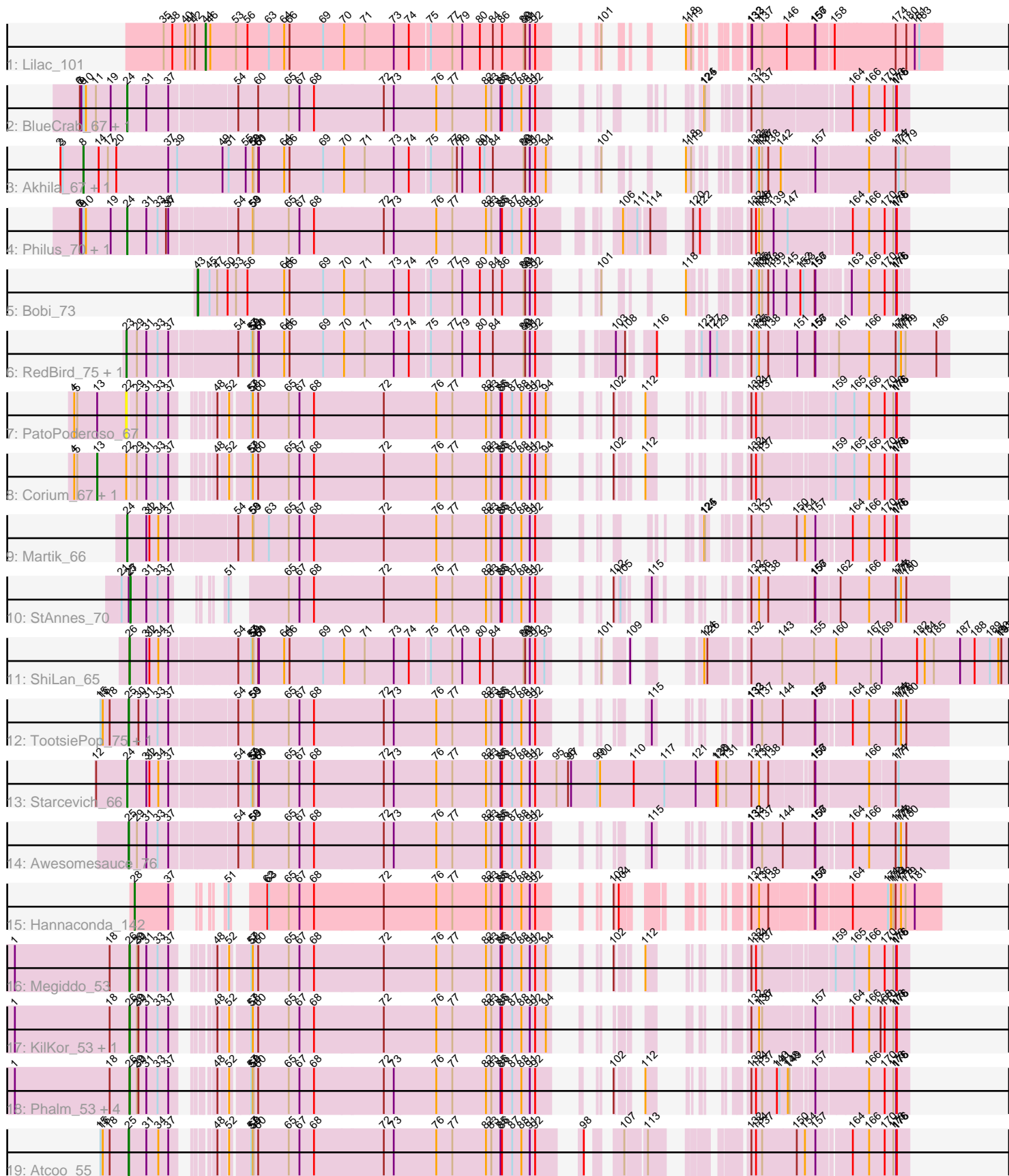


Pham 303584



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 303584 Report

This analysis was run 06/08/26 on database version 649.

Pham number 303584 has 30 members, 2 are drafts.

Phages represented in each track:

- Track 1 : Lilac_101
- Track 2 : BlueCrab_67, FreddyB_67
- Track 3 : Akhila_67, MilanaBonita_66
- Track 4 : Philus_70, DRBy19_70
- Track 5 : Bobi_73
- Track 6 : RedBird_75, Dorothy_75
- Track 7 : PatoPoderoso_67
- Track 8 : Corium_67, KingJulian_72
- Track 9 : Martik_66
- Track 10 : StAnnes_70
- Track 11 : ShiLan_65
- Track 12 : TootsiePop_75, Misha28_75
- Track 13 : Starcevich_66
- Track 14 : Awesomesauce_76
- Track 15 : Hannaconda_142
- Track 16 : Megiddo_53
- Track 17 : KilKor_53, Willsammy_52
- Track 18 : Phalm_53, CactusJack_53, StressBall_53, Glaske_53, Gavriela_53
- Track 19 : Atcoo_55

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

The start number called the most often in the published annotations is 26, it was called in 9 of the 28 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- CactusJack_53, Gavriela_53, Glaske_53, KilKor_53, Megiddo_53, Phalm_53, ShiLan_65, StressBall_53, Willsammy_52,

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

-

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

- Akhila_67, Atcoo_55, Awesomesauce_76, BlueCrab_67, Bobi_73, Corium_67, DRBy19_70, Dorothy_75, FreddyB_67, Hannaconda_142, KingJulian_72, Lilac_101, Martik_66, MilanaBonita_66, Misha28_75, PatoPoderoso_67, Philus_70, RedBird_75, StAnnes_70, Starcevich_66, TootsiePop_75,

Summary by start number:

Start 8:

- Found in 2 of 30 (6.7%) of genes in pham
- Manual Annotations of this start: 2 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Akhila_67 (F1), MilanaBonita_66 (F1),

Start 13:

- Found in 3 of 30 (10.0%) of genes in pham
- Manual Annotations of this start: 1 of 28
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Corium_67 (F1), KingJulian_72 (F1),

Start 22:

- Found in 3 of 30 (10.0%) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: PatoPoderoso_67 (F1),

Start 23:

- Found in 2 of 30 (6.7%) of genes in pham
- Manual Annotations of this start: 2 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dorothy_75 (F1), RedBird_75 (F1),

Start 24:

- Found in 6 of 30 (20.0%) of genes in pham
- Manual Annotations of this start: 6 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BlueCrab_67 (F1), DRBy19_70 (F1), FreddyB_67 (F1), Martik_66 (F1), Philus_70 (F1), Starcevich_66 (F1),

Start 25:

- Found in 5 of 30 (16.7%) of genes in pham
- Manual Annotations of this start: 4 of 28
- Called 80.0% of time when present
- Phage (with cluster) where this start called: Atcoo_55 (P1), Awesomesauce_76 (F1), Misha28_75 (F1), TootsiePop_75 (F1),

Start 26:

- Found in 9 of 30 (30.0%) of genes in pham
- Manual Annotations of this start: 9 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CactusJack_53 (P1), Gavriela_53 (P1), Glaske_53 (P1), KilKor_53 (P1), Megiddo_53 (P1), Phalm_53 (P1), ShiLan_65 (F1), StressBall_53 (P1), Willsammy_52 (P1),

Start 27:

- Found in 1 of 30 (3.3%) of genes in pham
- Manual Annotations of this start: 1 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: StAnnes_70 (F1),

Start 28:

- Found in 1 of 30 (3.3%) of genes in pham
- Manual Annotations of this start: 1 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hannaconda_142 (J),

Start 43:

- Found in 1 of 30 (3.3%) of genes in pham
- Manual Annotations of this start: 1 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bobi_73 (F1),

Start 44:

- Found in 1 of 30 (3.3%) of genes in pham
- Manual Annotations of this start: 1 of 28
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilac_101 (E),

Summary by clusters:

There are 4 clusters represented in this pham: F1, J, P1, E,

Info for manual annotations of cluster E:

- Start number 44 was manually annotated 1 time for cluster E.

Info for manual annotations of cluster F1:

- Start number 8 was manually annotated 2 times for cluster F1.
- Start number 13 was manually annotated 1 time for cluster F1.
- Start number 23 was manually annotated 2 times for cluster F1.
- Start number 24 was manually annotated 6 times for cluster F1.
- Start number 25 was manually annotated 3 times for cluster F1.
- Start number 26 was manually annotated 1 time for cluster F1.
- Start number 27 was manually annotated 1 time for cluster F1.
- Start number 43 was manually annotated 1 time for cluster F1.

Info for manual annotations of cluster J:

- Start number 28 was manually annotated 1 time for cluster J.

Info for manual annotations of cluster P1:

- Start number 25 was manually annotated 1 time for cluster P1.
- Start number 26 was manually annotated 8 times for cluster P1.

Gene Information:

Gene: Akhila_67 Start: 42333, Stop: 45014, Start Num: 8

Candidate Starts for Akhila_67:

(2, 42243), (3, 42252), (Start: 8 @42333 has 2 MA's), (14, 42393), (17, 42429), (20, 42462), (37, 42663), (39, 42696), (49, 42873), (51, 42897), (55, 42960), (58, 42984), (59, 42987), (60, 43005), (61, 43008), (64, 43107), (66, 43128), (69, 43260), (70, 43341), (71, 43422), (73, 43536), (74, 43593), (75, 43665), (77, 43749), (78, 43767), (79, 43788), (80, 43857), (81, 43875), (84, 43908), (89, 44022), (90, 44028), (91, 44046), (92, 44067), (94, 44109), (101, 44151), (118, 44196), (119, 44208), (132, 44313), (135, 44334), (136, 44343), (137, 44355), (138, 44379), (142, 44421), (157, 44520), (166, 44706), (174, 44808), (177, 44820), (179, 44847),

Gene: Atcoo_55 Start: 37344, Stop: 39803, Start Num: 25

Candidate Starts for Atcoo_55:

(15, 37242), (16, 37251), (18, 37278), (Start: 25 @37344 has 4 MA's), (31, 37404), (34, 37443), (37, 37473), (48, 37563), (52, 37590), (57, 37653), (58, 37659), (59, 37662), (60, 37680), (65, 37800), (67, 37842), (68, 37899), (72, 38169), (73, 38208), (76, 38373), (77, 38436), (82, 38568), (83, 38589), (85, 38625), (86, 38631), (87, 38670), (88, 38706), (91, 38739), (92, 38760), (98, 38865), (107, 38940), (113, 39012), (132, 39258), (134, 39276), (137, 39300), (150, 39435), (154, 39465), (157, 39501), (164, 39603), (166, 39660), (170, 39720), (173, 39753), (175, 39762), (176, 39765),

Gene: Awesomesauce_76 Start: 46078, Stop: 48528, Start Num: 25

Candidate Starts for Awesomesauce_76:

(Start: 25 @46078 has 4 MA's), (29, 46108), (31, 46138), (33, 46174), (37, 46207), (54, 46438), (58, 46489), (59, 46492), (65, 46630), (67, 46672), (68, 46729), (72, 46999), (73, 47038), (76, 47203), (77, 47266), (82, 47398), (83, 47419), (85, 47455), (86, 47461), (87, 47500), (88, 47536), (91, 47569), (92, 47590), (115, 47725), (132, 47827), (133, 47830), (137, 47869), (144, 47950), (156, 48061), (157, 48064), (164, 48166), (166, 48223), (174, 48325), (177, 48337), (178, 48346), (180, 48367),

Gene: BlueCrab_67 Start: 43881, Stop: 46157, Start Num: 24

Candidate Starts for BlueCrab_67:

(6, 43704), (7, 43710), (9, 43719), (10, 43728), (11, 43767), (19, 43824), (Start: 24 @43881 has 6 MA's), (31, 43938), (37, 44007), (54, 44238), (60, 44310), (65, 44430), (67, 44472), (68, 44529), (72, 44799), (73, 44838), (76, 45003), (77, 45066), (82, 45198), (83, 45219), (85, 45255), (86, 45261), (87, 45300), (88, 45336), (91, 45369), (92, 45390), (124, 45555), (125, 45558), (132, 45642), (137, 45684), (164, 45957), (166, 46014), (170, 46074), (173, 46107), (175, 46116), (176, 46119),

Gene: Bobi_73 Start: 44682, Stop: 46739, Start Num: 43

Candidate Starts for Bobi_73:

(Start: 43 @44682 has 1 MA's), (45, 44721), (47, 44751), (50, 44787), (53, 44820), (56, 44865), (64, 45009), (66, 45030), (69, 45162), (70, 45243), (71, 45324), (73, 45438), (74, 45495), (75, 45567), (77, 45651), (79, 45690), (80, 45759), (84, 45810), (86, 45843), (89, 45924), (90, 45930), (91, 45948), (92, 45969), (101, 46053), (118, 46095), (132, 46218), (135, 46239), (136, 46248), (137, 46260), (138, 46284), (139, 46305), (145, 46338), (152, 46383), (153, 46395), (156, 46434), (157, 46437), (163, 46539), (166, 46596), (170, 46656), (173, 46689), (175, 46698), (176, 46701),

Gene: CactusJack_53 Start: 36390, Stop: 38582, Start Num: 26

Candidate Starts for CactusJack_53:

(1, 35955), (18, 36327), (Start: 26 @36390 has 9 MA's), (29, 36417), (30, 36423), (31, 36447), (33, 36483), (37, 36516), (48, 36606), (52, 36633), (57, 36696), (58, 36702), (59, 36705), (60, 36723), (65, 36843), (67, 36885), (68, 36942), (72, 37212), (73, 37251), (76, 37416), (77, 37479), (82, 37611), (83, 37632), (85, 37668), (86, 37674), (87, 37713), (88, 37749), (91, 37782), (92, 37803), (102, 37887), (112, 37923), (132, 38046), (134, 38064), (137, 38088), (140, 38145), (141, 38151), (148, 38181), (149, 38187), (157, 38253), (166, 38439), (170, 38499), (173, 38532), (175, 38541), (176, 38544),

Gene: Corium_67 Start: 44493, Stop: 46790, Start Num: 13

Candidate Starts for Corium_67:

(4, 44409), (5, 44421), (Start: 13 @44493 has 1 MA's), (22, 44592), (29, 44622), (31, 44652), (33, 44688), (37, 44721), (48, 44811), (52, 44838), (57, 44901), (58, 44907), (60, 44928), (65, 45048), (67, 45090), (68, 45147), (72, 45417), (76, 45621), (77, 45684), (82, 45816), (83, 45837), (85, 45873), (86, 45879), (87, 45918), (88, 45954), (91, 45987), (92, 46008), (94, 46050), (102, 46092), (112, 46128), (132, 46251), (134, 46269), (137, 46293), (159, 46530), (165, 46593), (166, 46647), (170, 46707), (173, 46740), (175, 46749), (176, 46752),

Gene: DRBy19_70 Start: 44260, Stop: 46806, Start Num: 24

Candidate Starts for DRBy19_70:

(6, 44083), (7, 44089), (9, 44098), (10, 44107), (19, 44203), (Start: 24 @44260 has 6 MA's), (31, 44317), (33, 44353), (36, 44377), (37, 44386), (54, 44617), (58, 44668), (59, 44671), (65, 44809), (67, 44851), (68, 44908), (72, 45178), (73, 45217), (76, 45382), (77, 45445), (82, 45577), (83, 45598), (85, 45634), (86, 45640), (87, 45679), (88, 45715), (91, 45748), (92, 45769), (106, 45961), (111, 46009), (114, 46045), (120, 46135), (122, 46153), (132, 46276), (134, 46294), (136, 46306), (137, 46318), (139, 46363), (147, 46411), (164, 46606), (166, 46663), (170, 46723), (173, 46756), (175, 46765), (176, 46768),

Gene: Dorothy_75 Start: 45729, Stop: 48410, Start Num: 23

Candidate Starts for Dorothy_75:

(Start: 23 @45729 has 2 MA's), (29, 45768), (31, 45798), (33, 45834), (37, 45867), (54, 46098), (57, 46143), (58, 46149), (59, 46152), (60, 46170), (61, 46173), (64, 46272), (66, 46293), (69, 46425), (70, 46506), (71, 46587), (73, 46701), (74, 46758), (75, 46830), (77, 46914), (79, 46953), (80, 47022), (84, 47073), (89, 47187), (90, 47193), (91, 47211), (92, 47232), (103, 47379), (108, 47415), (116, 47484), (123, 47532), (127, 47565), (129, 47592), (132, 47685), (135, 47706), (136, 47715), (138, 47751), (151, 47853), (156, 47916), (157, 47919), (161, 47997), (166, 48105), (174, 48207), (177, 48219), (178, 48228), (179, 48246), (186, 48363),

Gene: FreddyB_67 Start: 41676, Stop: 43952, Start Num: 24

Candidate Starts for FreddyB_67:

(6, 41499), (7, 41505), (9, 41514), (10, 41523), (11, 41562), (19, 41619), (Start: 24 @41676 has 6 MA's), (31, 41733), (37, 41802), (54, 42033), (60, 42105), (65, 42225), (67, 42267), (68, 42324), (72, 42594), (73, 42633), (76, 42798), (77, 42861), (82, 42993), (83, 43014), (85, 43050), (86, 43056), (87, 43095), (88, 43131), (91, 43164), (92, 43185), (124, 43350), (125, 43353), (132, 43437), (137, 43479), (164, 43752), (166, 43809), (170, 43869), (173, 43902), (175, 43911), (176, 43914),

Gene: Gavriela_53 Start: 36390, Stop: 38582, Start Num: 26

Candidate Starts for Gavriela_53:

(1, 35955), (18, 36327), (Start: 26 @36390 has 9 MA's), (29, 36417), (30, 36423), (31, 36447), (33, 36483), (37, 36516), (48, 36606), (52, 36633), (57, 36696), (58, 36702), (59, 36705), (60, 36723), (65, 36843), (67, 36885), (68, 36942), (72, 37212), (73, 37251), (76, 37416), (77, 37479), (82, 37611), (83, 37632), (85, 37668), (86, 37674), (87, 37713), (88, 37749), (91, 37782), (92, 37803), (102, 37887), (112, 37923), (132, 38046), (134, 38064), (137, 38088), (140, 38145), (141, 38151), (148, 38181), (149, 38187), (157, 38253), (166, 38439), (170, 38499), (173, 38532), (175, 38541), (176, 38544),

Gene: Glaske_53 Start: 36390, Stop: 38582, Start Num: 26

Candidate Starts for Glaske_53:

(1, 35955), (18, 36327), (Start: 26 @36390 has 9 MA's), (29, 36417), (30, 36423), (31, 36447), (33, 36483), (37, 36516), (48, 36606), (52, 36633), (57, 36696), (58, 36702), (59, 36705), (60, 36723), (65, 36843), (67, 36885), (68, 36942), (72, 37212), (73, 37251), (76, 37416), (77, 37479), (82, 37611), (83, 37632), (85, 37668), (86, 37674), (87, 37713), (88, 37749), (91, 37782), (92, 37803), (102, 37887), (112, 37923), (132, 38046), (134, 38064), (137, 38088), (140, 38145), (141, 38151), (148, 38181), (149, 38187), (157, 38253), (166, 38439), (170, 38499), (173, 38532), (175, 38541), (176, 38544),

Gene: Hannaconda_142 Start: 76662, Stop: 78896, Start Num: 28

Candidate Starts for Hannaconda_142:

(Start: 28 @76662 has 1 MA's), (37, 76770), (51, 76815), (62, 76893), (63, 76899), (65, 76977), (67, 77019), (68, 77076), (72, 77346), (76, 77550), (77, 77613), (82, 77745), (83, 77766), (85, 77802), (86, 77808), (87, 77847), (88, 77883), (91, 77916), (92, 77937), (102, 78021), (104, 78030), (132, 78231), (136, 78261), (138, 78297), (156, 78438), (157, 78441), (164, 78558), (171, 78690), (172, 78702), (173, 78711), (174, 78720), (178, 78741), (179, 78759), (181, 78795),

Gene: KilKor_53 Start: 36390, Stop: 38570, Start Num: 26

Candidate Starts for KilKor_53:

(1, 35955), (18, 36327), (Start: 26 @36390 has 9 MA's), (29, 36417), (30, 36423), (31, 36447), (33, 36483), (37, 36516), (48, 36606), (52, 36633), (57, 36696), (58, 36702), (60, 36723), (65, 36843), (67, 36885), (68, 36942), (72, 37212), (76, 37416), (77, 37479), (82, 37611), (83, 37632), (85, 37668), (86, 37674), (87, 37713), (88, 37749), (91, 37782), (92, 37803), (94, 37845), (132, 38052), (136, 38082), (137, 38094), (157, 38268), (164, 38370), (166, 38427), (168, 38472), (170, 38487), (173, 38520), (175, 38529), (176, 38532),

Gene: KingJulian_72 Start: 44493, Stop: 46790, Start Num: 13

Candidate Starts for KingJulian_72:

(4, 44409), (5, 44421), (Start: 13 @44493 has 1 MA's), (22, 44592), (29, 44622), (31, 44652), (33, 44688), (37, 44721), (48, 44811), (52, 44838), (57, 44901), (58, 44907), (60, 44928), (65, 45048), (67, 45090), (68, 45147), (72, 45417), (76, 45621), (77, 45684), (82, 45816), (83, 45837), (85, 45873), (86, 45879), (87, 45918), (88, 45954), (91, 45987), (92, 46008), (94, 46050), (102, 46092), (112, 46128), (132, 46251), (134, 46269), (137, 46293), (159, 46530), (165, 46593), (166, 46647), (170, 46707), (173, 46740), (175, 46749), (176, 46752),

Gene: Lilac_101 Start: 58401, Stop: 60605, Start Num: 44

Candidate Starts for Lilac_101:

(35, 58254), (38, 58284), (40, 58332), (41, 58347), (42, 58359), (Start: 44 @58401 has 1 MA's), (46, 58419), (53, 58515), (56, 58560), (63, 58644), (64, 58704), (66, 58725), (69, 58857), (70, 58938), (71, 59019), (73, 59133), (74, 59190), (75, 59262), (77, 59346), (79, 59385), (80, 59454), (84, 59505), (86, 59538), (89, 59619), (90, 59625), (91, 59643), (92, 59664), (101, 59748), (118, 59793), (119, 59805), (132, 59910), (133, 59913), (137, 59952), (146, 60039), (156, 60141), (157, 60144), (158, 60207), (174, 60426), (180, 60468), (181, 60501), (183, 60516),

Gene: Martik_66 Start: 42749, Stop: 45055, Start Num: 24

Candidate Starts for Martik_66:

(Start: 24 @42749 has 6 MA's), (31, 42806), (32, 42818), (34, 42845), (37, 42875), (54, 43106), (58, 43157), (59, 43160), (63, 43220), (65, 43298), (67, 43340), (68, 43397), (72, 43667), (76, 43871), (77, 43934), (82, 44066), (83, 44087), (85, 44123), (86, 44129), (87, 44168), (88, 44204), (91, 44237), (92, 44258), (124, 44423), (125, 44426), (132, 44510), (137, 44552), (150, 44687), (154, 44717), (157, 44753), (164, 44855), (166, 44912), (170, 44972), (173, 45005), (175, 45014), (176, 45017),

Gene: Megiddo_53 Start: 36390, Stop: 38585, Start Num: 26

Candidate Starts for Megiddo_53:

(1, 35955), (18, 36327), (Start: 26 @36390 has 9 MA's), (29, 36417), (30, 36423), (31, 36447), (33, 36483), (37, 36516), (48, 36606), (52, 36633), (57, 36696), (58, 36702), (60, 36723), (65, 36843), (67, 36885), (68, 36942), (72, 37212), (76, 37416), (77, 37479), (82, 37611), (83, 37632), (85, 37668), (86, 37674), (87, 37713), (88, 37749), (91, 37782), (92, 37803), (94, 37845), (102, 37887), (112, 37923), (132, 38046), (134, 38064), (137, 38088), (159, 38325), (165, 38388), (166, 38442), (170, 38502), (173, 38535), (175, 38544), (176, 38547),

Gene: MilanaBonita_66 Start: 42333, Stop: 45014, Start Num: 8

Candidate Starts for MilanaBonita_66:

(2, 42243), (3, 42252), (Start: 8 @42333 has 2 MA's), (14, 42393), (17, 42429), (20, 42462), (37, 42663), (39, 42696), (49, 42873), (51, 42897), (55, 42960), (58, 42984), (59, 42987), (60, 43005), (61, 43008), (64, 43107), (66, 43128), (69, 43260), (70, 43341), (71, 43422), (73, 43536), (74, 43593), (75, 43665), (77, 43749), (78, 43767), (79, 43788), (80, 43857), (81, 43875), (84, 43908), (89, 44022), (90, 44028), (91, 44046), (92, 44067), (94, 44109), (101, 44151), (118, 44196), (119, 44208), (132, 44313), (135, 44334), (136, 44343), (137, 44355), (138, 44379), (142, 44421), (157, 44520), (166, 44706), (174, 44808), (177, 44820), (179, 44847),

Gene: Misha28_75 Start: 46524, Stop: 48974, Start Num: 25

Candidate Starts for Misha28_75:

(15, 46422), (16, 46431), (18, 46458), (Start: 25 @46524 has 4 MA's), (30, 46560), (31, 46584), (33, 46620), (37, 46653), (54, 46884), (58, 46935), (59, 46938), (65, 47076), (67, 47118), (68, 47175), (72, 47445), (73, 47484), (76, 47649), (77, 47712), (82, 47844), (83, 47865), (85, 47901), (86, 47907), (87, 47946), (88, 47982), (91, 48015), (92, 48036), (115, 48171), (132, 48273), (133, 48276), (137, 48315), (144, 48396), (156, 48507), (157, 48510), (164, 48612), (166, 48669), (174, 48771), (177, 48783), (178, 48792), (180, 48813),

Gene: PatoPoderoso_67 Start: 44592, Stop: 46790, Start Num: 22

Candidate Starts for PatoPoderoso_67:

(4, 44409), (5, 44421), (Start: 13 @44493 has 1 MA's), (22, 44592), (29, 44622), (31, 44652), (33, 44688), (37, 44721), (48, 44811), (52, 44838), (57, 44901), (58, 44907), (60, 44928), (65, 45048), (67, 45090), (68, 45147), (72, 45417), (76, 45621), (77, 45684), (82, 45816), (83, 45837), (85, 45873), (86, 45879), (87, 45918), (88, 45954), (91, 45987), (92, 46008), (94, 46050), (102, 46092), (112, 46128), (132, 46251), (134, 46269), (137, 46293), (159, 46530), (165, 46593), (166, 46647), (170, 46707), (173, 46740), (175, 46749), (176, 46752),

Gene: Phalm_53 Start: 36390, Stop: 38582, Start Num: 26

Candidate Starts for Phalm_53:

(1, 35955), (18, 36327), (Start: 26 @36390 has 9 MA's), (29, 36417), (30, 36423), (31, 36447), (33, 36483), (37, 36516), (48, 36606), (52, 36633), (57, 36696), (58, 36702), (59, 36705), (60, 36723), (65, 36843), (67, 36885), (68, 36942), (72, 37212), (73, 37251), (76, 37416), (77, 37479), (82, 37611), (83, 37632), (85, 37668), (86, 37674), (87, 37713), (88, 37749), (91, 37782), (92, 37803), (102, 37887), (112, 37923), (132, 38046), (134, 38064), (137, 38088), (140, 38145), (141, 38151), (148, 38181), (149, 38187), (157, 38253), (166, 38439), (170, 38499), (173, 38532), (175, 38541), (176, 38544),

Gene: Philus_70 Start: 44236, Stop: 46782, Start Num: 24

Candidate Starts for Philus_70:

(6, 44059), (7, 44065), (9, 44074), (10, 44083), (19, 44179), (Start: 24 @44236 has 6 MA's), (31, 44293), (33, 44329), (36, 44353), (37, 44362), (54, 44593), (58, 44644), (59, 44647), (65, 44785), (67, 44827), (68, 44884), (72, 45154), (73, 45193), (76, 45358), (77, 45421), (82, 45553), (83, 45574), (85, 45610), (86, 45616), (87, 45655), (88, 45691), (91, 45724), (92, 45745), (106, 45937), (111, 45985), (114, 46021), (120, 46111), (122, 46129), (132, 46252), (134, 46270), (136, 46282), (137, 46294), (139, 46339), (147, 46387), (164, 46582), (166, 46639), (170, 46699), (173, 46732), (175, 46741), (176, 46744),

Gene: RedBird_75 Start: 45596, Stop: 48277, Start Num: 23

Candidate Starts for RedBird_75:

(Start: 23 @45596 has 2 MA's), (29, 45635), (31, 45665), (33, 45701), (37, 45734), (54, 45965), (57, 46010), (58, 46016), (59, 46019), (60, 46037), (61, 46040), (64, 46139), (66, 46160), (69, 46292), (70, 46373), (71, 46454), (73, 46568), (74, 46625), (75, 46697), (77, 46781), (79, 46820), (80, 46889), (84, 46940), (89, 47054), (90, 47060), (91, 47078), (92, 47099), (103, 47246), (108, 47282), (116, 47351),

(123, 47399), (127, 47432), (129, 47459), (132, 47552), (135, 47573), (136, 47582), (138, 47618), (151, 47720), (156, 47783), (157, 47786), (161, 47864), (166, 47972), (174, 48074), (177, 48086), (178, 48095), (179, 48113), (186, 48230),

Gene: ShiLan_65 Start: 42785, Stop: 45667, Start Num: 26

Candidate Starts for ShiLan_65:

(Start: 26 @42785 has 9 MA's), (31, 42842), (32, 42854), (34, 42881), (37, 42911), (54, 43142), (57, 43187), (58, 43193), (59, 43196), (60, 43214), (61, 43217), (64, 43316), (66, 43337), (69, 43469), (70, 43550), (71, 43631), (73, 43745), (74, 43802), (75, 43874), (77, 43958), (79, 43997), (80, 44066), (84, 44117), (89, 44231), (90, 44237), (91, 44255), (92, 44276), (93, 44312), (101, 44360), (109, 44411), (124, 44513), (126, 44525), (132, 44657), (143, 44777), (155, 44900), (160, 44987), (167, 45122), (169, 45164), (182, 45299), (184, 45329), (185, 45365), (187, 45467), (188, 45524), (189, 45584), (190, 45617), (191, 45626), (192, 45629),

Gene: StAnnes_70 Start: 44611, Stop: 46869, Start Num: 27

Candidate Starts for StAnnes_70:

(21, 44581), (Start: 25 @44605 has 4 MA's), (Start: 27 @44611 has 1 MA's), (31, 44665), (33, 44701), (37, 44734), (51, 44779), (65, 44941), (67, 44983), (68, 45040), (72, 45310), (76, 45514), (77, 45577), (82, 45709), (83, 45730), (85, 45766), (86, 45772), (87, 45811), (88, 45847), (91, 45880), (92, 45901), (102, 45985), (105, 45997), (115, 46042), (132, 46162), (136, 46192), (138, 46228), (156, 46387), (157, 46390), (162, 46468), (166, 46576), (174, 46663), (177, 46675), (178, 46684), (180, 46705),

Gene: Starcevich_66 Start: 42297, Stop: 45341, Start Num: 24

Candidate Starts for Starcevich_66:

(12, 42183), (Start: 24 @42297 has 6 MA's), (31, 42354), (32, 42366), (34, 42393), (37, 42423), (54, 42654), (57, 42699), (58, 42705), (59, 42708), (60, 42726), (61, 42729), (65, 42846), (67, 42888), (68, 42945), (72, 43215), (73, 43254), (76, 43419), (77, 43482), (82, 43614), (83, 43635), (85, 43671), (86, 43677), (87, 43716), (88, 43752), (91, 43785), (92, 43806), (95, 43890), (96, 43935), (97, 43947), (99, 44049), (100, 44061), (110, 44193), (117, 44313), (121, 44436), (128, 44517), (130, 44523), (131, 44556), (132, 44655), (136, 44685), (138, 44721), (156, 44862), (157, 44865), (166, 45051), (174, 45138), (177, 45150),

Gene: StressBall_53 Start: 36390, Stop: 38582, Start Num: 26

Candidate Starts for StressBall_53:

(1, 35955), (18, 36327), (Start: 26 @36390 has 9 MA's), (29, 36417), (30, 36423), (31, 36447), (33, 36483), (37, 36516), (48, 36606), (52, 36633), (57, 36696), (58, 36702), (59, 36705), (60, 36723), (65, 36843), (67, 36885), (68, 36942), (72, 37212), (73, 37251), (76, 37416), (77, 37479), (82, 37611), (83, 37632), (85, 37668), (86, 37674), (87, 37713), (88, 37749), (91, 37782), (92, 37803), (102, 37887), (112, 37923), (132, 38046), (134, 38064), (137, 38088), (140, 38145), (141, 38151), (148, 38181), (149, 38187), (157, 38253), (166, 38439), (170, 38499), (173, 38532), (175, 38541), (176, 38544),

Gene: TootsiePop_75 Start: 46524, Stop: 48974, Start Num: 25

Candidate Starts for TootsiePop_75:

(15, 46422), (16, 46431), (18, 46458), (Start: 25 @46524 has 4 MA's), (30, 46560), (31, 46584), (33, 46620), (37, 46653), (54, 46884), (58, 46935), (59, 46938), (65, 47076), (67, 47118), (68, 47175), (72, 47445), (73, 47484), (76, 47649), (77, 47712), (82, 47844), (83, 47865), (85, 47901), (86, 47907), (87, 47946), (88, 47982), (91, 48015), (92, 48036), (115, 48171), (132, 48273), (133, 48276), (137, 48315), (144, 48396), (156, 48507), (157, 48510), (164, 48612), (166, 48669), (174, 48771), (177, 48783), (178, 48792), (180, 48813),

Gene: Willsammy_52 Start: 35873, Stop: 38053, Start Num: 26

Candidate Starts for Willsammy_52:

(1, 35438), (18, 35810), (Start: 26 @35873 has 9 MA's), (29, 35900), (30, 35906), (31, 35930), (33, 35966), (37, 35999), (48, 36089), (52, 36116), (57, 36179), (58, 36185), (60, 36206), (65, 36326), (67, 36368), (68, 36425), (72, 36695), (76, 36899), (77, 36962), (82, 37094), (83, 37115), (85, 37151), (86, 37157), (87, 37196), (88, 37232), (91, 37265), (92, 37286), (94, 37328), (132, 37535), (136, 37565), (137, 37577), (157, 37751), (164, 37853), (166, 37910), (168, 37955), (170, 37970), (173, 38003), (175, 38012), (176, 38015),