_40:

(2, 32073), (3, 32040), (7, 31905), (11, 31668), (Start: 27 @31566 has 3 MA's), (40, 31521), (76, 31305), (91, 31230),

Gene: Sarkar_327 Start: 178803, Stop: 178456, Start Num: 16

Candidate Starts for Sarkar_327:

(Start: 16 @178803 has 9 MA's), (36, 178749), (44, 178707), (58, 178629), (61, 178611), (73, 178542), (79, 178515),

Gene: Satis_329 Start: 179094, Stop: 178747, Start Num: 16

Candidate Starts for Satis_329:

(Start: 16 @179094 has 9 MA's), (36, 179040), (44, 178998), (58, 178920), (61, 178902), (73, 178833), (79, 178806),

Gene: Soos_77 Start: 51742, Stop: 52044, Start Num: 32

Candidate Starts for Soos_77:

(17, 51700), (20, 51706), (Start: 32 @51742 has 7 MA's), (34, 51748), (35, 51751), (50, 51832), (55, 51874), (62, 51922), (81, 52021),

Gene: SparkleGoddess_264 Start: 127503, Stop: 127844, Start Num: 23

Candidate Starts for SparkleGoddess_264:

(Start: 23 @127503 has 13 MA's), (30, 127524), (52, 127650), (53, 127659), (63, 127728), (65, 127749), (80, 127809),

Gene: Stigma_262 Start: 127216, Stop: 127557, Start Num: 23

Candidate Starts for Stigma_262:

(Start: 23 @127216 has 13 MA's), (30, 127237), (52, 127363), (53, 127372), (65, 127462), (80, 127522),

Gene: Stillion_81 Start: 52663, Stop: 52965, Start Num: 32

Candidate Starts for Stillion_81:

(17, 52621), (20, 52627), (Start: 32 @52663 has 7 MA's), (34, 52669), (35, 52672), (50, 52753), (51, 52774), (55, 52795), (81, 52942),

Gene: Sting_80 Start: 52181, Stop: 52483, Start Num: 32

Candidate Starts for Sting_80:

(17, 52139), (20, 52145), (Start: 32 @52181 has 7 MA's), (34, 52187), (35, 52190), (50, 52271), (55, 52313), (62, 52361), (81, 52460),

Gene: Talia1610_30 Start: 13543, Stop: 13857, Start Num: 29

Candidate Starts for Talia1610_30:

(Start: 29 @13543 has 14 MA's), (46, 13624),

Gene: Talia1610_316 Start: 188015, Stop: 188329, Start Num: 29

Candidate Starts for Talia1610_316:

(Start: 29 @188015 has 14 MA's), (46, 188096),

Gene: Wakanda_2 Start: 866, Stop: 1201, Start Num: 18

Candidate Starts for Wakanda_2:

(Start: 18 @866 has 2 MA's), (28, 899), (37, 929), (41, 944), (70, 1121), (77, 1142), (88, 1190),

Gene: Wakanda_261 Start: 125707, Stop: 126042, Start Num: 18

Candidate Starts for Wakanda_261:

(Start: 18 @125707 has 2 MA's), (28, 125740), (37, 125770), (41, 125785), (70, 125962), (77, 125983), (88, 126031),

Gene: Weasels2_270 Start: 126108, Stop: 125791, Start Num: 31

Candidate Starts for Weasels2_270:

(Start: 31 @126108 has 1 MA's), (48, 126018), (52, 125985), (56, 125964), (58, 125940), (61, 125916), (76, 125838),

Gene: Westy_266 Start: 128040, Stop: 128381, Start Num: 23

Candidate Starts for Westy_266:

(Start: 23 @128040 has 13 MA's), (30, 128061), (52, 128187), (53, 128196), (63, 128265), (65, 128286), (66, 128295), (69, 128304), (80, 128346),