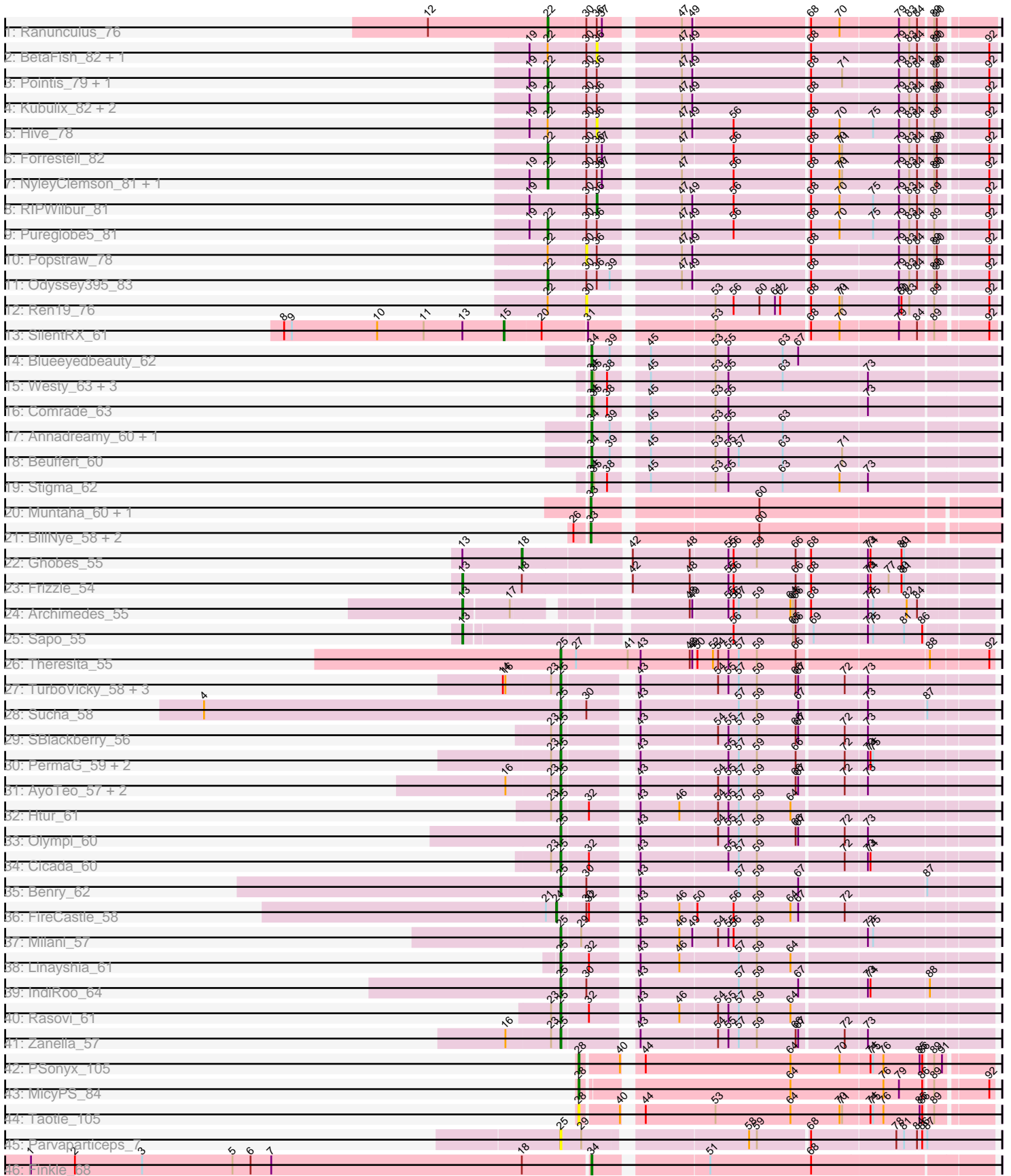


Pham 308603



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 308603 Report

This analysis was run 06/27/26 on database version 652.

Pham number 308603 has 65 members, 11 are drafts.

Phages represented in each track:

- Track 1 : Ranunculus_76
- Track 2 : BetaFish_82, PhuzzTulsa_80
- Track 3 : Pointis_79, DogYard_82
- Track 4 : Kubulix_82, MellowYellow_83, Beagle_83
- Track 5 : Hive_78
- Track 6 : Forrestell_82
- Track 7 : NyleyClemson_81, RazzB_82
- Track 8 : RIPWilbur_81
- Track 9 : Pureglobe5_81
- Track 10 : Popstraw_78
- Track 11 : Odyssey395_83
- Track 12 : Ren19_76
- Track 13 : SilentRX_61
- Track 14 : Blueeyedbeauty_62
- Track 15 : Westy_63, Karp_61, SparkleGoddess_63, Belfort_64
- Track 16 : Comrade_63
- Track 17 : Annadreamy_60, Limpid_59
- Track 18 : Beuffert_60
- Track 19 : Stigma_62
- Track 20 : Muntaha_60, Wakanda_59
- Track 21 : BillNye_58, Chaewon_63, Circinus_60
- Track 22 : Ghobes_55
- Track 23 : Frizzle_54
- Track 24 : Archimedes_55
- Track 25 : Sapo_55
- Track 26 : Theresita_55
- Track 27 : TurboVicky_58, Rootkit7_56, Alove_56, Jera_58
- Track 28 : Sucha_58
- Track 29 : SBlackberry_56
- Track 30 : PermaG_59, Johann_59, Goodman_59
- Track 31 : AyoTeo_57, Labella_58, Typher_58
- Track 32 : Htur_61
- Track 33 : Olympi_60
- Track 34 : Cicada_60
- Track 35 : Benry_62
- Track 36 : FireCastle_58
- Track 37 : Milani_57

- Track 38 : Linayshia_61
- Track 39 : IndiRoo_64
- Track 40 : Rasovi_61
- Track 41 : Zanella_57
- Track 42 : PSonyx_105
- Track 43 : MicyPS_84
- Track 44 : Taotie_105
- Track 45 : Parvarticeps_7
- Track 46 : Finkle_68

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

The start number called the most often in the published annotations is 25, it was called in 19 of the 54 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alove_56, AyoTeo_57, Benry_62, Cicada_60, Goodman_59, Htur_61, IndiRoo_64, Jera_58, Johann_59, Labella_58, Linayshia_61, Milani_57, Olympi_60, Parvarticeps_7, PermaG_59, Rasovi_61, Rootkit7_56, SBlackberry_56, Sucha_58, Theresita_55, TurboVicky_58, Typher_58, Zanella_57,

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

-

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

- Annadreamy_60, Archimedes_55, Beagle_83, Belfort_64, BetaFish_82, Beuffert_60, BillNye_58, Blueeyedbeauty_62, Chaewon_63, Circinus_60, Comrade_63, DogYard_82, Finkle_68, FireCastle_58, Forrestell_82, Frizzle_54, Ghobes_55, Hive_78, Karp_61, Kubulix_82, Limpid_59, MellowYellow_83, MicyPS_84, Muntaha_60, NyleyClemson_81, Odyssey395_83, PSonyx_105, PhuzzTulsa_80, Pointis_79, Popstraw_78, Pureglobe5_81, RIPWilbur_81, Ranunculus_76, RazzB_82, Ren19_76, Sapo_55, SilentRX_61, SparkleGoddess_63, Stigma_62, Taotie_105, Wakanda_59, Westy_63,

Summary by start number:

Start 13:

- Found in 5 of 65 (7.7%) of genes in pham
- Manual Annotations of this start: 3 of 54
- Called 60.0% of time when present
- Phage (with cluster) where this start called: Archimedes_55 (DA), Frizzle_54 (DA), Sapo_55 (DA),

Start 15:

- Found in 1 of 65 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SilentRX_61 (AP4),

Start 18:

- Found in 3 of 65 (4.6%) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Ghobes_55 (DA),

Start 22:

- Found in 16 of 65 (24.6%) of genes in pham
- Manual Annotations of this start: 11 of 54
- Called 68.8% of time when present
- Phage (with cluster) where this start called: Beagle_83 (AP2), DogYard_82 (AP2), Forrestell_82 (AP2), Kubulix_82 (AP2), MellowYellow_83 (AP2), NyleyClemson_81 (AP2), Odyssey395_83 (AP2), Pointis_79 (AP2), Pureglobe5_81 (AP2), Ranunculus_76 (AP), RazzB_82 (AP2),

Start 24:

- Found in 1 of 65 (1.5%) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: FireCastle_58 (EJ),

Start 25:

- Found in 23 of 65 (35.4%) of genes in pham
- Manual Annotations of this start: 19 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alove_56 (EJ), AyoTeo_57 (EJ), Benry_62 (EJ), Cicada_60 (EJ), Goodman_59 (EJ), Htur_61 (EJ), IndiRoo_64 (EJ), Jera_58 (EJ), Johann_59 (EJ), Labela_58 (EJ), Linayshia_61 (EJ), Milani_57 (EJ), Olympi_60 (EJ), Parvaparticeps_7 (UNK), PermaG_59 (EJ), Rasovi_61 (EJ), Rootkit7_56 (EJ), SBlackberry_56 (EJ), Sucha_58 (EJ), Theresita_55 (EA7), TurboVicky_58 (EJ), Typher_58 (EJ), Zanella_57 (EJ),

Start 28:

- Found in 3 of 65 (4.6%) of genes in pham
- Manual Annotations of this start: 2 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: MicyPS_84 (EQ), PSonyx_105 (EQ), Taotie_105 (EQ),

Start 30:

- Found in 21 of 65 (32.3%) of genes in pham
- No Manual Annotations of this start.
- Called 9.5% of time when present
- Phage (with cluster) where this start called: Popstraw_78 (AP2), Ren19_76 (AP2),

Start 33:

- Found in 5 of 65 (7.7%) of genes in pham
- Manual Annotations of this start: 4 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BillNye_58 (BK2), Chaewon_63 (BK2), Circinus_60 (BK2), Muntaha_60 (BK2), Wakanda_59 (BK2),

Start 34:

- Found in 11 of 65 (16.9%) of genes in pham

- Manual Annotations of this start: 11 of 54
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Annadreamy_60 (BK1), Belfort_64 (BK1), Beuffert_60 (BK1), Blueeyedbeauty_62 (BK1), Comrade_63 (BK1), Finkle_68 (singleton), Karp_61 (BK1), Limpid_59 (BK1), SparkleGoddess_63 (BK1), Stigma_62 (BK1), Westy_63 (BK1),

Start 36:

- Found in 16 of 65 (24.6%) of genes in pham
- Manual Annotations of this start: 1 of 54
- Called 25.0% of time when present
- Phage (with cluster) where this start called: BetaFish_82 (AP2), Hive_78 (AP2), PhuzzTulsa_80 (AP2), RIPWilbur_81 (AP2),

Summary by clusters:

There are 11 clusters represented in this pham: singleton, EJ, AP2, AP4, DA, AP, BK1, BK2, UNK, EQ, EA7,

Info for manual annotations of cluster AP:

- Start number 22 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP2:

- Start number 22 was manually annotated 10 times for cluster AP2.
- Start number 36 was manually annotated 1 time for cluster AP2.

Info for manual annotations of cluster AP4:

- Start number 15 was manually annotated 1 time for cluster AP4.

Info for manual annotations of cluster BK1:

- Start number 34 was manually annotated 10 times for cluster BK1.

Info for manual annotations of cluster BK2:

- Start number 33 was manually annotated 4 times for cluster BK2.

Info for manual annotations of cluster DA:

- Start number 13 was manually annotated 3 times for cluster DA.
- Start number 18 was manually annotated 1 time for cluster DA.

Info for manual annotations of cluster EA7:

- Start number 25 was manually annotated 1 time for cluster EA7.

Info for manual annotations of cluster EJ:

- Start number 24 was manually annotated 1 time for cluster EJ.
- Start number 25 was manually annotated 18 times for cluster EJ.

Info for manual annotations of cluster EQ:

- Start number 28 was manually annotated 2 times for cluster EQ.

Gene Information:

Gene: Alove_56 Start: 40504, Stop: 40962, Start Num: 25

Candidate Starts for Alove_56:

(14, 40441), (16, 40444), (23, 40495), (Start: 25 @40504 has 19 MA's), (43, 40573), (54, 40660), (55, 40672), (57, 40684), (59, 40705), (66, 40750), (67, 40753), (72, 40801), (73, 40825),

Gene: Annadreamy_60 Start: 51230, Stop: 51667, Start Num: 34

Candidate Starts for Annadreamy_60:

(Start: 34 @51230 has 11 MA's), (39, 51251), (45, 51281), (53, 51353), (55, 51368), (63, 51431),

Gene: Archimedes_55 Start: 43046, Stop: 43597, Start Num: 13

Candidate Starts for Archimedes_55:

(Start: 13 @43046 has 3 MA's), (17, 43097), (48, 43268), (49, 43271), (55, 43310), (56, 43316), (57, 43322), (59, 43343), (64, 43382), (65, 43385), (66, 43388), (68, 43400), (73, 43463), (75, 43469), (82, 43508), (84, 43520),

Gene: AyoTeo_57 Start: 40244, Stop: 40702, Start Num: 25

Candidate Starts for AyoTeo_57:

(16, 40184), (23, 40235), (Start: 25 @40244 has 19 MA's), (43, 40313), (54, 40400), (55, 40412), (57, 40424), (59, 40445), (66, 40490), (67, 40493), (72, 40541), (73, 40565),

Gene: Beagle_83 Start: 49552, Stop: 49079, Start Num: 22

Candidate Starts for Beagle_83:

(19, 49573), (Start: 22 @49552 has 11 MA's), (30, 49510), (Start: 36 @49498 has 1 MA's), (47, 49417), (49, 49405), (68, 49276), (79, 49177), (83, 49165), (84, 49156), (89, 49141), (90, 49138), (92, 49087),

Gene: Belfort_64 Start: 53741, Stop: 54178, Start Num: 34

Candidate Starts for Belfort_64:

(Start: 34 @53741 has 11 MA's), (35, 53744), (38, 53759), (45, 53792), (53, 53864), (55, 53879), (63, 53942), (73, 54038),

Gene: Benry_62 Start: 40481, Stop: 40939, Start Num: 25

Candidate Starts for Benry_62:

(Start: 25 @40481 has 19 MA's), (30, 40508), (43, 40550), (57, 40661), (59, 40682), (67, 40730), (87, 40868),

Gene: BetaFish_82 Start: 50227, Stop: 49808, Start Num: 36

Candidate Starts for BetaFish_82:

(19, 50302), (Start: 22 @50281 has 11 MA's), (30, 50239), (Start: 36 @50227 has 1 MA's), (47, 50146), (49, 50134), (68, 50005), (79, 49906), (83, 49894), (84, 49885), (89, 49870), (90, 49867), (92, 49816),

Gene: Beuffert_60 Start: 52367, Stop: 52804, Start Num: 34

Candidate Starts for Beuffert_60:

(Start: 34 @52367 has 11 MA's), (39, 52388), (45, 52418), (53, 52490), (55, 52505), (57, 52517), (63, 52568), (71, 52637),

Gene: BillNye_58 Start: 55236, Stop: 55673, Start Num: 33

Candidate Starts for BillNye_58:

(26, 55221), (Start: 33 @55236 has 4 MA's), (60, 55410),

Gene: Blueeyedbeauty_62 Start: 51742, Stop: 52179, Start Num: 34

Candidate Starts for Blueeyedbeauty_62:

(Start: 34 @51742 has 11 MA's), (39, 51763), (45, 51793), (53, 51865), (55, 51880), (63, 51943), (67, 51961),

Gene: Chaewon_63 Start: 55369, Stop: 55806, Start Num: 33

Candidate Starts for Chaewon_63:

(26, 55354), (Start: 33 @55369 has 4 MA's), (60, 55543),

Gene: Cicada_60 Start: 40725, Stop: 41183, Start Num: 25

Candidate Starts for Cicada_60:

(23, 40716), (Start: 25 @40725 has 19 MA's), (32, 40755), (43, 40794), (55, 40893), (57, 40905), (59, 40926), (72, 41022), (73, 41046), (74, 41049),

Gene: Circinus_60 Start: 55375, Stop: 55812, Start Num: 33

Candidate Starts for Circinus_60:

(26, 55360), (Start: 33 @55375 has 4 MA's), (60, 55549),

Gene: Comrade_63 Start: 53357, Stop: 53794, Start Num: 34

Candidate Starts for Comrade_63:

(Start: 34 @53357 has 11 MA's), (35, 53360), (38, 53375), (45, 53408), (53, 53480), (55, 53495), (73, 53654),

Gene: DogYard_82 Start: 49768, Stop: 49295, Start Num: 22

Candidate Starts for DogYard_82:

(19, 49789), (Start: 22 @49768 has 11 MA's), (30, 49726), (Start: 36 @49714 has 1 MA's), (47, 49633), (49, 49621), (68, 49492), (71, 49456), (79, 49393), (83, 49381), (84, 49372), (89, 49357), (90, 49354), (92, 49303),

Gene: Finkle_68 Start: 42206, Stop: 42640, Start Num: 34

Candidate Starts for Finkle_68:

(1, 41561), (2, 41612), (3, 41690), (5, 41795), (6, 41816), (7, 41840), (Start: 18 @42131 has 1 MA's), (Start: 34 @42206 has 11 MA's), (51, 42323), (68, 42440),

Gene: FireCastle_58 Start: 41353, Stop: 41814, Start Num: 24

Candidate Starts for FireCastle_58:

(21, 41341), (Start: 24 @41353 has 1 MA's), (30, 41383), (32, 41386), (43, 41425), (46, 41470), (50, 41488), (56, 41530), (59, 41557), (64, 41596), (67, 41605), (72, 41653),

Gene: Forrestell_82 Start: 49014, Stop: 48538, Start Num: 22

Candidate Starts for Forrestell_82:

(Start: 22 @49014 has 11 MA's), (30, 48972), (Start: 36 @48960 has 1 MA's), (37, 48954), (47, 48879), (56, 48822), (68, 48738), (70, 48705), (71, 48702), (79, 48636), (83, 48624), (84, 48615), (89, 48600), (90, 48597), (92, 48546),

Gene: Frizzle_54 Start: 43417, Stop: 43992, Start Num: 13

Candidate Starts for Frizzle_54:

(Start: 13 @43417 has 3 MA's), (Start: 18 @43486 has 1 MA's), (42, 43597), (48, 43663), (55, 43705), (56, 43711), (66, 43783), (68, 43795), (73, 43858), (74, 43861), (77, 43882), (80, 43897), (81, 43900),

Gene: Ghobes_55 Start: 43399, Stop: 43905, Start Num: 18

Candidate Starts for Ghobes_55:

(Start: 13 @43330 has 3 MA's), (Start: 18 @43399 has 1 MA's), (42, 43510), (48, 43576), (55, 43618), (56, 43624), (59, 43651), (66, 43696), (68, 43708), (73, 43771), (74, 43774), (80, 43810), (81, 43813),

Gene: Goodman_59 Start: 40738, Stop: 41196, Start Num: 25

Candidate Starts for Goodman_59:

(23, 40729), (Start: 25 @40738 has 19 MA's), (43, 40807), (55, 40906), (57, 40918), (59, 40939), (66, 40984), (72, 41035), (73, 41059), (74, 41062), (75, 41065),

Gene: Hive_78 Start: 49497, Stop: 49075, Start Num: 36

Candidate Starts for Hive_78:

(19, 49572), (Start: 22 @49551 has 11 MA's), (30, 49509), (Start: 36 @49497 has 1 MA's), (47, 49416), (49, 49404), (56, 49359), (68, 49275), (70, 49242), (75, 49203), (79, 49173), (83, 49161), (84, 49152), (89, 49137), (92, 49083),

Gene: Htur_61 Start: 41312, Stop: 41770, Start Num: 25

Candidate Starts for Htur_61:

(23, 41303), (Start: 25 @41312 has 19 MA's), (32, 41342), (43, 41381), (46, 41426), (54, 41468), (55, 41480), (57, 41492), (59, 41513), (64, 41552),

Gene: IndiRoo_64 Start: 41012, Stop: 41470, Start Num: 25

Candidate Starts for IndiRoo_64:

(Start: 25 @41012 has 19 MA's), (30, 41039), (43, 41081), (57, 41192), (59, 41213), (67, 41261), (73, 41333), (74, 41336), (88, 41402),

Gene: Jera_58 Start: 39419, Stop: 39877, Start Num: 25

Candidate Starts for Jera_58:

(14, 39356), (16, 39359), (23, 39410), (Start: 25 @39419 has 19 MA's), (43, 39488), (54, 39575), (55, 39587), (57, 39599), (59, 39620), (66, 39665), (67, 39668), (72, 39716), (73, 39740),

Gene: Johann_59 Start: 40738, Stop: 41196, Start Num: 25

Candidate Starts for Johann_59:

(23, 40729), (Start: 25 @40738 has 19 MA's), (43, 40807), (55, 40906), (57, 40918), (59, 40939), (66, 40984), (72, 41035), (73, 41059), (74, 41062), (75, 41065),

Gene: Karp_61 Start: 52956, Stop: 53393, Start Num: 34

Candidate Starts for Karp_61:

(Start: 34 @52956 has 11 MA's), (35, 52959), (38, 52974), (45, 53007), (53, 53079), (55, 53094), (63, 53157), (73, 53253),

Gene: Kubulix_82 Start: 49438, Stop: 48965, Start Num: 22

Candidate Starts for Kubulix_82:

(19, 49459), (Start: 22 @49438 has 11 MA's), (30, 49396), (Start: 36 @49384 has 1 MA's), (47, 49303), (49, 49291), (68, 49162), (79, 49063), (83, 49051), (84, 49042), (89, 49027), (90, 49024), (92, 48973),

Gene: Labella_58 Start: 40240, Stop: 40698, Start Num: 25

Candidate Starts for Labella_58:

(16, 40180), (23, 40231), (Start: 25 @40240 has 19 MA's), (43, 40309), (54, 40396), (55, 40408), (57, 40420), (59, 40441), (66, 40486), (67, 40489), (72, 40537), (73, 40561),

Gene: Limpid_59 Start: 51229, Stop: 51666, Start Num: 34

Candidate Starts for Limpid_59:

(Start: 34 @51229 has 11 MA's), (39, 51250), (45, 51280), (53, 51352), (55, 51367), (63, 51430),

Gene: Linayshia_61 Start: 41250, Stop: 41708, Start Num: 25

Candidate Starts for Linayshia_61:

(Start: 25 @41250 has 19 MA's), (32, 41280), (43, 41319), (46, 41364), (57, 41430), (59, 41451), (64, 41490),

Gene: MellowYellow_83 Start: 49680, Stop: 49207, Start Num: 22

Candidate Starts for MellowYellow_83:

(19, 49701), (Start: 22 @49680 has 11 MA's), (30, 49638), (Start: 36 @49626 has 1 MA's), (47, 49545), (49, 49533), (68, 49404), (79, 49305), (83, 49293), (84, 49284), (89, 49269), (90, 49266), (92, 49215),

Gene: MicyPS_84 Start: 52025, Stop: 51588, Start Num: 28

Candidate Starts for MicyPS_84:

(Start: 28 @52025 has 2 MA's), (64, 51806), (76, 51701), (79, 51683), (86, 51656), (89, 51647), (92, 51593),

Gene: Milani_57 Start: 40485, Stop: 40943, Start Num: 25

Candidate Starts for Milani_57:

(Start: 25 @40485 has 19 MA's), (29, 40506), (43, 40554), (46, 40599), (49, 40614), (54, 40641), (55, 40653), (56, 40659), (59, 40686), (73, 40806), (75, 40812),

Gene: Muntaha_60 Start: 53621, Stop: 54058, Start Num: 33

Candidate Starts for Muntaha_60:

(Start: 33 @53621 has 4 MA's), (60, 53795),

Gene: NyleyClemson_81 Start: 49298, Stop: 48822, Start Num: 22

Candidate Starts for NyleyClemson_81:

(19, 49319), (Start: 22 @49298 has 11 MA's), (30, 49256), (Start: 36 @49244 has 1 MA's), (37, 49238), (47, 49163), (56, 49106), (68, 49022), (70, 48989), (71, 48986), (79, 48920), (83, 48908), (84, 48899), (89, 48884), (90, 48881), (92, 48830),

Gene: Odyssey395_83 Start: 49789, Stop: 49316, Start Num: 22

Candidate Starts for Odyssey395_83:

(Start: 22 @49789 has 11 MA's), (30, 49747), (Start: 36 @49735 has 1 MA's), (39, 49720), (47, 49654), (49, 49642), (68, 49513), (79, 49414), (83, 49402), (84, 49393), (89, 49378), (90, 49375), (92, 49324),

Gene: Olympi_60 Start: 40555, Stop: 41013, Start Num: 25

Candidate Starts for Olympi_60:

(Start: 25 @40555 has 19 MA's), (43, 40624), (54, 40711), (55, 40723), (57, 40735), (59, 40756), (66, 40801), (67, 40804), (72, 40852), (73, 40876),

Gene: PSonyx_105 Start: 56948, Stop: 56508, Start Num: 28

Candidate Starts for PSonyx_105:

(Start: 28 @56948 has 2 MA's), (40, 56906), (44, 56894), (64, 56726), (70, 56669), (74, 56636), (75, 56633), (76, 56621), (85, 56579), (86, 56576), (89, 56567), (91, 56558),

Gene: Parvaparticeps_7 Start: 5556, Stop: 6023, Start Num: 25

Candidate Starts for Parvaparticeps_7:

(Start: 25 @5556 has 19 MA's), (29, 5580), (58, 5748), (59, 5757), (68, 5814), (78, 5910), (81, 5919), (84, 5934), (86, 5940), (87, 5946),

Gene: PermaG_59 Start: 40663, Stop: 41121, Start Num: 25

Candidate Starts for PermaG_59:

(23, 40654), (Start: 25 @40663 has 19 MA's), (43, 40732), (55, 40831), (57, 40843), (59, 40864), (66, 40909), (72, 40960), (73, 40984), (74, 40987), (75, 40990),

Gene: PhuzzTulsa_80 Start: 49863, Stop: 49444, Start Num: 36

Candidate Starts for PhuzzTulsa_80:

(19, 49938), (Start: 22 @49917 has 11 MA's), (30, 49875), (Start: 36 @49863 has 1 MA's), (47, 49782), (49, 49770), (68, 49641), (79, 49542), (83, 49530), (84, 49521), (89, 49506), (90, 49503), (92, 49452),

Gene: Pointis_79 Start: 49365, Stop: 48892, Start Num: 22

Candidate Starts for Pointis_79:

(19, 49386), (Start: 22 @49365 has 11 MA's), (30, 49323), (Start: 36 @49311 has 1 MA's), (47, 49230), (49, 49218), (68, 49089), (71, 49053), (79, 48990), (83, 48978), (84, 48969), (89, 48954), (90, 48951), (92, 48900),

Gene: Popstraw_78 Start: 49485, Stop: 49054, Start Num: 30

Candidate Starts for Popstraw_78:

(Start: 22 @49527 has 11 MA's), (30, 49485), (Start: 36 @49473 has 1 MA's), (47, 49392), (49, 49380), (68, 49251), (79, 49152), (83, 49140), (84, 49131), (89, 49116), (90, 49113), (92, 49062),

Gene: Pureglobe5_81 Start: 49812, Stop: 49336, Start Num: 22

Candidate Starts for Pureglobe5_81:

(19, 49833), (Start: 22 @49812 has 11 MA's), (30, 49770), (Start: 36 @49758 has 1 MA's), (47, 49677), (49, 49665), (56, 49620), (68, 49536), (70, 49503), (75, 49464), (79, 49434), (83, 49422), (84, 49413), (89, 49398), (92, 49344),

Gene: RIPWilbur_81 Start: 49278, Stop: 48856, Start Num: 36

Candidate Starts for RIPWilbur_81:

(19, 49353), (30, 49290), (Start: 36 @49278 has 1 MA's), (47, 49197), (49, 49185), (56, 49140), (68, 49056), (70, 49023), (75, 48984), (79, 48954), (83, 48942), (84, 48933), (89, 48918), (92, 48864),

Gene: Ranunculus_76 Start: 52106, Stop: 51633, Start Num: 22

Candidate Starts for Ranunculus_76:

(12, 52244), (Start: 22 @52106 has 11 MA's), (30, 52064), (Start: 36 @52052 has 1 MA's), (37, 52046), (47, 51971), (49, 51959), (68, 51830), (70, 51797), (79, 51731), (83, 51719), (84, 51710), (89, 51695), (90, 51692),

Gene: Rasovi_61 Start: 41312, Stop: 41770, Start Num: 25

Candidate Starts for Rasovi_61:

(23, 41303), (Start: 25 @41312 has 19 MA's), (32, 41342), (43, 41381), (46, 41426), (54, 41468), (55, 41480), (57, 41492), (59, 41513), (64, 41552),

Gene: RazzB_82 Start: 49424, Stop: 48948, Start Num: 22

Candidate Starts for RazzB_82:

(19, 49445), (Start: 22 @49424 has 11 MA's), (30, 49382), (Start: 36 @49370 has 1 MA's), (37, 49364), (47, 49289), (56, 49232), (68, 49148), (70, 49115), (71, 49112), (79, 49046), (83, 49034), (84, 49025), (89, 49010), (90, 49007), (92, 48956),

Gene: Ren19_76 Start: 49156, Stop: 48722, Start Num: 30

Candidate Starts for Ren19_76:

(Start: 22 @49201 has 11 MA's), (30, 49156), (53, 49027), (56, 49006), (60, 48976), (61, 48958), (62, 48952), (68, 48922), (70, 48889), (71, 48886), (79, 48820), (80, 48817), (83, 48808), (89, 48784), (92, 48730),

Gene: Rootkit7_56 Start: 40504, Stop: 40962, Start Num: 25

Candidate Starts for Rootkit7_56:

(14, 40441), (16, 40444), (23, 40495), (Start: 25 @40504 has 19 MA's), (43, 40573), (54, 40660), (55, 40672), (57, 40684), (59, 40705), (66, 40750), (67, 40753), (72, 40801), (73, 40825),

Gene: SBlackberry_56 Start: 40464, Stop: 40922, Start Num: 25

Candidate Starts for SBlackberry_56:

(23, 40455), (Start: 25 @40464 has 19 MA's), (43, 40533), (54, 40620), (55, 40632), (57, 40644), (59, 40665), (66, 40710), (67, 40713), (72, 40761), (73, 40785),

Gene: Sapo_55 Start: 43149, Stop: 43712, Start Num: 13

Candidate Starts for Sapo_55:

(Start: 13 @43149 has 3 MA's), (56, 43431), (65, 43500), (66, 43503), (69, 43518), (73, 43578), (75, 43584), (81, 43620), (86, 43641),

Gene: SilentRX_61 Start: 45105, Stop: 44584, Start Num: 15

Candidate Starts for SilentRX_61:

(8, 45360), (9, 45351), (10, 45252), (11, 45198), (Start: 13 @45153 has 3 MA's), (Start: 15 @45105 has 1 MA's), (20, 45063), (31, 45012), (53, 44886), (68, 44781), (70, 44748), (79, 44682), (84, 44661), (89, 44646), (92, 44592),

Gene: SparkleGoddess_63 Start: 53358, Stop: 53795, Start Num: 34

Candidate Starts for SparkleGoddess_63:

(Start: 34 @53358 has 11 MA's), (35, 53361), (38, 53376), (45, 53409), (53, 53481), (55, 53496), (63, 53559), (73, 53655),

Gene: Stigma_62 Start: 53372, Stop: 53809, Start Num: 34

Candidate Starts for Stigma_62:

(Start: 34 @53372 has 11 MA's), (35, 53375), (38, 53390), (45, 53423), (53, 53495), (55, 53510), (63, 53573), (70, 53639), (73, 53669),

Gene: Sucha_58 Start: 39912, Stop: 40370, Start Num: 25

Candidate Starts for Sucha_58:

(4, 39498), (Start: 25 @39912 has 19 MA's), (30, 39939), (43, 39981), (57, 40092), (59, 40113), (67, 40161), (73, 40233), (87, 40299),

Gene: Taotie_105 Start: 54635, Stop: 54195, Start Num: 28

Candidate Starts for Taotie_105:

(Start: 28 @54635 has 2 MA's), (40, 54593), (44, 54581), (53, 54500), (64, 54413), (70, 54356), (71, 54353), (74, 54323), (75, 54320), (76, 54308), (85, 54266), (86, 54263), (89, 54254),

Gene: Theresita_55 Start: 38885, Stop: 39367, Start Num: 25

Candidate Starts for Theresita_55:

(Start: 25 @38885 has 19 MA's), (27, 38903), (41, 38963), (43, 38978), (48, 39035), (49, 39038), (50, 39041), (52, 39059), (54, 39065), (55, 39077), (57, 39089), (59, 39110), (66, 39155), (88, 39299), (92, 39362),

Gene: TurboVicky_58 Start: 40681, Stop: 41139, Start Num: 25

Candidate Starts for TurboVicky_58:

(14, 40618), (16, 40621), (23, 40672), (Start: 25 @40681 has 19 MA's), (43, 40750), (54, 40837), (55, 40849), (57, 40861), (59, 40882), (66, 40927), (67, 40930), (72, 40978), (73, 41002),

Gene: Typher_58 Start: 40240, Stop: 40698, Start Num: 25

Candidate Starts for Typher_58:

(16, 40180), (23, 40231), (Start: 25 @40240 has 19 MA's), (43, 40309), (54, 40396), (55, 40408), (57, 40420), (59, 40441), (66, 40486), (67, 40489), (72, 40537), (73, 40561),

Gene: Wakanda_59 Start: 53558, Stop: 53995, Start Num: 33

Candidate Starts for Wakanda_59:
(Start: 33 @53558 has 4 MA's), (60, 53732),

Gene: Westy_63 Start: 53358, Stop: 53795, Start Num: 34

Candidate Starts for Westy_63:
(Start: 34 @53358 has 11 MA's), (35, 53361), (38, 53376), (45, 53409), (53, 53481), (55, 53496), (63, 53559), (73, 53655),

Gene: Zanella_57 Start: 40485, Stop: 40943, Start Num: 25

Candidate Starts for Zanella_57:
(16, 40425), (23, 40476), (Start: 25 @40485 has 19 MA's), (43, 40554), (54, 40641), (55, 40653), (57, 40665), (59, 40686), (66, 40731), (67, 40734), (72, 40782), (73, 40806),