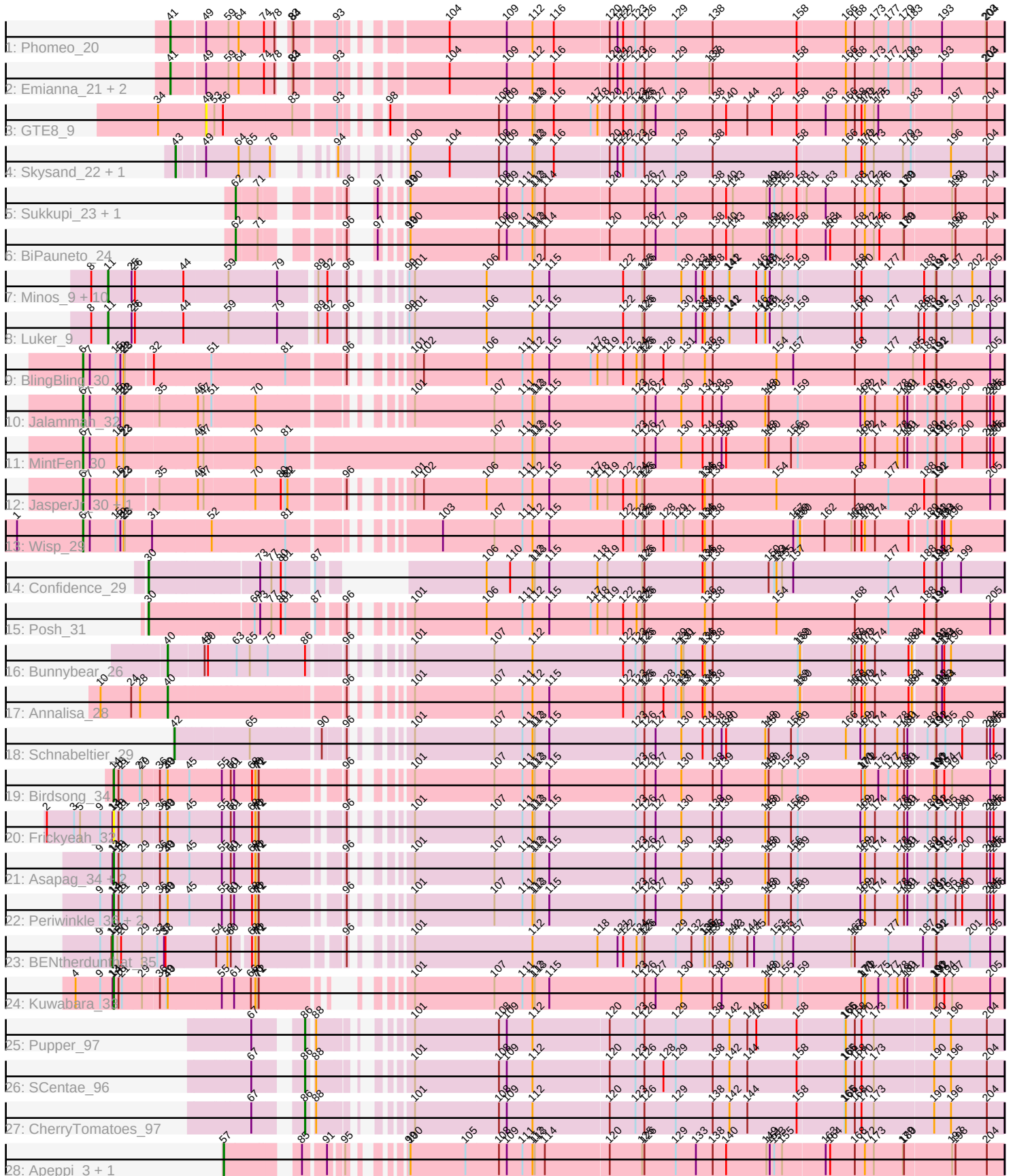


Pham 330964



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 330964 Report

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

Pham number 330964 has 48 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Phomeo_20
- Track 2 : Emianna_21, Kurt_21, KidneyBean_21
- Track 3 : GTE8_9
- Track 4 : Skysand_22, Float294_22
- Track 5 : Sukkupi_23, Yndexa_23
- Track 6 : BiPauneto_24
- Track 7 : Minos_9, Guillaume_9, Sticker17_9, GalacticEye_9, MrWormie_9, Nimi13_9, Charianelly_9, Damp_9, Newt_9, Jormungandr_9, Teal_9
- Track 8 : Luker_9
- Track 9 : BlingBling_30
- Track 10 : Jalammah_32
- Track 11 : MintFen_30
- Track 12 : JasperJr_30, Guacamole_30
- Track 13 : Wisp_29
- Track 14 : Confidence_29
- Track 15 : Posh_31
- Track 16 : Bunnybear_26
- Track 17 : Annalisa_28
- Track 18 : Schnabeltier_29
- Track 19 : Birdsong_34
- Track 20 : Frickyeh_32
- Track 21 : Asapag_34, BotCity_35, Getalong_35
- Track 22 : Periwinkle_36, Leroy_34, Horus_34
- Track 23 : BENtherdunthat_35
- Track 24 : Kuwabara_33
- Track 25 : Pupper_97
- Track 26 : SCentae_96
- Track 27 : CherryTomatoes_97
- Track 28 : Apeppi_3, LuckyLeo_3

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

The start number called the most often in the published annotations is 11, it was called in 12 of the 46 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:

- Annalisa_28, Apeppi_3, Asapag_34, BENTherdunthat_35, BiPauneto_24, Birdsong_34, BlingBling_30, BotCity_35, Bunnybear_26, CherryTomatoes_97, Confidence_29, Emianna_21, Float294_22, Frickyeh_32, GTE8_9, Getalong_35, Guacamole_30, Horus_34, Jalammah_32, JasperJr_30, KidneyBean_21, Kurt_21, Kuwabara_33, Leroy_34, LuckyLeo_3, MintFen_30, Periwinkle_36, Phomeo_20, Posh_31, Pupper_97, SCentae_96, Schnabeltier_29, Skysand_22, Sukkupi_23, Wisp_29, Yndexa_23,

Summary by start number:

Start 6:

- Found in 6 of 48 (12.5%) of genes in pham
- Manual Annotations of this start: 6 of 46
- 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 11:

- Found in 12 of 48 (25.0%) of genes in pham
- Manual Annotations of this start: 12 of 46
- 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 13:

- Found in 9 of 48 (18.8%) of genes in pham
- Manual Annotations of this start: 1 of 46
- Called 11.1% of time when present
- Phage (with cluster) where this start called: BENTherdunthat_35 (DN1),

Start 14:

- Found in 9 of 48 (18.8%) of genes in pham
- Manual Annotations of this start: 8 of 46
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Asapag_34 (DN1), Birdsong_34 (DN), BotCity_35 (DN), Frickyeh_32 (DN1), Getalong_35 (DN1), Horus_34 (DN1), Kuwabara_33 (DN4), Leroy_34 (DN1), Periwinkle_36 (DN1),

Start 30:

- Found in 2 of 48 (4.2%) of genes in pham
- Manual Annotations of this start: 2 of 46
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Confidence_29 (CY1), Posh_31 (CY4),

Start 40:

- Found in 11 of 48 (22.9%) of genes in pham
- Manual Annotations of this start: 2 of 46
- Called 18.2% of time when present
- Phage (with cluster) where this start called: Annalisa_28 (CZ4), Bunnybear_26 (CZ),

Start 41:

- Found in 4 of 48 (8.3%) of genes in pham
- Manual Annotations of this start: 4 of 46
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Emianna_21 (CR2), KidneyBean_21 (CR2), Kurt_21 (CR2), Phomeo_20 (CR2),

Start 42:

- Found in 1 of 48 (2.1%) 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: Schnabeltier_29 (DB),

Start 43:

- Found in 2 of 48 (4.2%) of genes in pham
- Manual Annotations of this start: 2 of 46
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Float294_22 (CR3), Skysand_22 (CR3),

Start 49:

- Found in 7 of 48 (14.6%) of genes in pham
- No Manual Annotations of this start.
- Called 14.3% of time when present
- Phage (with cluster) where this start called: GTE8_9 (CR2),

Start 57:

- Found in 2 of 48 (4.2%) of genes in pham
- Manual Annotations of this start: 2 of 46
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apeppi_3 (DV), LuckyLeo_3 (DV),

Start 62:

- Found in 3 of 48 (6.2%) of genes in pham
- Manual Annotations of this start: 3 of 46
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BiPauneto_24 (CR4), Sukkupi_23 (CR4), Yndexa_23 (CR4),

Start 86:

- Found in 4 of 48 (8.3%) of genes in pham
- Manual Annotations of this start: 3 of 46
- Called 75.0% of time when present
- Phage (with cluster) where this start called: CherryTomatoes_97 (DO), Pupper_97 (DO), SCentae_96 (DO),

Summary by clusters:

There are 15 clusters represented in this pham: DN, DO, CY1, DN4, CR4, CY4, CR3, DB, CR2, CZ4, CZ, DN1, DV, CV, CS3,

Info for manual annotations of cluster CR2:

- Start number 41 was manually annotated 4 times for cluster CR2.

Info for manual annotations of cluster CR3:

- Start number 43 was manually annotated 2 times for cluster CR3.

Info for manual annotations of cluster CR4:

- Start number 62 was manually annotated 3 times for cluster CR4.

Info for manual annotations of cluster CS3:

- Start number 11 was manually annotated 12 times for cluster CS3.

Info for manual annotations of cluster CV:

- Start number 6 was manually annotated 6 times for cluster CV.

Info for manual annotations of cluster CY1:

- Start number 30 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CY4:

- Start number 30 was manually annotated 1 time for cluster CY4.

Info for manual annotations of cluster CZ:

- Start number 40 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ4:

- Start number 40 was manually annotated 1 time for cluster CZ4.

Info for manual annotations of cluster DB:

- Start number 42 was manually annotated 1 time for cluster DB.

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 13 was manually annotated 1 time for cluster DN1.
- Start number 14 was manually annotated 5 times for cluster DN1.

Info for manual annotations of cluster DN4:

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

Info for manual annotations of cluster DO:

- Start number 86 was manually annotated 3 times for cluster DO.

Info for manual annotations of cluster DV:

- Start number 57 was manually annotated 2 times for cluster DV.

Gene Information:

Gene: Annalisa_28 Start: 23307, Stop: 25346, Start Num: 40

Candidate Starts for Annalisa_28:

(10, 23130), (24, 23211), (28, 23235), (Start: 40 @23307 has 2 MA's), (96, 23715), (101, 23790), (107, 24003), (111, 24075), (112, 24102), (115, 24147), (122, 24345), (123, 24378), (125, 24396), (126, 24402), (128, 24453), (129, 24486), (130, 24501), (131, 24507), (134, 24558), (136, 24564), (138, 24585), (159, 24807), (160, 24813), (167, 24945), (168, 24954), (170, 24972), (172, 24981), (174, 25008), (182, 25098), (184, 25107), (191, 25161), (192, 25164), (193, 25179), (194, 25185),

Gene: Apeppi_3 Start: 3182, Stop: 5059, Start Num: 57

Candidate Starts for Apeppi_3:

(Start: 57 @3182 has 2 MA's), (85, 3338), (91, 3389), (95, 3419), (99, 3488), (100, 3491), (105, 3638), (108, 3725), (109, 3746), (111, 3788), (112, 3815), (113, 3821), (114, 3848), (120, 4016), (125, 4103), (126, 4109), (129, 4193), (133, 4247), (138, 4292), (140, 4328), (149, 4436), (151, 4445), (153, 4457), (155, 4478), (163, 4589), (164, 4601), (168, 4667), (172, 4694), (173, 4718), (179, 4796), (180, 4799), (197, 4922), (198, 4931), (204, 5015),

Gene: Asapag_34 Start: 26338, Stop: 28506, Start Num: 14

Candidate Starts for Asapag_34:

(9, 26305), (Start: 13 @26335 has 1 MA's), (Start: 14 @26338 has 8 MA's), (18, 26350), (21, 26359), (29, 26410), (36, 26449), (39, 26467), (Start: 40 @26470 has 2 MA's), (45, 26527), (55, 26602), (60, 26626), (61, 26635), (68, 26677), (70, 26686), (71, 26692), (72, 26695), (96, 26875), (101, 26950), (107, 27163), (111, 27235), (112, 27262), (113, 27268), (115, 27307), (123, 27538), (126, 27562), (127, 27592), (130, 27661), (138, 27745), (139, 27766), (148, 27880), (150, 27889), (156, 27949), (159, 27967), (169, 28129), (172, 28141), (174, 28168), (178, 28228), (180, 28246), (181, 28255), (189, 28300), (191, 28321), (192, 28324), (195, 28348), (200, 28393), (204, 28459), (205, 28468), (206, 28477),

Gene: BENtherdunthat_35 Start: 25903, Stop: 28089, Start Num: 13

Candidate Starts for BENtherdunthat_35:

(9, 25870), (12, 25900), (Start: 13 @25903 has 1 MA's), (17, 25915), (20, 25924), (29, 25975), (33, 26014), (37, 26032), (38, 26035), (54, 26167), (58, 26191), (60, 26200), (68, 26242), (70, 26251), (71, 26257), (72, 26260), (96, 26440), (101, 26515), (112, 26827), (118, 27001), (121, 27055), (122, 27070), (124, 27106), (125, 27121), (126, 27127), (129, 27211), (132, 27253), (135, 27286), (136, 27289), (137, 27301), (138, 27310), (142, 27355), (143, 27364), (144, 27400), (145, 27418), (153, 27472), (155, 27493), (157, 27523), (167, 27679), (168, 27688), (177, 27778), (187, 27871), (191, 27904), (192, 27907), (201, 27997), (205, 28051),

Gene: BiPauneto_24 Start: 9593, Stop: 11410, Start Num: 62

Candidate Starts for BiPauneto_24:

(Start: 62 @9593 has 3 MA's), (71, 9644), (96, 9785), (97, 9800), (99, 9839), (100, 9842), (108, 10076), (109, 10097), (111, 10139), (112, 10166), (113, 10172), (114, 10199), (120, 10367), (126, 10460), (127, 10490), (129, 10544), (138, 10643), (140, 10679), (143, 10697), (149, 10787), (151, 10796), (153, 10808), (155, 10829), (158, 10868), (163, 10940), (164, 10952), (168, 11018), (172, 11045), (173, 11069), (176, 11084), (179, 11147), (180, 11150), (197, 11273), (198, 11282), (204, 11366),

Gene: Birdsong_34 Start: 26020, Stop: 28188, Start Num: 14

Candidate Starts for Birdsong_34:

(Start: 14 @26020 has 8 MA's), (18, 26032), (21, 26041), (27, 26086), (29, 26092), (36, 26131), (39, 26149), (Start: 40 @26152 has 2 MA's), (45, 26209), (55, 26284), (60, 26308), (61, 26317), (68, 26359), (70, 26368), (71, 26374), (72, 26377), (96, 26557), (101, 26632), (107, 26845), (111, 26917), (112, 26944), (113, 26950), (115, 26989), (123, 27220), (126, 27244), (127, 27274), (130, 27343),

(138, 27427), (139, 27448), (148, 27562), (150, 27571), (155, 27607), (159, 27649), (170, 27814), (171, 27817), (172, 27823), (175, 27859), (177, 27886), (178, 27910), (180, 27928), (181, 27937), (190, 28000), (191, 28003), (192, 28006), (194, 28027), (197, 28048), (205, 28150),

Gene: BlingBling_30 Start: 25273, Stop: 27564, Start Num: 6

Candidate Starts for BlingBling_30:

(Start: 6 @25273 has 6 MA's), (7, 25291), (15, 25360), (19, 25372), (22, 25381), (23, 25384), (32, 25450), (51, 25597), (81, 25780), (96, 25915), (101, 25990), (102, 26014), (106, 26182), (111, 26275), (112, 26302), (115, 26347), (117, 26458), (118, 26476), (119, 26503), (122, 26545), (124, 26581), (125, 26596), (126, 26602), (128, 26653), (131, 26707), (136, 26764), (138, 26785), (154, 26953), (157, 26998), (168, 27163), (177, 27253), (185, 27319), (188, 27349), (191, 27379), (192, 27382), (205, 27526),

Gene: BotCity_35 Start: 25904, Stop: 28072, Start Num: 14

Candidate Starts for BotCity_35:

(9, 25871), (Start: 13 @25901 has 1 MA's), (Start: 14 @25904 has 8 MA's), (18, 25916), (21, 25925), (29, 25976), (36, 26015), (39, 26033), (Start: 40 @26036 has 2 MA's), (45, 26093), (55, 26168), (60, 26192), (61, 26201), (68, 26243), (70, 26252), (71, 26258), (72, 26261), (96, 26441), (101, 26516), (107, 26729), (111, 26801), (112, 26828), (113, 26834), (115, 26873), (123, 27104), (126, 27128), (127, 27158), (130, 27227), (138, 27311), (139, 27332), (148, 27446), (150, 27455), (156, 27515), (159, 27533), (169, 27695), (172, 27707), (174, 27734), (178, 27794), (180, 27812), (181, 27821), (189, 27866), (191, 27887), (192, 27890), (195, 27914), (200, 27959), (204, 28025), (205, 28034), (206, 28043),

Gene: Bunnybear_26 Start: 24720, Stop: 26759, Start Num: 40

Candidate Starts for Bunnybear_26:

(Start: 40 @24720 has 2 MA's), (48, 24801), (50, 24810), (63, 24879), (65, 24912), (75, 24957), (Start: 86 @25047 has 3 MA's), (96, 25128), (101, 25203), (107, 25416), (112, 25515), (122, 25758), (123, 25791), (125, 25809), (126, 25815), (129, 25899), (130, 25914), (131, 25920), (134, 25971), (136, 25977), (138, 25998), (159, 26220), (160, 26226), (167, 26358), (168, 26367), (170, 26385), (172, 26394), (174, 26421), (182, 26511), (184, 26520), (191, 26574), (192, 26577), (193, 26592), (194, 26598), (196, 26616),

Gene: Charianelly_9 Start: 10934, Stop: 13162, Start Num: 11

Candidate Starts for Charianelly_9:

(8, 10889), (Start: 11 @10934 has 12 MA's), (25, 10997), (26, 11006), (44, 11129), (59, 11243), (79, 11372), (89, 11459), (92, 11483), (96, 11525), (99, 11585), (101, 11600), (106, 11792), (112, 11912), (115, 11957), (122, 12155), (125, 12206), (126, 12212), (130, 12311), (133, 12350), (134, 12368), (136, 12374), (138, 12395), (141, 12434), (142, 12437), (146, 12506), (147, 12527), (148, 12530), (151, 12542), (155, 12575), (159, 12617), (168, 12764), (170, 12782), (177, 12854), (188, 12947), (191, 12977), (192, 12980), (197, 13022), (202, 13076), (205, 13124),

Gene: CherryTomatoes_97 Start: 48896, Stop: 50605, Start Num: 86

Candidate Starts for CherryTomatoes_97:

(67, 48803), (Start: 86 @48896 has 3 MA's), (88, 48911), (101, 49052), (108, 49274), (109, 49292), (112, 49361), (120, 49562), (123, 49631), (126, 49655), (129, 49739), (138, 49838), (142, 49883), (144, 49931), (158, 50063), (165, 50186), (166, 50189), (168, 50213), (170, 50231), (173, 50264), (190, 50420), (196, 50465), (204, 50561),

Gene: Confidence_29 Start: 24635, Stop: 26650, Start Num: 30

Candidate Starts for Confidence_29:

(Start: 30 @24635 has 2 MA's), (73, 24896), (77, 24923), (80, 24944), (81, 24950), (87, 25007), (106, 25268), (110, 25328), (112, 25388), (113, 25394), (115, 25433), (118, 25562), (119, 25589), (125,

25682), (126, 25688), (134, 25844), (136, 25850), (138, 25871), (150, 26018), (153, 26033), (154, 26039), (155, 26054), (157, 26084), (177, 26339), (188, 26435), (191, 26465), (192, 26468), (193, 26483), (199, 26534),

Gene: Damp_9 Start: 10098, Stop: 12326, Start Num: 11

Candidate Starts for Damp_9:

(8, 10053), (Start: 11 @10098 has 12 MA's), (25, 10161), (26, 10170), (44, 10293), (59, 10407), (79, 10536), (89, 10623), (92, 10647), (96, 10689), (99, 10749), (101, 10764), (106, 10956), (112, 11076), (115, 11121), (122, 11319), (125, 11370), (126, 11376), (130, 11475), (133, 11514), (134, 11532), (136, 11538), (138, 11559), (141, 11598), (142, 11601), (146, 11670), (147, 11691), (148, 11694), (151, 11706), (155, 11739), (159, 11781), (168, 11928), (170, 11946), (177, 12018), (188, 12111), (191, 12141), (192, 12144), (197, 12186), (202, 12240), (205, 12288),

Gene: Emianna_21 Start: 10466, Stop: 12502, Start Num: 41

Candidate Starts for Emianna_21:

(Start: 41 @10466 has 4 MA's), (49, 10547), (59, 10607), (64, 10634), (74, 10697), (78, 10721), (83, 10736), (84, 10739), (93, 10838), (104, 11042), (109, 11189), (112, 11258), (116, 11315), (120, 11459), (121, 11480), (122, 11495), (123, 11528), (126, 11552), (129, 11636), (137, 11726), (138, 11735), (158, 11960), (166, 12086), (168, 12110), (173, 12161), (177, 12200), (179, 12239), (183, 12260), (193, 12338), (203, 12455), (204, 12458),

Gene: Float294_22 Start: 10208, Stop: 12094, Start Num: 43

Candidate Starts for Float294_22:

(Start: 43 @10208 has 2 MA's), (49, 10265), (64, 10352), (65, 10379), (76, 10427), (94, 10469), (100, 10529), (104, 10634), (108, 10763), (109, 10781), (112, 10850), (113, 10856), (116, 10907), (120, 11051), (121, 11072), (122, 11087), (123, 11120), (126, 11144), (129, 11228), (138, 11327), (158, 11552), (166, 11678), (170, 11720), (172, 11729), (173, 11753), (179, 11831), (183, 11852), (196, 11954), (204, 12050),

Gene: Frickyeah_32 Start: 24439, Stop: 26607, Start Num: 14

Candidate Starts for Frickyeah_32:

(2, 24265), (3, 24337), (5, 24352), (9, 24406), (Start: 13 @24436 has 1 MA's), (Start: 14 @24439 has 8 MA's), (18, 24451), (21, 24460), (29, 24511), (36, 24550), (39, 24568), (Start: 40 @24571 has 2 MA's), (45, 24628), (55, 24703), (60, 24727), (61, 24736), (68, 24778), (70, 24787), (71, 24793), (72, 24796), (96, 24976), (101, 25051), (107, 25264), (111, 25336), (112, 25363), (113, 25369), (115, 25408), (123, 25639), (126, 25663), (127, 25693), (130, 25762), (138, 25846), (139, 25867), (148, 25981), (150, 25990), (156, 26050), (159, 26068), (169, 26230), (172, 26242), (174, 26269), (178, 26329), (180, 26347), (181, 26356), (189, 26401), (191, 26422), (192, 26425), (195, 26449), (198, 26476), (200, 26494), (204, 26560), (205, 26569), (206, 26578),

Gene: GTE8_9 Start: 3345, Stop: 5333, Start Num: 49

Candidate Starts for GTE8_9:

(34, 3216), (49, 3345), (53, 3366), (56, 3387), (83, 3564), (93, 3666), (98, 3726), (108, 3999), (109, 4020), (112, 4089), (113, 4095), (116, 4146), (117, 4245), (118, 4263), (120, 4290), (122, 4326), (123, 4359), (125, 4377), (126, 4383), (127, 4413), (129, 4467), (138, 4566), (140, 4602), (144, 4659), (152, 4725), (158, 4791), (163, 4863), (166, 4917), (168, 4941), (170, 4959), (172, 4968), (173, 4992), (175, 5004), (183, 5091), (197, 5196), (204, 5289),

Gene: GalacticEye_9 Start: 10923, Stop: 13151, Start Num: 11

Candidate Starts for GalacticEye_9:

(8, 10878), (Start: 11 @10923 has 12 MA's), (25, 10986), (26, 10995), (44, 11118), (59, 11232), (79, 11361), (89, 11448), (92, 11472), (96, 11514), (99, 11574), (101, 11589), (106, 11781), (112, 11901), (115, 11946), (122, 12144), (125, 12195), (126, 12201), (130, 12300), (133, 12339), (134, 12357),

(136, 12363), (138, 12384), (141, 12423), (142, 12426), (146, 12495), (147, 12516), (148, 12519), (151, 12531), (155, 12564), (159, 12606), (168, 12753), (170, 12771), (177, 12843), (188, 12936), (191, 12966), (192, 12969), (197, 13011), (202, 13065), (205, 13113),

Gene: Getalong_35 Start: 27115, Stop: 29283, Start Num: 14

Candidate Starts for Getalong_35:

(9, 27082), (Start: 13 @27112 has 1 MA's), (Start: 14 @27115 has 8 MA's), (18, 27127), (21, 27136), (29, 27187), (36, 27226), (39, 27244), (Start: 40 @27247 has 2 MA's), (45, 27304), (55, 27379), (60, 27403), (61, 27412), (68, 27454), (70, 27463), (71, 27469), (72, 27472), (96, 27652), (101, 27727), (107, 27940), (111, 28012), (112, 28039), (113, 28045), (115, 28084), (123, 28315), (126, 28339), (127, 28369), (130, 28438), (138, 28522), (139, 28543), (148, 28657), (150, 28666), (156, 28726), (159, 28744), (169, 28906), (172, 28918), (174, 28945), (178, 29005), (180, 29023), (181, 29032), (189, 29077), (191, 29098), (192, 29101), (195, 29125), (200, 29170), (204, 29236), (205, 29245), (206, 29254),

Gene: Guacamole_30 Start: 25271, Stop: 27562, Start Num: 6

Candidate Starts for Guacamole_30:

(Start: 6 @25271 has 6 MA's), (7, 25289), (16, 25361), (22, 25379), (23, 25382), (35, 25463), (46, 25559), (47, 25574), (70, 25703), (80, 25766), (81, 25778), (82, 25781), (96, 25913), (101, 25988), (102, 26012), (106, 26180), (111, 26273), (112, 26300), (115, 26345), (117, 26456), (118, 26474), (119, 26501), (122, 26543), (124, 26579), (125, 26594), (126, 26600), (134, 26756), (136, 26762), (138, 26783), (154, 26951), (168, 27161), (177, 27251), (188, 27347), (191, 27377), (192, 27380), (205, 27524),

Gene: Guillaume_9 Start: 10934, Stop: 13183, Start Num: 11

Candidate Starts for Guillaume_9:

(8, 10889), (Start: 11 @10934 has 12 MA's), (25, 10997), (26, 11006), (44, 11129), (59, 11243), (79, 11372), (89, 11480), (92, 11504), (96, 11546), (99, 11606), (101, 11621), (106, 11813), (112, 11933), (115, 11978), (122, 12176), (125, 12227), (126, 12233), (130, 12332), (133, 12371), (134, 12389), (136, 12395), (138, 12416), (141, 12455), (142, 12458), (146, 12527), (147, 12548), (148, 12551), (151, 12563), (155, 12596), (159, 12638), (168, 12785), (170, 12803), (177, 12875), (188, 12968), (191, 12998), (192, 13001), (197, 13043), (202, 13097), (205, 13145),

Gene: Horus_34 Start: 26360, Stop: 28528, Start Num: 14

Candidate Starts for Horus_34:

(9, 26327), (Start: 13 @26357 has 1 MA's), (Start: 14 @26360 has 8 MA's), (18, 26372), (21, 26381), (29, 26432), (36, 26471), (39, 26489), (Start: 40 @26492 has 2 MA's), (45, 26549), (55, 26624), (60, 26648), (61, 26657), (68, 26699), (70, 26708), (71, 26714), (72, 26717), (96, 26897), (101, 26972), (107, 27185), (111, 27257), (112, 27284), (113, 27290), (115, 27329), (123, 27560), (126, 27584), (127, 27614), (130, 27683), (138, 27767), (139, 27788), (148, 27902), (150, 27911), (156, 27971), (159, 27989), (169, 28151), (172, 28163), (174, 28190), (178, 28250), (180, 28268), (181, 28277), (189, 28322), (191, 28343), (192, 28346), (195, 28370), (198, 28397), (200, 28415), (204, 28481), (205, 28490), (206, 28499),

Gene: Jalammah_32 Start: 26022, Stop: 28295, Start Num: 6

Candidate Starts for Jalammah_32:

(Start: 6 @26022 has 6 MA's), (7, 26040), (15, 26109), (19, 26121), (22, 26130), (23, 26133), (35, 26214), (46, 26310), (47, 26325), (51, 26346), (70, 26454), (101, 26739), (107, 26952), (111, 27024), (112, 27051), (113, 27057), (115, 27096), (123, 27327), (126, 27351), (127, 27381), (130, 27450), (134, 27507), (138, 27534), (139, 27555), (148, 27669), (150, 27678), (159, 27756), (169, 27918), (172, 27930), (174, 27957), (178, 28017), (180, 28035), (181, 28044), (189, 28089), (191, 28110), (192, 28113), (195, 28137), (200, 28182), (204, 28248), (205, 28257), (206, 28266),

Gene: JasperJr_30 Start: 25271, Stop: 27562, Start Num: 6

Candidate Starts for JasperJr_30:

(Start: 6 @25271 has 6 MA's), (7, 25289), (16, 25361), (22, 25379), (23, 25382), (35, 25463), (46, 25559), (47, 25574), (70, 25703), (80, 25766), (81, 25778), (82, 25781), (96, 25913), (101, 25988), (102, 26012), (106, 26180), (111, 26273), (112, 26300), (115, 26345), (117, 26456), (118, 26474), (119, 26501), (122, 26543), (124, 26579), (125, 26594), (126, 26600), (134, 26756), (136, 26762), (138, 26783), (154, 26951), (168, 27161), (177, 27251), (188, 27347), (191, 27377), (192, 27380), (205, 27524),

Gene: Jormungandr_9 Start: 10937, Stop: 13165, Start Num: 11

Candidate Starts for Jormungandr_9:

(8, 10892), (Start: 11 @10937 has 12 MA's), (25, 11000), (26, 11009), (44, 11132), (59, 11246), (79, 11375), (89, 11462), (92, 11486), (96, 11528), (99, 11588), (101, 11603), (106, 11795), (112, 11915), (115, 11960), (122, 12158), (125, 12209), (126, 12215), (130, 12314), (133, 12353), (134, 12371), (136, 12377), (138, 12398), (141, 12437), (142, 12440), (146, 12509), (147, 12530), (148, 12533), (151, 12545), (155, 12578), (159, 12620), (168, 12767), (170, 12785), (177, 12857), (188, 12950), (191, 12980), (192, 12983), (197, 13025), (202, 13079), (205, 13127),

Gene: KidneyBean_21 Start: 10229, Stop: 12265, Start Num: 41

Candidate Starts for KidneyBean_21:

(Start: 41 @10229 has 4 MA's), (49, 10310), (59, 10370), (64, 10397), (74, 10460), (78, 10484), (83, 10499), (84, 10502), (93, 10601), (104, 10805), (109, 10952), (112, 11021), (116, 11078), (120, 11222), (121, 11243), (122, 11258), (123, 11291), (126, 11315), (129, 11399), (137, 11489), (138, 11498), (158, 11723), (166, 11849), (168, 11873), (173, 11924), (177, 11963), (179, 12002), (183, 12023), (193, 12101), (203, 12218), (204, 12221),

Gene: Kurt_21 Start: 10466, Stop: 12502, Start Num: 41

Candidate Starts for Kurt_21:

(Start: 41 @10466 has 4 MA's), (49, 10547), (59, 10607), (64, 10634), (74, 10697), (78, 10721), (83, 10736), (84, 10739), (93, 10838), (104, 11042), (109, 11189), (112, 11258), (116, 11315), (120, 11459), (121, 11480), (122, 11495), (123, 11528), (126, 11552), (129, 11636), (137, 11726), (138, 11735), (158, 11960), (166, 12086), (168, 12110), (173, 12161), (177, 12200), (179, 12239), (183, 12260), (193, 12338), (203, 12455), (204, 12458),

Gene: Kuwabara_33 Start: 25711, Stop: 27840, Start Num: 14

Candidate Starts for Kuwabara_33:

(4, 25615), (9, 25678), (Start: 13 @25708 has 1 MA's), (Start: 14 @25711 has 8 MA's), (18, 25723), (21, 25732), (29, 25783), (36, 25822), (39, 25840), (Start: 40 @25843 has 2 MA's), (55, 25975), (61, 26008), (66, 26047), (70, 26059), (71, 26065), (72, 26068), (101, 26284), (107, 26497), (111, 26569), (112, 26596), (113, 26602), (115, 26641), (123, 26872), (126, 26896), (127, 26926), (130, 26995), (138, 27079), (139, 27100), (148, 27214), (150, 27223), (155, 27259), (159, 27301), (170, 27466), (171, 27469), (172, 27475), (175, 27511), (177, 27538), (178, 27562), (180, 27580), (181, 27589), (190, 27652), (191, 27655), (192, 27658), (194, 27679), (197, 27700), (205, 27802),

Gene: Leroy_34 Start: 26361, Stop: 28529, Start Num: 14

Candidate Starts for Leroy_34:

(9, 26328), (Start: 13 @26358 has 1 MA's), (Start: 14 @26361 has 8 MA's), (18, 26373), (21, 26382), (29, 26433), (36, 26472), (39, 26490), (Start: 40 @26493 has 2 MA's), (45, 26550), (55, 26625), (60, 26649), (61, 26658), (68, 26700), (70, 26709), (71, 26715), (72, 26718), (96, 26898), (101, 26973), (107, 27186), (111, 27258), (112, 27285), (113, 27291), (115, 27330), (123, 27561), (126, 27585), (127, 27615), (130, 27684), (138, 27768), (139, 27789), (148, 27903), (150, 27912), (156, 27972), (159, 27990), (169, 28152), (172, 28164), (174, 28191), (178, 28251), (180, 28269), (181, 28278), (189, 28323), (191, 28344), (192, 28347), (195, 28371), (198, 28398), (200, 28416), (204, 28482),

(205, 28491), (206, 28500),

Gene: LuckyLeo_3 Start: 3182, Stop: 5059, Start Num: 57

Candidate Starts for LuckyLeo_3:

(Start: 57 @3182 has 2 MA's), (85, 3338), (91, 3389), (95, 3419), (99, 3488), (100, 3491), (105, 3638), (108, 3725), (109, 3746), (111, 3788), (112, 3815), (113, 3821), (114, 3848), (120, 4016), (125, 4103), (126, 4109), (129, 4193), (133, 4247), (138, 4292), (140, 4328), (149, 4436), (151, 4445), (153, 4457), (155, 4478), (163, 4589), (164, 4601), (168, 4667), (172, 4694), (173, 4718), (179, 4796), (180, 4799), (197, 4922), (198, 4931), (204, 5015),

Gene: Luker_9 Start: 10917, Stop: 13145, Start Num: 11

Candidate Starts for Luker_9:

(8, 10872), (Start: 11 @10917 has 12 MA's), (25, 10980), (26, 10989), (44, 11112), (59, 11226), (79, 11355), (89, 11442), (92, 11466), (96, 11508), (99, 11568), (101, 11583), (106, 11775), (112, 11895), (115, 11940), (122, 12138), (125, 12189), (126, 12195), (130, 12294), (133, 12333), (134, 12351), (136, 12357), (138, 12378), (141, 12417), (142, 12420), (146, 12489), (147, 12510), (148, 12513), (151, 12525), (155, 12558), (159, 12600), (168, 12747), (170, 12765), (177, 12837), (186, 12915), (188, 12930), (191, 12960), (192, 12963), (197, 13005), (202, 13059), (205, 13107),

Gene: Minos_9 Start: 10923, Stop: 13151, Start Num: 11

Candidate Starts for Minos_9:

(8, 10878), (Start: 11 @10923 has 12 MA's), (25, 10986), (26, 10995), (44, 11118), (59, 11232), (79, 11361), (89, 11448), (92, 11472), (96, 11514), (99, 11574), (101, 11589), (106, 11781), (112, 11901), (115, 11946), (122, 12144), (125, 12195), (126, 12201), (130, 12300), (133, 12339), (134, 12357), (136, 12363), (138, 12384), (141, 12423), (142, 12426), (146, 12495), (147, 12516), (148, 12519), (151, 12531), (155, 12564), (159, 12606), (168, 12753), (170, 12771), (177, 12843), (188, 12936), (191, 12966), (192, 12969), (197, 13011), (202, 13065), (205, 13113),

Gene: MintFen_30 Start: 25225, Stop: 27615, Start Num: 6

Candidate Starts for MintFen_30:

(Start: 6 @25225 has 6 MA's), (7, 25243), (16, 25315), (22, 25333), (23, 25336), (46, 25513), (47, 25528), (70, 25657), (81, 25732), (107, 26272), (111, 26344), (112, 26371), (113, 26377), (115, 26416), (123, 26647), (126, 26671), (127, 26701), (130, 26770), (134, 26827), (138, 26854), (139, 26875), (140, 26887), (148, 26989), (150, 26998), (156, 27058), (159, 27076), (169, 27238), (172, 27250), (174, 27277), (178, 27337), (180, 27355), (181, 27364), (189, 27409), (191, 27430), (192, 27433), (195, 27457), (200, 27502), (204, 27568), (205, 27577), (206, 27586),

Gene: MrWormie_9 Start: 10087, Stop: 12315, Start Num: 11

Candidate Starts for MrWormie_9:

(8, 10042), (Start: 11 @10087 has 12 MA's), (25, 10150), (26, 10159), (44, 10282), (59, 10396), (79, 10525), (89, 10612), (92, 10636), (96, 10678), (99, 10738), (101, 10753), (106, 10945), (112, 11065), (115, 11110), (122, 11308), (125, 11359), (126, 11365), (130, 11464), (133, 11503), (134, 11521), (136, 11527), (138, 11548), (141, 11587), (142, 11590), (146, 11659), (147, 11680), (148, 11683), (151, 11695), (155, 11728), (159, 11770), (168, 11917), (170, 11935), (177, 12007), (188, 12100), (191, 12130), (192, 12133), (197, 12175), (202, 12229), (205, 12277),

Gene: Newt_9 Start: 10934, Stop: 13162, Start Num: 11

Candidate Starts for Newt_9:

(8, 10889), (Start: 11 @10934 has 12 MA's), (25, 10997), (26, 11006), (44, 11129), (59, 11243), (79, 11372), (89, 11459), (92, 11483), (96, 11525), (99, 11585), (101, 11600), (106, 11792), (112, 11912), (115, 11957), (122, 12155), (125, 12206), (126, 12212), (130, 12311), (133, 12350), (134, 12368), (136, 12374), (138, 12395), (141, 12434), (142, 12437), (146, 12506), (147, 12527), (148, 12530), (151, 12542), (155, 12575), (159, 12617), (168, 12764), (170, 12782), (177, 12854), (188, 12947),

(191, 12977), (192, 12980), (197, 13022), (202, 13076), (205, 13124),

Gene: Nimi13_9 Start: 10935, Stop: 13163, Start Num: 11

Candidate Starts for Nimi13_9:

(8, 10890), (Start: 11 @10935 has 12 MA's), (25, 10998), (26, 11007), (44, 11130), (59, 11244), (79, 11373), (89, 11460), (92, 11484), (96, 11526), (99, 11586), (101, 11601), (106, 11793), (112, 11913), (115, 11958), (122, 12156), (125, 12207), (126, 12213), (130, 12312), (133, 12351), (134, 12369), (136, 12375), (138, 12396), (141, 12435), (142, 12438), (146, 12507), (147, 12528), (148, 12531), (151, 12543), (155, 12576), (159, 12618), (168, 12765), (170, 12783), (177, 12855), (188, 12948), (191, 12978), (192, 12981), (197, 13023), (202, 13077), (205, 13125),

Gene: Periwinkle_36 Start: 26805, Stop: 28973, Start Num: 14

Candidate Starts for Periwinkle_36:

(9, 26772), (Start: 13 @26802 has 1 MA's), (Start: 14 @26805 has 8 MA's), (18, 26817), (21, 26826), (29, 26877), (36, 26916), (39, 26934), (Start: 40 @26937 has 2 MA's), (45, 26994), (55, 27069), (60, 27093), (61, 27102), (68, 27144), (70, 27153), (71, 27159), (72, 27162), (96, 27342), (101, 27417), (107, 27630), (111, 27702), (112, 27729), (113, 27735), (115, 27774), (123, 28005), (126, 28029), (127, 28059), (130, 28128), (138, 28212), (139, 28233), (148, 28347), (150, 28356), (156, 28416), (159, 28434), (169, 28596), (172, 28608), (174, 28635), (178, 28695), (180, 28713), (181, 28722), (189, 28767), (191, 28788), (192, 28791), (195, 28815), (198, 28842), (200, 28860), (204, 28926), (205, 28935), (206, 28944),

Gene: Phomeo_20 Start: 10116, Stop: 12152, Start Num: 41

Candidate Starts for Phomeo_20:

(Start: 41 @10116 has 4 MA's), (49, 10197), (59, 10257), (64, 10284), (74, 10347), (78, 10371), (83, 10386), (84, 10389), (93, 10488), (104, 10692), (109, 10839), (112, 10908), (116, 10965), (120, 11109), (121, 11130), (122, 11145), (123, 11178), (126, 11202), (129, 11286), (138, 11385), (158, 11610), (166, 11736), (168, 11760), (173, 11811), (177, 11850), (179, 11889), (183, 11910), (193, 11988), (203, 12105), (204, 12108),

Gene: Posh_31 Start: 25600, Stop: 27681, Start Num: 30

Candidate Starts for Posh_31:

(Start: 30 @25600 has 2 MA's), (69, 25846), (73, 25861), (77, 25888), (80, 25909), (81, 25915), (87, 25972), (96, 26032), (101, 26107), (106, 26299), (111, 26392), (112, 26419), (115, 26464), (117, 26575), (118, 26593), (119, 26620), (122, 26662), (124, 26698), (125, 26713), (126, 26719), (136, 26881), (138, 26902), (154, 27070), (168, 27280), (177, 27370), (188, 27466), (191, 27496), (192, 27499), (205, 27643),

Gene: Pupper_97 Start: 49017, Stop: 50726, Start Num: 86

Candidate Starts for Pupper_97:

(67, 48924), (Start: 86 @49017 has 3 MA's), (88, 49032), (101, 49173), (108, 49395), (109, 49413), (112, 49482), (120, 49683), (123, 49752), (126, 49776), (129, 49860), (138, 49959), (142, 50004), (144, 50052), (146, 50076), (158, 50184), (165, 50307), (166, 50310), (168, 50334), (170, 50352), (173, 50385), (190, 50541), (196, 50586), (204, 50682),

Gene: SCentae_96 Start: 49163, Stop: 50872, Start Num: 86

Candidate Starts for SCentae_96:

(67, 49070), (Start: 86 @49163 has 3 MA's), (88, 49178), (101, 49319), (108, 49541), (109, 49559), (112, 49628), (120, 49829), (123, 49898), (126, 49922), (128, 49973), (129, 50006), (138, 50105), (142, 50150), (144, 50198), (158, 50330), (165, 50453), (166, 50456), (168, 50480), (170, 50498), (173, 50531), (190, 50687), (196, 50732), (204, 50828),

Gene: Schnabeltier_29 Start: 24627, Stop: 26651, Start Num: 42

Candidate Starts for Schnabeltier_29:

(Start: 42 @24627 has 1 MA's), (65, 24804), (90, 24969), (96, 25020), (101, 25095), (107, 25308), (111, 25380), (112, 25407), (113, 25413), (115, 25452), (123, 25683), (126, 25707), (127, 25737), (130, 25806), (134, 25863), (138, 25890), (139, 25911), (140, 25923), (148, 26025), (150, 26034), (156, 26094), (159, 26112), (166, 26235), (169, 26274), (172, 26286), (174, 26313), (178, 26373), (180, 26391), (181, 26400), (189, 26445), (191, 26466), (192, 26469), (195, 26493), (200, 26538), (204, 26604), (205, 26613), (206, 26622),

Gene: Skysand_22 Start: 10210, Stop: 12096, Start Num: 43

Candidate Starts for Skysand_22:

(Start: 43 @10210 has 2 MA's), (49, 10267), (64, 10354), (65, 10381), (76, 10429), (94, 10471), (100, 10531), (104, 10636), (108, 10765), (109, 10783), (112, 10852), (113, 10858), (116, 10909), (120, 11053), (121, 11074), (122, 11089), (123, 11122), (126, 11146), (129, 11230), (138, 11329), (158, 11554), (166, 11680), (170, 11722), (172, 11731), (173, 11755), (179, 11833), (183, 11854), (196, 11956), (204, 12052),

Gene: Sticker17_9 Start: 10934, Stop: 13162, Start Num: 11

Candidate Starts for Sticker17_9:

(8, 10889), (Start: 11 @10934 has 12 MA's), (25, 10997), (26, 11006), (44, 11129), (59, 11243), (79, 11372), (89, 11459), (92, 11483), (96, 11525), (99, 11585), (101, 11600), (106, 11792), (112, 11912), (115, 11957), (122, 12155), (125, 12206), (126, 12212), (130, 12311), (133, 12350), (134, 12368), (136, 12374), (138, 12395), (141, 12434), (142, 12437), (146, 12506), (147, 12527), (148, 12530), (151, 12542), (155, 12575), (159, 12617), (168, 12764), (170, 12782), (177, 12854), (188, 12947), (191, 12977), (192, 12980), (197, 13022), (202, 13076), (205, 13124),

Gene: Sukkupi_23 Start: 9484, Stop: 11301, Start Num: 62

Candidate Starts for Sukkupi_23:

(Start: 62 @9484 has 3 MA's), (71, 9535), (96, 9676), (97, 9691), (99, 9730), (100, 9733), (108, 9967), (109, 9988), (111, 10030), (112, 10057), (113, 10063), (114, 10090), (120, 10258), (126, 10351), (127, 10381), (129, 10435), (138, 10534), (140, 10570), (143, 10588), (149, 10678), (151, 10687), (153, 10699), (155, 10720), (158, 10759), (161, 10780), (163, 10831), (168, 10909), (172, 10936), (173, 10960), (176, 10975), (179, 11038), (180, 11041), (197, 11164), (198, 11173), (204, 11257),

Gene: Teal_9 Start: 10911, Stop: 13139, Start Num: 11

Candidate Starts for Teal_9:

(8, 10866), (Start: 11 @10911 has 12 MA's), (25, 10974), (26, 10983), (44, 11106), (59, 11220), (79, 11349), (89, 11436), (92, 11460), (96, 11502), (99, 11562), (101, 11577), (106, 11769), (112, 11889), (115, 11934), (122, 12132), (125, 12183), (126, 12189), (130, 12288), (133, 12327), (134, 12345), (136, 12351), (138, 12372), (141, 12411), (142, 12414), (146, 12483), (147, 12504), (148, 12507), (151, 12519), (155, 12552), (159, 12594), (168, 12741), (170, 12759), (177, 12831), (188, 12924), (191, 12954), (192, 12957), (197, 12999), (202, 13053), (205, 13101),

Gene: Wisp_29 Start: 24983, Stop: 27256, Start Num: 6

Candidate Starts for Wisp_29:

(1, 24806), (Start: 6 @24983 has 6 MA's), (7, 25001), (15, 25070), (19, 25082), (22, 25091), (23, 25094), (31, 25160), (52, 25307), (81, 25490), (103, 25775), (107, 25913), (111, 25985), (112, 26012), (115, 26057), (122, 26255), (123, 26288), (125, 26306), (126, 26312), (128, 26363), (129, 26396), (131, 26417), (134, 26468), (136, 26474), (138, 26495), (157, 26705), (159, 26717), (160, 26723), (162, 26783), (167, 26855), (168, 26864), (170, 26882), (172, 26891), (174, 26918), (182, 27008), (189, 27050), (191, 27071), (192, 27074), (193, 27089), (194, 27095), (196, 27113),

Gene: Yndexa_23 Start: 9484, Stop: 11301, Start Num: 62

Candidate Starts for Yndexa_23:

(Start: 62 @9484 has 3 MA's), (71, 9535), (96, 9676), (97, 9691), (99, 9730), (100, 9733), (108, 9967), (109, 9988), (111, 10030), (112, 10057), (113, 10063), (114, 10090), (120, 10258), (126, 10351), (127, 10381), (129, 10435), (138, 10534), (140, 10570), (143, 10588), (149, 10678), (151, 10687), (153, 10699), (155, 10720), (158, 10759), (161, 10780), (163, 10831), (168, 10909), (172, 10936), (173, 10960), (176, 10975), (179, 11038), (180, 11041), (197, 11164), (198, 11173), (204, 11257),