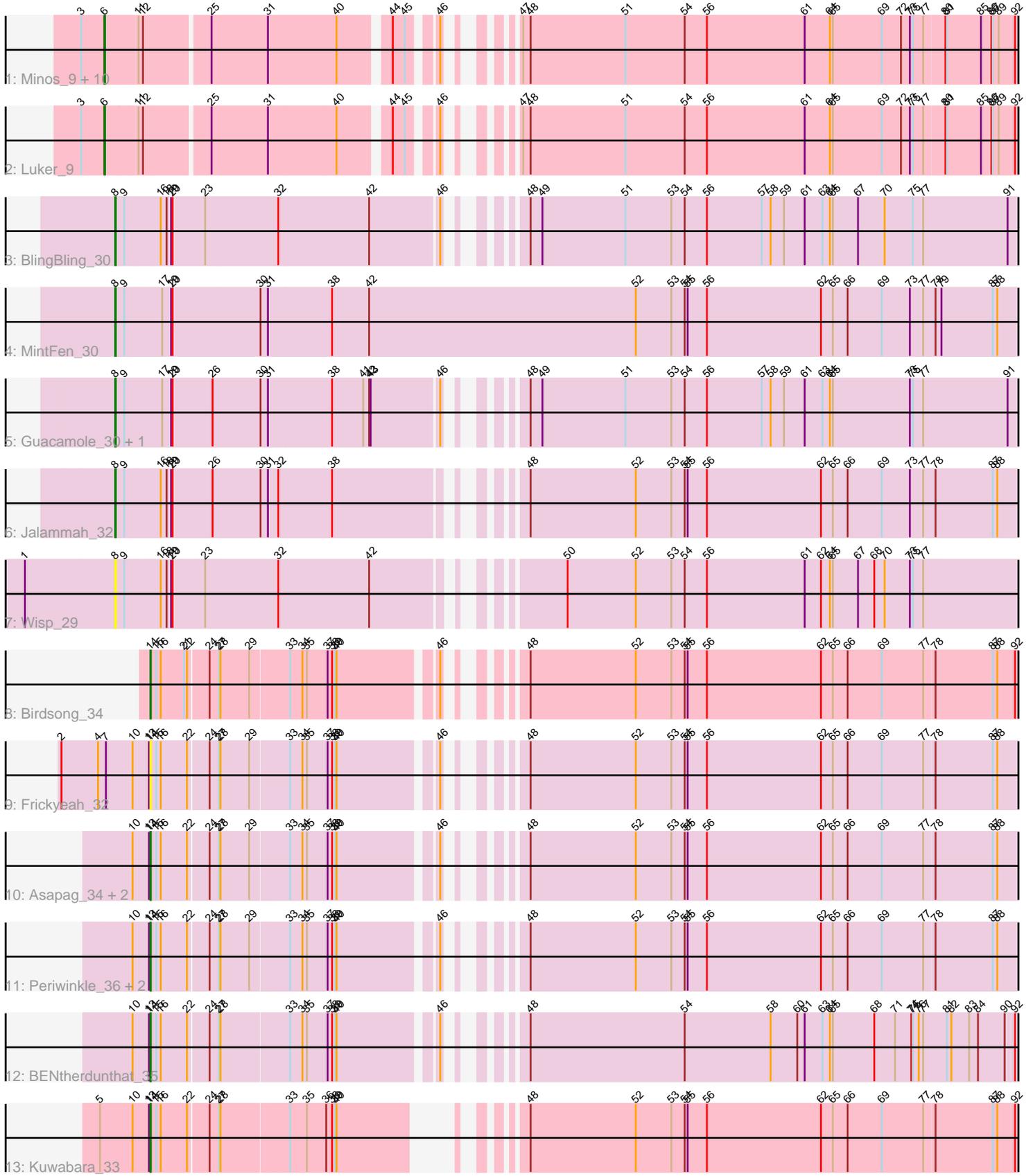


# Zoomed Pham 291434



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 291434 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291434 has 28 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Minos\_9, Guillaume\_9, MrWormie\_9, Sticker17\_9, GalacticEye\_9, Nimi13\_9, Charianelly\_9, Damp\_9, Newt\_9, Jormungandr\_9, Teal\_9
- Track 2 : Luker\_9
- Track 3 : BlingBling\_30
- Track 4 : MintFen\_30
- Track 5 : Guacamole\_30, JasperJr\_30
- Track 6 : Jalammah\_32
- Track 7 : Wisp\_29
- Track 8 : Birdsong\_34
- Track 9 : Frickyeah\_32
- Track 10 : Asapag\_34, BotCity\_35, Getalong\_35
- Track 11 : Periwinkle\_36, Leroy\_34, Horus\_34
- Track 12 : BENtherdunthat\_35
- Track 13 : Kuwabara\_33

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

The start number called the most often in the published annotations is 6, it was called in 12 of the 26 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Charianelly\_9, Damp\_9, GalacticEye\_9, Guillaume\_9, Jormungandr\_9, Luker\_9, Minos\_9, MrWormie\_9, Newt\_9, Nimi13\_9, Sticker17\_9, Teal\_9,

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

- 

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

- Asapag\_34, BENtherdunthat\_35, Birdsong\_34, BlingBling\_30, BotCity\_35, Frickyeah\_32, Getalong\_35, Guacamole\_30, Horus\_34, Jalammah\_32, JasperJr\_30, Kuwabara\_33, Leroy\_34, MintFen\_30, Periwinkle\_36, Wisp\_29,

### **Summary by start number:**

Start 6:

- Found in 12 of 28 ( 42.9% ) of genes in pham
- Manual Annotations of this start: 12 of 26
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Charianelly\_9 (CS3), Damp\_9 (CS3), GalacticEye\_9 (CS3), Guillaume\_9 (CS3), Jormungandr\_9 (CS3), Luker\_9 (CS3), Minos\_9 (CS3), MrWormie\_9 (CS3), Newt\_9 (CS3), Nimi13\_9 (CS3), Sticker17\_9 (CS3), Teal\_9 (CS3),

Start 8:

- Found in 6 of 28 ( 21.4% ) of genes in pham
- Manual Annotations of this start: 5 of 26
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlingBling\_30 (CV), Guacamole\_30 (CV), Jalammah\_32 (CV), JasperJr\_30 (CV), MintFen\_30 (CV), Wisp\_29 (CV),

Start 14:

- Found in 10 of 28 ( 35.7% ) of genes in pham
- Manual Annotations of this start: 9 of 26
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Asapag\_34 (DN1), BENtherdunthat\_35 (DN1), Birdsong\_34 (DN), BotCity\_35 (DN), Frickyeah\_32 (DN1), Getalong\_35 (DN1), Horus\_34 (DN1), Kuwabara\_33 (DN4), Leroy\_34 (DN1), Periwinkle\_36 (DN1),

**Summary by clusters:**

There are 5 clusters represented in this pham: DN, DN4, DN1, CV, CS3,

Info for manual annotations of cluster CS3:

- Start number 6 was manually annotated 12 times for cluster CS3.

Info for manual annotations of cluster CV:

- Start number 8 was manually annotated 5 times for cluster CV.

Info for manual annotations of cluster DN:

- Start number 14 was manually annotated 2 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 14 was manually annotated 6 times for cluster DN1.

Info for manual annotations of cluster DN4:

- Start number 14 was manually annotated 1 time for cluster DN4.

**Gene Information:**

Gene: Asapag\_34 Start: 26338, Stop: 28506, Start Num: 14

Candidate Starts for Asapag\_34:

(10, 26305), (13, 26335), (Start: 14 @26338 has 9 MA's), (15, 26350), (16, 26359), (22, 26410), (24, 26449), (27, 26467), (28, 26470), (29, 26527), (33, 26602), (34, 26626), (35, 26635), (37, 26677), (38, 26686), (39, 26692), (40, 26695), (46, 26875), (48, 26950), (52, 27163), (53, 27235), (54, 27262), (55, 27268), (56, 27307), (62, 27538), (65, 27562), (66, 27592), (69, 27661), (77, 27745), (78, 27766), (87,

27880), (88, 27889), (93, 27949), (95, 27967), (100, 28129), (103, 28141), (104, 28168), (107, 28228), (108, 28246), (109, 28255), (115, 28300), (117, 28321), (118, 28324), (121, 28348), (125, 28393), (128, 28459), (129, 28468), (130, 28477),

Gene: BENtherdunthat\_35 Start: 25903, Stop: 28089, Start Num: 14

Candidate Starts for BENtherdunthat\_35:

(10, 25870), (13, 25900), (Start: 14 @25903 has 9 MA's), (15, 25915), (16, 25924), (22, 25975), (24, 26014), (27, 26032), (28, 26035), (33, 26167), (34, 26191), (35, 26200), (37, 26242), (38, 26251), (39, 26257), (40, 26260), (46, 26440), (48, 26515), (54, 26827), (58, 27001), (60, 27055), (61, 27070), (63, 27106), (64, 27121), (65, 27127), (68, 27211), (71, 27253), (74, 27286), (75, 27289), (76, 27301), (77, 27310), (81, 27355), (82, 27364), (83, 27400), (84, 27418), (90, 27472), (92, 27493), (94, 27523), (98, 27679), (99, 27688), (106, 27778), (113, 27871), (117, 27904), (118, 27907), (126, 27997), (129, 28051),

Gene: Birdsong\_34 Start: 26020, Stop: 28188, Start Num: 14

Candidate Starts for Birdsong\_34:

(Start: 14 @26020 has 9 MA's), (15, 26032), (16, 26041), (21, 26086), (22, 26092), (24, 26131), (27, 26149), (28, 26152), (29, 26209), (33, 26284), (34, 26308), (35, 26317), (37, 26359), (38, 26368), (39, 26374), (40, 26377), (46, 26557), (48, 26632), (52, 26845), (53, 26917), (54, 26944), (55, 26950), (56, 26989), (62, 27220), (65, 27244), (66, 27274), (69, 27343), (77, 27427), (78, 27448), (87, 27562), (88, 27571), (92, 27607), (95, 27649), (101, 27814), (102, 27817), (103, 27823), (105, 27859), (106, 27886), (107, 27910), (108, 27928), (109, 27937), (116, 28000), (117, 28003), (118, 28006), (120, 28027), (123, 28048), (129, 28150),

Gene: BlingBling\_30 Start: 25273, Stop: 27564, Start Num: 8

Candidate Starts for BlingBling\_30:

(Start: 8 @25273 has 5 MA's), (9, 25291), (16, 25360), (18, 25372), (19, 25381), (20, 25384), (23, 25450), (32, 25597), (42, 25780), (46, 25915), (48, 25990), (49, 26014), (51, 26182), (53, 26275), (54, 26302), (56, 26347), (57, 26458), (58, 26476), (59, 26503), (61, 26545), (63, 26581), (64, 26596), (65, 26602), (67, 26653), (70, 26707), (75, 26764), (77, 26785), (91, 26953), (94, 26998), (99, 27163), (106, 27253), (111, 27319), (114, 27349), (117, 27379), (118, 27382), (129, 27526),

Gene: BotCity\_35 Start: 25904, Stop: 28072, Start Num: 14

Candidate Starts for BotCity\_35:

(10, 25871), (13, 25901), (Start: 14 @25904 has 9 MA's), (15, 25916), (16, 25925), (22, 25976), (24, 26015), (27, 26033), (28, 26036), (29, 26093), (33, 26168), (34, 26192), (35, 26201), (37, 26243), (38, 26252), (39, 26258), (40, 26261), (46, 26441), (48, 26516), (52, 26729), (53, 26801), (54, 26828), (55, 26834), (56, 26873), (62, 27104), (65, 27128), (66, 27158), (69, 27227), (77, 27311), (78, 27332), (87, 27446), (88, 27455), (93, 27515), (95, 27533), (100, 27695), (103, 27707), (104, 27734), (107, 27794), (108, 27812), (109, 27821), (115, 27866), (117, 27887), (118, 27890), (121, 27914), (125, 27959), (128, 28025), (129, 28034), (130, 28043),

Gene: Charianelly\_9 Start: 10934, Stop: 13162, Start Num: 6

Candidate Starts for Charianelly\_9:

(3, 10889), (Start: 6 @10934 has 12 MA's), (11, 10997), (12, 11006), (25, 11129), (31, 11243), (40, 11372), (44, 11459), (45, 11483), (46, 11525), (47, 11585), (48, 11600), (51, 11792), (54, 11912), (56, 11957), (61, 12155), (64, 12206), (65, 12212), (69, 12311), (72, 12350), (73, 12368), (75, 12374), (77, 12395), (80, 12434), (81, 12437), (85, 12506), (86, 12527), (87, 12530), (89, 12542), (92, 12575), (95, 12617), (99, 12764), (101, 12782), (106, 12854), (114, 12947), (117, 12977), (118, 12980), (123, 13022), (127, 13076), (129, 13124),

Gene: Damp\_9 Start: 10098, Stop: 12326, Start Num: 6

Candidate Starts for Damp\_9:

(3, 10053), (Start: 6 @10098 has 12 MA's), (11, 10161), (12, 10170), (25, 10293), (31, 10407), (40, 10536), (44, 10623), (45, 10647), (46, 10689), (47, 10749), (48, 10764), (51, 10956), (54, 11076), (56, 11121), (61, 11319), (64, 11370), (65, 11376), (69, 11475), (72, 11514), (73, 11532), (75, 11538), (77, 11559), (80, 11598), (81, 11601), (85, 11670), (86, 11691), (87, 11694), (89, 11706), (92, 11739), (95, 11781), (99, 11928), (101, 11946), (106, 12018), (114, 12111), (117, 12141), (118, 12144), (123, 12186), (127, 12240), (129, 12288),

Gene: Frickyeah\_32 Start: 24439, Stop: 26607, Start Num: 14

Candidate Starts for Frickyeah\_32:

(2, 24265), (4, 24337), (7, 24352), (10, 24406), (13, 24436), (Start: 14 @24439 has 9 MA's), (15, 24451), (16, 24460), (22, 24511), (24, 24550), (27, 24568), (28, 24571), (29, 24628), (33, 24703), (34, 24727), (35, 24736), (37, 24778), (38, 24787), (39, 24793), (40, 24796), (46, 24976), (48, 25051), (52, 25264), (53, 25336), (54, 25363), (55, 25369), (56, 25408), (62, 25639), (65, 25663), (66, 25693), (69, 25762), (77, 25846), (78, 25867), (87, 25981), (88, 25990), (93, 26050), (95, 26068), (100, 26230), (103, 26242), (104, 26269), (107, 26329), (108, 26347), (109, 26356), (115, 26401), (117, 26422), (118, 26425), (121, 26449), (124, 26476), (125, 26494), (128, 26560), (129, 26569), (130, 26578),

Gene: GalacticEye\_9 Start: 10923, Stop: 13151, Start Num: 6

Candidate Starts for GalacticEye\_9:

(3, 10878), (Start: 6 @10923 has 12 MA's), (11, 10986), (12, 10995), (25, 11118), (31, 11232), (40, 11361), (44, 11448), (45, 11472), (46, 11514), (47, 11574), (48, 11589), (51, 11781), (54, 11901), (56, 11946), (61, 12144), (64, 12195), (65, 12201), (69, 12300), (72, 12339), (73, 12357), (75, 12363), (77, 12384), (80, 12423), (81, 12426), (85, 12495), (86, 12516), (87, 12519), (89, 12531), (92, 12564), (95, 12606), (99, 12753), (101, 12771), (106, 12843), (114, 12936), (117, 12966), (118, 12969), (123, 13011), (127, 13065), (129, 13113),

Gene: Getalong\_35 Start: 27115, Stop: 29283, Start Num: 14

Candidate Starts for Getalong\_35:

(10, 27082), (13, 27112), (Start: 14 @27115 has 9 MA's), (15, 27127), (16, 27136), (22, 27187), (24, 27226), (27, 27244), (28, 27247), (29, 27304), (33, 27379), (34, 27403), (35, 27412), (37, 27454), (38, 27463), (39, 27469), (40, 27472), (46, 27652), (48, 27727), (52, 27940), (53, 28012), (54, 28039), (55, 28045), (56, 28084), (62, 28315), (65, 28339), (66, 28369), (69, 28438), (77, 28522), (78, 28543), (87, 28657), (88, 28666), (93, 28726), (95, 28744), (100, 28906), (103, 28918), (104, 28945), (107, 29005), (108, 29023), (109, 29032), (115, 29077), (117, 29098), (118, 29101), (121, 29125), (125, 29170), (128, 29236), (129, 29245), (130, 29254),

Gene: Guacamole\_30 Start: 25271, Stop: 27562, Start Num: 8

Candidate Starts for Guacamole\_30:

(Start: 8 @25271 has 5 MA's), (9, 25289), (17, 25361), (19, 25379), (20, 25382), (26, 25463), (30, 25559), (31, 25574), (38, 25703), (41, 25766), (42, 25778), (43, 25781), (46, 25913), (48, 25988), (49, 26012), (51, 26180), (53, 26273), (54, 26300), (56, 26345), (57, 26456), (58, 26474), (59, 26501), (61, 26543), (63, 26579), (64, 26594), (65, 26600), (73, 26756), (75, 26762), (77, 26783), (91, 26951), (99, 27161), (106, 27251), (114, 27347), (117, 27377), (118, 27380), (129, 27524),

Gene: Guillaume\_9 Start: 10934, Stop: 13183, Start Num: 6

Candidate Starts for Guillaume\_9:

(3, 10889), (Start: 6 @10934 has 12 MA's), (11, 10997), (12, 11006), (25, 11129), (31, 11243), (40, 11372), (44, 11480), (45, 11504), (46, 11546), (47, 11606), (48, 11621), (51, 11813), (54, 11933), (56, 11978), (61, 12176), (64, 12227), (65, 12233), (69, 12332), (72, 12371), (73, 12389), (75, 12395), (77, 12416), (80, 12455), (81, 12458), (85, 12527), (86, 12548), (87, 12551), (89, 12563), (92, 12596), (95, 12638), (99, 12785), (101, 12803), (106, 12875), (114, 12968), (117, 12998), (118, 13001), (123, 13043), (127, 13097), (129, 13145),

Gene: Horus\_34 Start: 26360, Stop: 28528, Start Num: 14

Candidate Starts for Horus\_34:

(10, 26327), (13, 26357), (Start: 14 @26360 has 9 MA's), (15, 26372), (16, 26381), (22, 26432), (24, 26471), (27, 26489), (28, 26492), (29, 26549), (33, 26624), (34, 26648), (35, 26657), (37, 26699), (38, 26708), (39, 26714), (40, 26717), (46, 26897), (48, 26972), (52, 27185), (53, 27257), (54, 27284), (55, 27290), (56, 27329), (62, 27560), (65, 27584), (66, 27614), (69, 27683), (77, 27767), (78, 27788), (87, 27902), (88, 27911), (93, 27971), (95, 27989), (100, 28151), (103, 28163), (104, 28190), (107, 28250), (108, 28268), (109, 28277), (115, 28322), (117, 28343), (118, 28346), (121, 28370), (124, 28397), (125, 28415), (128, 28481), (129, 28490), (130, 28499),

Gene: Jalammah\_32 Start: 26022, Stop: 28295, Start Num: 8

Candidate Starts for Jalammah\_32:

(Start: 8 @26022 has 5 MA's), (9, 26040), (16, 26109), (18, 26121), (19, 26130), (20, 26133), (26, 26214), (30, 26310), (31, 26325), (32, 26346), (38, 26454), (48, 26739), (52, 26952), (53, 27024), (54, 27051), (55, 27057), (56, 27096), (62, 27327), (65, 27351), (66, 27381), (69, 27450), (73, 27507), (77, 27534), (78, 27555), (87, 27669), (88, 27678), (95, 27756), (100, 27918), (103, 27930), (104, 27957), (107, 28017), (108, 28035), (109, 28044), (115, 28089), (117, 28110), (118, 28113), (121, 28137), (125, 28182), (128, 28248), (129, 28257), (130, 28266),

Gene: JasperJr\_30 Start: 25271, Stop: 27562, Start Num: 8

Candidate Starts for JasperJr\_30:

(Start: 8 @25271 has 5 MA's), (9, 25289), (17, 25361), (19, 25379), (20, 25382), (26, 25463), (30, 25559), (31, 25574), (38, 25703), (41, 25766), (42, 25778), (43, 25781), (46, 25913), (48, 25988), (49, 26012), (51, 26180), (53, 26273), (54, 26300), (56, 26345), (57, 26456), (58, 26474), (59, 26501), (61, 26543), (63, 26579), (64, 26594), (65, 26600), (73, 26756), (75, 26762), (77, 26783), (91, 26951), (99, 27161), (106, 27251), (114, 27347), (117, 27377), (118, 27380), (129, 27524),

Gene: Jormungandr\_9 Start: 10937, Stop: 13165, Start Num: 6

Candidate Starts for Jormungandr\_9:

(3, 10892), (Start: 6 @10937 has 12 MA's), (11, 11000), (12, 11009), (25, 11132), (31, 11246), (40, 11375), (44, 11462), (45, 11486), (46, 11528), (47, 11588), (48, 11603), (51, 11795), (54, 11915), (56, 11960), (61, 12158), (64, 12209), (65, 12215), (69, 12314), (72, 12353), (73, 12371), (75, 12377), (77, 12398), (80, 12437), (81, 12440), (85, 12509), (86, 12530), (87, 12533), (89, 12545), (92, 12578), (95, 12620), (99, 12767), (101, 12785), (106, 12857), (114, 12950), (117, 12980), (118, 12983), (123, 13025), (127, 13079), (129, 13127),

Gene: Kuwabara\_33 Start: 25711, Stop: 27840, Start Num: 14

Candidate Starts for Kuwabara\_33:

(5, 25615), (10, 25678), (13, 25708), (Start: 14 @25711 has 9 MA's), (15, 25723), (16, 25732), (22, 25783), (24, 25822), (27, 25840), (28, 25843), (33, 25975), (35, 26008), (36, 26047), (38, 26059), (39, 26065), (40, 26068), (48, 26284), (52, 26497), (53, 26569), (54, 26596), (55, 26602), (56, 26641), (62, 26872), (65, 26896), (66, 26926), (69, 26995), (77, 27079), (78, 27100), (87, 27214), (88, 27223), (92, 27259), (95, 27301), (101, 27466), (102, 27469), (103, 27475), (105, 27511), (106, 27538), (107, 27562), (108, 27580), (109, 27589), (116, 27652), (117, 27655), (118, 27658), (120, 27679), (123, 27700), (129, 27802),

Gene: Leroy\_34 Start: 26361, Stop: 28529, Start Num: 14

Candidate Starts for Leroy\_34:

(10, 26328), (13, 26358), (Start: 14 @26361 has 9 MA's), (15, 26373), (16, 26382), (22, 26433), (24, 26472), (27, 26490), (28, 26493), (29, 26550), (33, 26625), (34, 26649), (35, 26658), (37, 26700), (38, 26709), (39, 26715), (40, 26718), (46, 26898), (48, 26973), (52, 27186), (53, 27258), (54, 27285), (55, 27291), (56, 27330), (62, 27561), (65, 27585), (66, 27615), (69, 27684), (77, 27768), (78, 27789), (87, 27903), (88, 27912), (93, 27972), (95, 27990), (100, 28152), (103, 28164), (104, 28191), (107, 28251),

(108, 28269), (109, 28278), (115, 28323), (117, 28344), (118, 28347), (121, 28371), (124, 28398), (125, 28416), (128, 28482), (129, 28491), (130, 28500),

Gene: Luker\_9 Start: 10917, Stop: 13145, Start Num: 6

Candidate Starts for Luker\_9:

(3, 10872), (Start: 6 @10917 has 12 MA's), (11, 10980), (12, 10989), (25, 11112), (31, 11226), (40, 11355), (44, 11442), (45, 11466), (46, 11508), (47, 11568), (48, 11583), (51, 11775), (54, 11895), (56, 11940), (61, 12138), (64, 12189), (65, 12195), (69, 12294), (72, 12333), (73, 12351), (75, 12357), (77, 12378), (80, 12417), (81, 12420), (85, 12489), (86, 12510), (87, 12513), (89, 12525), (92, 12558), (95, 12600), (99, 12747), (101, 12765), (106, 12837), (112, 12915), (114, 12930), (117, 12960), (118, 12963), (123, 13005), (127, 13059), (129, 13107),

Gene: Minos\_9 Start: 10923, Stop: 13151, Start Num: 6

Candidate Starts for Minos\_9:

(3, 10878), (Start: 6 @10923 has 12 MA's), (11, 10986), (12, 10995), (25, 11118), (31, 11232), (40, 11361), (44, 11448), (45, 11472), (46, 11514), (47, 11574), (48, 11589), (51, 11781), (54, 11901), (56, 11946), (61, 12144), (64, 12195), (65, 12201), (69, 12300), (72, 12339), (73, 12357), (75, 12363), (77, 12384), (80, 12423), (81, 12426), (85, 12495), (86, 12516), (87, 12519), (89, 12531), (92, 12564), (95, 12606), (99, 12753), (101, 12771), (106, 12843), (114, 12936), (117, 12966), (118, 12969), (123, 13011), (127, 13065), (129, 13113),

Gene: MintFen\_30 Start: 25225, Stop: 27615, Start Num: 8

Candidate Starts for MintFen\_30:

(Start: 8 @25225 has 5 MA's), (9, 25243), (17, 25315), (19, 25333), (20, 25336), (30, 25513), (31, 25528), (38, 25657), (42, 25732), (52, 26272), (53, 26344), (54, 26371), (55, 26377), (56, 26416), (62, 26647), (65, 26671), (66, 26701), (69, 26770), (73, 26827), (77, 26854), (78, 26875), (79, 26887), (87, 26989), (88, 26998), (93, 27058), (95, 27076), (100, 27238), (103, 27250), (104, 27277), (107, 27337), (108, 27355), (109, 27364), (115, 27409), (117, 27430), (118, 27433), (121, 27457), (125, 27502), (128, 27568), (129, 27577), (130, 27586),

Gene: MrWormie\_9 Start: 10087, Stop: 12315, Start Num: 6

Candidate Starts for MrWormie\_9:

(3, 10042), (Start: 6 @10087 has 12 MA's), (11, 10150), (12, 10159), (25, 10282), (31, 10396), (40, 10525), (44, 10612), (45, 10636), (46, 10678), (47, 10738), (48, 10753), (51, 10945), (54, 11065), (56, 11110), (61, 11308), (64, 11359), (65, 11365), (69, 11464), (72, 11503), (73, 11521), (75, 11527), (77, 11548), (80, 11587), (81, 11590), (85, 11659), (86, 11680), (87, 11683), (89, 11695), (92, 11728), (95, 11770), (99, 11917), (101, 11935), (106, 12007), (114, 12100), (117, 12130), (118, 12133), (123, 12175), (127, 12229), (129, 12277),

Gene: Newt\_9 Start: 10934, Stop: 13162, Start Num: 6

Candidate Starts for Newt\_9:

(3, 10889), (Start: 6 @10934 has 12 MA's), (11, 10997), (12, 11006), (25, 11129), (31, 11243), (40, 11372), (44, 11459), (45, 11483), (46, 11525), (47, 11585), (48, 11600), (51, 11792), (54, 11912), (56, 11957), (61, 12155), (64, 12206), (65, 12212), (69, 12311), (72, 12350), (73, 12368), (75, 12374), (77, 12395), (80, 12434), (81, 12437), (85, 12506), (86, 12527), (87, 12530), (89, 12542), (92, 12575), (95, 12617), (99, 12764), (101, 12782), (106, 12854), (114, 12947), (117, 12977), (118, 12980), (123, 13022), (127, 13076), (129, 13124),

Gene: Nimi13\_9 Start: 10935, Stop: 13163, Start Num: 6

Candidate Starts for Nimi13\_9:

(3, 10890), (Start: 6 @10935 has 12 MA's), (11, 10998), (12, 11007), (25, 11130), (31, 11244), (40, 11373), (44, 11460), (45, 11484), (46, 11526), (47, 11586), (48, 11601), (51, 11793), (54, 11913), (56, 11958), (61, 12156), (64, 12207), (65, 12213), (69, 12312), (72, 12351), (73, 12369), (75, 12375), (77,

12396), (80, 12435), (81, 12438), (85, 12507), (86, 12528), (87, 12531), (89, 12543), (92, 12576), (95, 12618), (99, 12765), (101, 12783), (106, 12855), (114, 12948), (117, 12978), (118, 12981), (123, 13023), (127, 13077), (129, 13125),

Gene: Periwinkle\_36 Start: 26805, Stop: 28973, Start Num: 14

Candidate Starts for Periwinkle\_36:

(10, 26772), (13, 26802), (Start: 14 @26805 has 9 MA's), (15, 26817), (16, 26826), (22, 26877), (24, 26916), (27, 26934), (28, 26937), (29, 26994), (33, 27069), (34, 27093), (35, 27102), (37, 27144), (38, 27153), (39, 27159), (40, 27162), (46, 27342), (48, 27417), (52, 27630), (53, 27702), (54, 27729), (55, 27735), (56, 27774), (62, 28005), (65, 28029), (66, 28059), (69, 28128), (77, 28212), (78, 28233), (87, 28347), (88, 28356), (93, 28416), (95, 28434), (100, 28596), (103, 28608), (104, 28635), (107, 28695), (108, 28713), (109, 28722), (115, 28767), (117, 28788), (118, 28791), (121, 28815), (124, 28842), (125, 28860), (128, 28926), (129, 28935), (130, 28944),

Gene: Sticker17\_9 Start: 10934, Stop: 13162, Start Num: 6

Candidate Starts for Sticker17\_9:

(3, 10889), (Start: 6 @10934 has 12 MA's), (11, 10997), (12, 11006), (25, 11129), (31, 11243), (40, 11372), (44, 11459), (45, 11483), (46, 11525), (47, 11585), (48, 11600), (51, 11792), (54, 11912), (56, 11957), (61, 12155), (64, 12206), (65, 12212), (69, 12311), (72, 12350), (73, 12368), (75, 12374), (77, 12395), (80, 12434), (81, 12437), (85, 12506), (86, 12527), (87, 12530), (89, 12542), (92, 12575), (95, 12617), (99, 12764), (101, 12782), (106, 12854), (114, 12947), (117, 12977), (118, 12980), (123, 13022), (127, 13076), (129, 13124),

Gene: Teal\_9 Start: 10911, Stop: 13139, Start Num: 6

Candidate Starts for Teal\_9:

(3, 10866), (Start: 6 @10911 has 12 MA's), (11, 10974), (12, 10983), (25, 11106), (31, 11220), (40, 11349), (44, 11436), (45, 11460), (46, 11502), (47, 11562), (48, 11577), (51, 11769), (54, 11889), (56, 11934), (61, 12132), (64, 12183), (65, 12189), (69, 12288), (72, 12327), (73, 12345), (75, 12351), (77, 12372), (80, 12411), (81, 12414), (85, 12483), (86, 12504), (87, 12507), (89, 12519), (92, 12552), (95, 12594), (99, 12741), (101, 12759), (106, 12831), (114, 12924), (117, 12954), (118, 12957), (123, 12999), (127, 13053), (129, 13101),

Gene: Wisp\_29 Start: 24983, Stop: 27256, Start Num: 8

Candidate Starts for Wisp\_29:

(1, 24806), (Start: 8 @24983 has 5 MA's), (9, 25001), (16, 25070), (18, 25082), (19, 25091), (20, 25094), (23, 25160), (32, 25307), (42, 25490), (50, 25775), (52, 25913), (53, 25985), (54, 26012), (56, 26057), (61, 26255), (62, 26288), (64, 26306), (65, 26312), (67, 26363), (68, 26396), (70, 26417), (73, 26468), (75, 26474), (77, 26495), (94, 26705), (95, 26717), (96, 26723), (97, 26783), (98, 26855), (99, 26864), (101, 26882), (103, 26891), (104, 26918), (110, 27008), (115, 27050), (117, 27071), (118, 27074), (119, 27089), (120, 27095), (122, 27113),