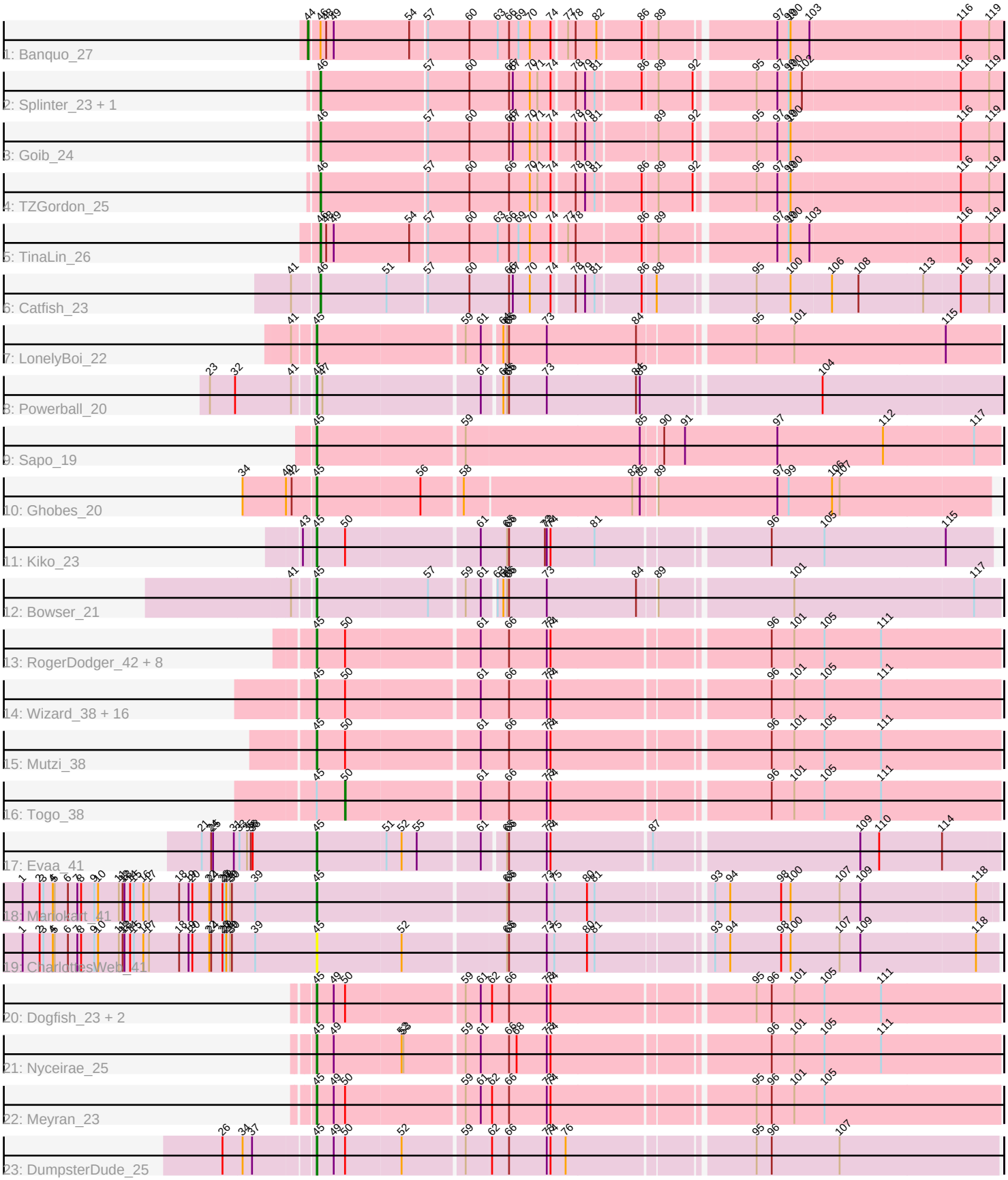
Pham 1939


1: Banquo_27
2: Splinter_23 + 1
3: Goib_24
4: TZGordon_25
5: TinaLin_26
6: Catfish_23
7: LonelyBoi_22
8: Powerball_20
9: Sapo_19
10: Ghobes_20
11: Kiko_23
12: Bowser_21
13: RogerDodger_42 + 8
14: Wizard_38 + 16
15: Mutzi_38
16: Togo_38
17: Evaa_41
18: Manokalt_41
19: CharlottesWeb_41
20: Dogfish_23 + 2
21: Nyceirae_25
22: Meyran_23
23: DumpsterDude_25

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 1939 Report

This analysis was run 04/28/24 on database version 559.

Pham number 1939 has 50 members, 4 are drafts.

Phages represented in each track:
• Track 1 : Banquo_27
• Track 2 : Splinter_23, Vendetta_23
• Track 3 : Goib_24
• Track 4 : TZGordon_25
• Track 5 : TinaLin_26
• Track 6 : Catfish_23
• Track 7 : LonelyBoi_22
• Track 8 : Powerball_20
• Track 9 : Sapo_19
• Track 10 : Ghobes_20
• Track 11 : Kiko_23
• Track 12 : Bowser_21
• Track 13 : RogerDodger_42, Arri_42, Barb_41, Fugax_42, Shinji_39, PinkCoffee_41, VanDeWege_42, ClamChowder_41, Valary_41
• Track 14 : Wizard_38, Nubi_39, Fireball_40, Jambalaya_39, Danyall_41, Twister6_41, SmokingBunny_39, Salvador_38, KimmyK_40, Gezellig_40, Savbucketdawg_39, Phlop_38, Evamon_38, Portcullis_40, Halo3_39, TillyBobJoe_39, PullumCavea_38
• Track 15 : Mutzi_38
• Track 16 : Togo_38
• Track 17 : Evaa_41
• Track 18 : Mariokart_41
• Track 19 : CharlottesWeb_41
• Track 20 : Dogfish_23, Phishy_24, Vordorf_24
• Track 21 : Nyceirae_25
• Track 22 : Meyran_23
• Track 23 : DumpsterDude_25

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

The start number called the most often in the published annotations is 45, it was called in 38 of the 46 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Arri_42, Barb_41, Bowser_21, CharlottesWeb_41, ClamChowder_41, Danyall_41, Dogfish_23, DumpsterDude_25, Evaa_41, Evamon_38, Fireball_40, Fugax_42, Gezellig_40, Ghobes_20, Halo3_39, Jambalaya_39, Kiko_23, KimmyK_40, LonelyBoi_22, Mariokart_41, Meyran_23, Mutzi_38, Nubi_39, Nyceirae_25, Phishy_24, Phlop_38, PinkCoffee_41, Portcullis_40, Powerball_20, PullumCavea_38, RogerDodger_42, Salvador_38, Sapo_19, Savbucketdawg_39, Shinji_39, SmokingBunny_39, TillyBobJoe_39, Twister6_41, Valary_41, VanDeWege_42, Vordorf_24, Wizard_38,

Genes that have the "Most Annotated" start but do not call it:
• Togo_38,

Genes that do not have the "Most Annotated" start:
• Banquo_27, Catfish_23, Goib_24, Splinter_23, TZGordon_25, TinaLin_26, Vendetta_23,

Summary by start number:

Start 44:
• Found in 1 of 50 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 46
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Banquo_27 (CU1),

Start 45:
• Found in 43 of 50 (86.0%) of genes in pham
• Manual Annotations of this start: 38 of 46
• Called 97.7% of time when present
• Phage (with cluster) where this start called: Arri_42 (DC1), Barb_41 (DC1), Bowser_21 (DB), CharlottesWeb_41 (DR), ClamChowder_41 (DC1), Danyall_41 (DC1), Dogfish_23 (DT), DumpsterDude_25 (DW), Evaa_41 (DR), Evamon_38 (DC1), Fireball_40 (DC1), Fugax_42 (DC1), Gezellig_40 (DC1), Ghobes_20 (DA), Halo3_39 (DC1), Jambalaya_39 (DC1), Kiko_23 (DB), KimmyK_40 (DC1), LonelyBoi_22 (CY), Mariokart_41 (DR), Meyran_23 (DT), Mutzi_38 (DC1), Nubi_39 (DC1), Nyceirae_25 (DT), Phishy_24 (DT), Phlop_38 (DC1), PinkCoffee_41 (DC1), Portcullis_40 (DC1), Powerball_20 (CZ4), PullumCavea_38 (DC1), RogerDodger_42 (DC1), Salvador_38 (DC1), Sapo_19 (DA), Savbucketdawg_39 (DC1), Shinji_39 (DC1), SmokingBunny_39 (DC1), TillyBobJoe_39 (DC1), Twister6_41 (DC1), Valary_41 (DC1), VanDeWege_42 (DC1), Vordorf_24 (DT), Wizard_38 (DC1),

Start 46:
• Found in 7 of 50 (14.0%) of genes in pham
• Manual Annotations of this start: 6 of 46
• Called 85.7% of time when present
• Phage (with cluster) where this start called: Catfish_23 (CU5), Goib_24 (CU1), Splinter_23 (CU1), TZGordon_25 (CU1), TinaLin_26 (CU1), Vendetta_23 (CU1),

Start 50:
• Found in 34 of 50 (68.0%) of genes in pham
• Manual Annotations of this start: 1 of 46
• Called 2.9% of time when present
• Phage (with cluster) where this start called: Togo_38 (DC1),

Summary by clusters:

There are 10 clusters represented in this pham: CU5, CU1, DB, CZ4, DA, CY, DW, DT, DR, DC1,

Info for manual annotations of cluster CU1:
•Start number 44 was manually annotated 1 time for cluster CU1.
•Start number 46 was manually annotated 5 times for cluster CU1.

Info for manual annotations of cluster CU5:
•Start number 46 was manually annotated 1 time for cluster CU5.

Info for manual annotations of cluster CY:
•Start number 45 was manually annotated 1 time for cluster CY.

Info for manual annotations of cluster CZ4:
•Start number 45 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster DA:
•Start number 45 was manually annotated 2 times for cluster DA.

Info for manual annotations of cluster DB:
•Start number 45 was manually annotated 2 times for cluster DB.

Info for manual annotations of cluster DC1:
•Start number 45 was manually annotated 25 times for cluster DC1.
•Start number 50 was manually annotated 1 time for cluster DC1.

Info for manual annotations of cluster DR:
•Start number 45 was manually annotated 2 times for cluster DR.

Info for manual annotations of cluster DT:
•Start number 45 was manually annotated 4 times for cluster DT.

Info for manual annotations of cluster DW:
•Start number 45 was manually annotated 1 time for cluster DW.

Gene Information:

Gene: Arri_42 Start: 33965, Stop: 35005, Start Num: 45
Candidate Starts for Arri_42:
(Start: 45 @33965 has 38 MA's), (Start: 50 @34010 has 1 MA's), (61, 34214), (66, 34256), (73, 34316), (74, 34322), (96, 34643), (101, 34679), (105, 34727), (111, 34817),

Gene: Banquo_27 Start: 19155, Stop: 20201, Start Num: 44
Candidate Starts for Banquo_27:
(Start: 44 @19155 has 1 MA's), (Start: 46 @19170 has 6 MA's), (48, 19179), (49, 19191), (54, 19311), (57, 19335), (60, 19401), (63, 19446), (66, 19464), (69, 19479), (70, 19497), (74, 19530), (77, 19551), (78, 19563), (82, 19596), (86, 19662), (89, 19683), (97, 19851), (99, 19869), (100, 19872), (103, 19902), (116, 20133), (119, 20178),

Gene: Barb_41 Start: 33982, Stop: 35022, Start Num: 45
Candidate Starts for Barb_41:
(Start: 45 @33982 has 38 MA's), (Start: 50 @34027 has 1 MA's), (61, 34231), (66, 34273), (73, 34333), (74, 34339), (96, 34660), (101, 34696), (105, 34744), (111, 34834),

Gene: Bowser_21 Start: 18893, Stop: 19924, Start Num: 45
Candidate Starts for Bowser_21:
(41, 18863), (Start: 45 @18893 has 38 MA's), (57, 19067), (59, 19118), (61, 19142), (63, 19157), (64, 19166), (65, 19172), (66, 19175), (73, 19235), (84, 19376), (89, 19403), (101, 19601), (117, 19883),

Gene: Catfish_23 Start: 19814, Stop: 20845, Start Num: 46
Candidate Starts for Catfish_23:
(41, 19772), (Start: 46 @19814 has 6 MA's), (51, 19919), (57, 19979), (60, 20045), (66, 20108), (67, 20114), (70, 20141), (74, 20174), (78, 20207), (79, 20222), (81, 20237), (86, 20306), (88, 20324), (95, 20462), (100, 20516), (106, 20579), (108, 20621), (113, 20720), (116, 20777), (119, 20822),

Gene: CharlottesWeb_41 Start: 34058, Stop: 35095, Start Num: 45
Candidate Starts for CharlottesWeb_41:
(1, 33593), (2, 33620), (3, 33626), (4, 33641), (5, 33644), (6, 33665), (7, 33680), (8, 33686), (9, 33707), (10, 33713), (11, 33746), (12, 33752), (13, 33755), (14, 33764), (15, 33770), (16, 33785), (17, 33794), (18, 33842), (19, 33857), (20, 33863), (22, 33890), (24, 33893), (26, 33911), (27, 33914), (28, 33917), (29, 33923), (30, 33926), (39, 33962), (Start: 45 @34058 has 38 MA's), (52, 34190), (65, 34346), (66, 34349), (73, 34409), (75, 34421), (80, 34472), (81, 34484), (93, 34649), (94, 34673), (98, 34754), (100, 34769), (107, 34847), (109, 34880), (118, 35060),

Gene: ClamChowder_41 Start: 33982, Stop: 35022, Start Num: 45
Candidate Starts for ClamChowder_41:
(Start: 45 @33982 has 38 MA's), (Start: 50 @34027 has 1 MA's), (61, 34231), (66, 34273), (73, 34333), (74, 34339), (96, 34660), (101, 34696), (105, 34744), (111, 34834),

Gene: Danyall_41 Start: 33785, Stop: 34825, Start Num: 45
Candidate Starts for Danyall_41:
(Start: 45 @33785 has 38 MA's), (Start: 50 @33830 has 1 MA's), (61, 34034), (66, 34076), (73, 34136), (74, 34142), (96, 34463), (101, 34499), (105, 34547), (111, 34637),

Gene: Dogfish_23 Start: 20217, Stop: 21257, Start Num: 45
Candidate Starts for Dogfish_23:
(Start: 45 @20217 has 38 MA's), (49, 20244), (Start: 50 @20262 has 1 MA's), (59, 20442), (61, 20466), (62, 20481), (66, 20508), (73, 20568), (74, 20574), (95, 20871), (96, 20895), (101, 20931), (105, 20979), (111, 21069),

Gene: DumpsterDude_25 Start: 23551, Stop: 24588, Start Num: 45
Candidate Starts for DumpsterDude_25:
(26, 23416), (34, 23446), (37, 23461), (Start: 45 @23551 has 38 MA's), (49, 23578), (Start: 50 @23596 has 1 MA's), (52, 23683), (59, 23776), (62, 23815), (66, 23842), (73, 23902), (74, 23908), (76, 23932), (95, 24205), (96, 24229), (107, 24337),

Gene: Evaa_41 Start: 35093, Stop: 36121, Start Num: 45
Candidate Starts for Evaa_41:
(21, 34910), (24, 34925), (25, 34928), (31, 34961), (33, 34970), (35, 34982), (36, 34988), (38, 34991), (Start: 45 @35093 has 38 MA's), (51, 35201), (52, 35225), (55, 35249), (61, 35342), (65, 35372), (66, 35375), (73, 35435), (74, 35441), (87, 35594), (109, 35903), (110, 35933), (114, 36032),

Gene: Evamon_38 Start: 33804, Stop: 34844, Start Num: 45
Candidate Starts for Evamon_38:
(Start: 45 @33804 has 38 MA's), (Start: 50 @33849 has 1 MA's), (61, 34053), (66, 34095), (73, 34155), (74, 34161), (96, 34482), (101, 34518), (105, 34566), (111, 34656),

Gene: Fireball_40 Start: 33927, Stop: 34967, Start Num: 45
Candidate Starts for Fireball_40:
(Start: 45 @33927 has 38 MA's), (Start: 50 @33972 has 1 MA's), (61, 34176), (66, 34218), (73, 34278), (74, 34284), (96, 34605), (101, 34641), (105, 34689), (111, 34779),

Gene: Fugax_42 Start: 33974, Stop: 35014, Start Num: 45
Candidate Starts for Fugax_42:
(Start: 45 @33974 has 38 MA's), (Start: 50 @34019 has 1 MA's), (61, 34223), (66, 34265), (73, 34325), (74, 34331), (96, 34652), (101, 34688), (105, 34736), (111, 34826),

Gene: Gezellig_40 Start: 33936, Stop: 34976, Start Num: 45
Candidate Starts for Gezellig_40:
(Start: 45 @33936 has 38 MA's), (Start: 50 @33981 has 1 MA's), (61, 34185), (66, 34227), (73, 34287), (74, 34293), (96, 34614), (101, 34650), (105, 34698), (111, 34788),

Gene: Ghobes_20 Start: 17505, Stop: 18545, Start Num: 45
Candidate Starts for Ghobes_20:
(34, 17394), (40, 17463), (42, 17472), (Start: 45 @17505 has 38 MA's), (56, 17667), (58, 17727), (83, 17988), (85, 18000), (89, 18021), (97, 18210), (99, 18228), (106, 18297), (107, 18309),

Gene: Goib_24 Start: 17824, Stop: 18855, Start Num: 46
Candidate Starts for Goib_24:
(Start: 46 @17824 has 6 MA's), (57, 17989), (60, 18055), (66, 18118), (67, 18124), (70, 18151), (71, 18163), (74, 18184), (78, 18217), (79, 18232), (81, 18247), (89, 18337), (92, 18391), (95, 18472), (97, 18505), (99, 18523), (100, 18526), (116, 18787), (119, 18832),

Gene: Halo3_39 Start: 34229, Stop: 35269, Start Num: 45
Candidate Starts for Halo3_39:
(Start: 45 @34229 has 38 MA's), (Start: 50 @34274 has 1 MA's), (61, 34478), (66, 34520), (73, 34580), (74, 34586), (96, 34907), (101, 34943), (105, 34991), (111, 35081),

Gene: Jambalaya_39 Start: 33583, Stop: 34623, Start Num: 45
Candidate Starts for Jambalaya_39:
(Start: 45 @33583 has 38 MA's), (Start: 50 @33628 has 1 MA's), (61, 33832), (66, 33874), (73, 33934), (74, 33940), (96, 34261), (101, 34297), (105, 34345), (111, 34435),

Gene: Kiko_23 Start: 19207, Stop: 20232, Start Num: 45
Candidate Starts for Kiko_23:
(43, 19189), (Start: 45 @19207 has 38 MA's), (Start: 50 @19252 has 1 MA's), (61, 19456), (65, 19495), (66, 19498), (72, 19555), (73, 19558), (74, 19564), (81, 19633), (96, 19885), (105, 19969), (115, 20158),

Gene: KimmyK_40 Start: 34518, Stop: 35558, Start Num: 45
Candidate Starts for KimmyK_40:
(Start: 45 @34518 has 38 MA's), (Start: 50 @34563 has 1 MA's), (61, 34767), (66, 34809), (73, 34869), (74, 34875), (96, 35196), (101, 35232), (105, 35280), (111, 35370),

Gene: LonelyBoi_22 Start: 19826, Stop: 20857, Start Num: 45

Candidate Starts for LonelyBoi_22:
(41, 19796), (Start: 45 @19826 has 38 MA's), (59, 20051), (61, 20075), (64, 20099), (65, 20105), (66, 20108), (73, 20168), (84, 20309), (95, 20474), (101, 20534), (115, 20771),

Gene: Mariokart_41 Start: 34075, Stop: 35109, Start Num: 45
Candidate Starts for Mariokart_41:
(1, 33610), (2, 33637), (3, 33643), (4, 33658), (5, 33661), (6, 33682), (7, 33697), (8, 33703), (9, 33724), (10, 33730), (11, 33763), (12, 33769), (13, 33772), (14, 33781), (15, 33787), (16, 33802), (17, 33811), (18, 33859), (19, 33874), (20, 33880), (22, 33907), (24, 33910), (26, 33928), (27, 33931), (28, 33934), (29, 33940), (30, 33943), (39, 33979), (Start: 45 @34075 has 38 MA's), (65, 34363), (66, 34366), (73, 34426), (75, 34438), (80, 34489), (81, 34501), (93, 34666), (94, 34690), (98, 34771), (100, 34786), (107, 34864), (109, 34897), (118, 35077),

Gene: Meyran_23 Start: 20948, Stop: 21988, Start Num: 45
Candidate Starts for Meyran_23:
(Start: 45 @20948 has 38 MA's), (49, 20975), (Start: 50 @20993 has 1 MA's), (59, 21173), (61, 21197), (62, 21212), (66, 21239), (73, 21299), (74, 21305), (95, 21602), (96, 21626), (101, 21662), (105, 21710),

Gene: Mutzi_38 Start: 34662, Stop: 35702, Start Num: 45
Candidate Starts for Mutzi_38:
(Start: 45 @34662 has 38 MA's), (Start: 50 @34707 has 1 MA's), (61, 34911), (66, 34953), (73, 35013), (74, 35019), (96, 35340), (101, 35376), (105, 35424), (111, 35514),

Gene: Nubi_39 Start: 33807, Stop: 34847, Start Num: 45
Candidate Starts for Nubi_39:
(Start: 45 @33807 has 38 MA's), (Start: 50 @33852 has 1 MA's), (61, 34056), (66, 34098), (73, 34158), (74, 34164), (96, 34485), (101, 34521), (105, 34569), (111, 34659),

Gene: Nyceirae_25 Start: 20812, Stop: 21852, Start Num: 45
Candidate Starts for Nyceirae_25:
(Start: 45 @20812 has 38 MA's), (49, 20839), (52, 20944), (53, 20947), (59, 21037), (61, 21061), (66, 21103), (68, 21115), (73, 21163), (74, 21169), (96, 21490), (101, 21526), (105, 21574), (111, 21664),

Gene: Phishy_24 Start: 20814, Stop: 21854, Start Num: 45
Candidate Starts for Phishy_24:
(Start: 45 @20814 has 38 MA's), (49, 20841), (Start: 50 @20859 has 1 MA's), (59, 21039), (61, 21063), (62, 21078), (66, 21105), (73, 21165), (74, 21171), (95, 21468), (96, 21492), (101, 21528), (105, 21576), (111, 21666),

Gene: Phlop_38 Start: 33888, Stop: 34928, Start Num: 45
Candidate Starts for Phlop_38:
(Start: 45 @33888 has 38 MA's), (Start: 50 @33933 has 1 MA's), (61, 34137), (66, 34179), (73, 34239), (74, 34245), (96, 34566), (101, 34602), (105, 34650), (111, 34740),

Gene: PinkCoffee_41 Start: 33991, Stop: 35031, Start Num: 45
Candidate Starts for PinkCoffee_41:
(Start: 45 @33991 has 38 MA's), (Start: 50 @34036 has 1 MA's), (61, 34240), (66, 34282), (73, 34342), (74, 34348), (96, 34669), (101, 34705), (105, 34753), (111, 34843),

Gene: Portcullis_40 Start: 33304, Stop: 34344, Start Num: 45
Candidate Starts for Portcullis_40:

(Start: 45 @33304 has 38 MA's), (Start: 50 @33349 has 1 MA's), (61, 33553), (66, 33595), (73, 33655), (74, 33661), (96, 33982), (101, 34018), (105, 34066), (111, 34156),

Gene: Powerball_20 Start: 18486, Stop: 19532, Start Num: 45
Candidate Starts for Powerball_20:
(23, 18330), (32, 18369), (41, 18456), (Start: 45 @18486 has 38 MA's), (47, 18495), (61, 18735), (64, 18759), (65, 18765), (66, 18768), (73, 18828), (84, 18969), (85, 18975), (104, 19248),

Gene: PullumCavea_38 Start: 33888, Stop: 34928, Start Num: 45
Candidate Starts for PullumCavea_38:
(Start: 45 @33888 has 38 MA's), (Start: 50 @33933 has 1 MA's), (61, 34137), (66, 34179), (73, 34239), (74, 34245), (96, 34566), (101, 34602), (105, 34650), (111, 34740),

Gene: RogerDodger_42 Start: 34133, Stop: 35173, Start Num: 45
Candidate Starts for RogerDodger_42:
(Start: 45 @34133 has 38 MA's), (Start: 50 @34178 has 1 MA's), (61, 34382), (66, 34424), (73, 34484), (74, 34490), (96, 34811), (101, 34847), (105, 34895), (111, 34985),

Gene: Salvador_38 Start: 33802, Stop: 34842, Start Num: 45
Candidate Starts for Salvador_38:
(Start: 45 @33802 has 38 MA's), (Start: 50 @33847 has 1 MA's), (61, 34051), (66, 34093), (73, 34153), (74, 34159), (96, 34480), (101, 34516), (105, 34564), (111, 34654),

Gene: Sapo_19 Start: 17440, Stop: 18498, Start Num: 45
Candidate Starts for Sapo_19:
(Start: 45 @17440 has 38 MA's), (59, 17665), (85, 17938), (90, 17968), (91, 18001), (97, 18148), (112, 18316), (117, 18457),

Gene: Savbucketdawg_39 Start: 33583, Stop: 34623, Start Num: 45
Candidate Starts for Savbucketdawg_39:
(Start: 45 @33583 has 38 MA's), (Start: 50 @33628 has 1 MA's), (61, 33832), (66, 33874), (73, 33934), (74, 33940), (96, 34261), (101, 34297), (105, 34345), (111, 34435),

Gene: Shinji_39 Start: 33244, Stop: 34284, Start Num: 45
Candidate Starts for Shinji_39:
(Start: 45 @33244 has 38 MA's), (Start: 50 @33289 has 1 MA's), (61, 33493), (66, 33535), (73, 33595), (74, 33601), (96, 33922), (101, 33958), (105, 34006), (111, 34096),

Gene: SmokingBunny_39 Start: 33793, Stop: 34833, Start Num: 45
Candidate Starts for SmokingBunny_39:
(Start: 45 @33793 has 38 MA's), (Start: 50 @33838 has 1 MA's), (61, 34042), (66, 34084), (73, 34144), (74, 34150), (96, 34471), (101, 34507), (105, 34555), (111, 34645),

Gene: Splinter_23 Start: 17824, Stop: 18855, Start Num: 46
Candidate Starts for Splinter_23:
(Start: 46 @17824 has 6 MA's), (57, 17989), (60, 18055), (66, 18118), (67, 18124), (70, 18151), (71, 18163), (74, 18184), (78, 18217), (79, 18232), (81, 18247), (86, 18316), (89, 18337), (92, 18391), (95, 18472), (97, 18505), (99, 18523), (100, 18526), (102, 18544), (116, 18787), (119, 18832),

Gene: TZGordon_25 Start: 17963, Stop: 18994, Start Num: 46
Candidate Starts for TZGordon_25:
(Start: 46 @17963 has 6 MA's), (57, 18128), (60, 18194), (66, 18257), (70, 18290), (71, 18302), (74, 18323), (78, 18356), (79, 18371), (81, 18386), (86, 18455), (89, 18476), (92, 18530), (95, 18611), (97,

18644), (99, 18662), (100, 18665), (116, 18926), (119, 18971),

Gene: TillyBobJoe_39 Start: 33597, Stop: 34637, Start Num: 45
Candidate Starts for TillyBobJoe_39:
(Start: 45 @33597 has 38 MA's), (Start: 50 @33642 has 1 MA's), (61, 33846), (66, 33888), (73, 33948), (74, 33954), (96, 34275), (101, 34311), (105, 34359), (111, 34449),

Gene: TinaLin_26 Start: 18794, Stop: 19825, Start Num: 46
Candidate Starts for TinaLin_26:
(Start: 46 @18794 has 6 MA's), (48, 18803), (49, 18815), (54, 18935), (57, 18959), (60, 19025), (63, 19070), (66, 19088), (69, 19103), (70, 19121), (74, 19154), (77, 19175), (78, 19187), (86, 19286), (89, 19307), (97, 19475), (99, 19493), (100, 19496), (103, 19526), (116, 19757), (119, 19802),

Gene: Togo_38 Start: 33838, Stop: 34833, Start Num: 50
Candidate Starts for Togo_38:
(Start: 45 @33793 has 38 MA's), (Start: 50 @33838 has 1 MA's), (61, 34042), (66, 34084), (73, 34144), (74, 34150), (96, 34471), (101, 34507), (105, 34555), (111, 34645),

Gene: Twister6_41 Start: 33696, Stop: 34736, Start Num: 45
Candidate Starts for Twister6_41:
(Start: 45 @33696 has 38 MA's), (Start: 50 @33741 has 1 MA's), (61, 33945), (66, 33987), (73, 34047), (74, 34053), (96, 34374), (101, 34410), (105, 34458), (111, 34548),

Gene: Valary_41 Start: 34738, Stop: 35778, Start Num: 45
Candidate Starts for Valary_41:
(Start: 45 @34738 has 38 MA's), (Start: 50 @34783 has 1 MA's), (61, 34987), (66, 35029), (73, 35089), (74, 35095), (96, 35416), (101, 35452), (105, 35500), (111, 35590),

Gene: VanDeWege_42 Start: 34030, Stop: 35070, Start Num: 45
Candidate Starts for VanDeWege_42:
(Start: 45 @34030 has 38 MA's), (Start: 50 @34075 has 1 MA's), (61, 34279), (66, 34321), (73, 34381), (74, 34387), (96, 34708), (101, 34744), (105, 34792), (111, 34882),

Gene: Vendetta_23 Start: 17824, Stop: 18855, Start Num: 46
Candidate Starts for Vendetta_23:
(Start: 46 @17824 has 6 MA's), (57, 17989), (60, 18055), (66, 18118), (67, 18124), (70, 18151), (71, 18163), (74, 18184), (78, 18217), (79, 18232), (81, 18247), (86, 18316), (89, 18337), (92, 18391), (95, 18472), (97, 18505), (99, 18523), (100, 18526), (102, 18544), (116, 18787), (119, 18832),

Gene: Vordorf_24 Start: 20415, Stop: 21455, Start Num: 45
Candidate Starts for Vordorf_24:
(Start: 45 @20415 has 38 MA's), (49, 20442), (Start: 50 @20460 has 1 MA's), (59, 20640), (61, 20664), (62, 20679), (66, 20706), (73, 20766), (74, 20772), (95, 21069), (96, 21093), (101, 21129), (105, 21177), (111, 21267),

Gene: Wizard_38 Start: 33936, Stop: 34976, Start Num: 45
Candidate Starts for Wizard_38:
(Start: 45 @33936 has 38 MA's), (Start: 50 @33981 has 1 MA's), (61, 34185), (66, 34227), (73, 34287), (74, 34293), (96, 34614), (101, 34650), (105, 34698), (111, 34788),