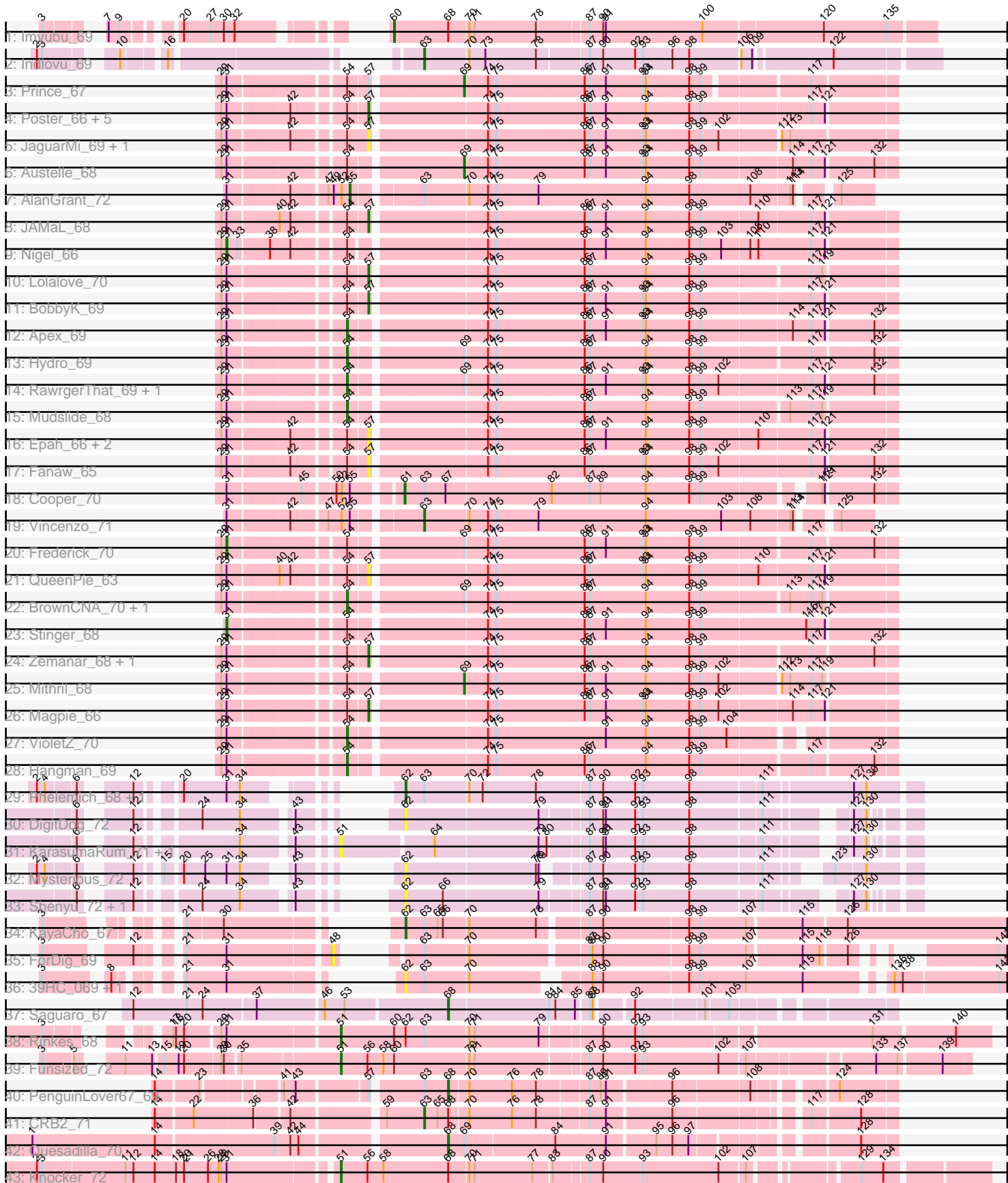


Pham 224605



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 224605 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224605 has 58 members, 21 are drafts.

Phages represented in each track:

- Track 1 : Imvubu_69
- Track 2 : Indlovu_69
- Track 3 : Prince_67
- Track 4 : Poster_66, ChrisnMich_68, Hally898_66, Ahwei_66, Nanao_67, Lambano_66
- Track 5 : JaguarMi_69, Xincheng_68
- Track 6 : Austelle_68
- Track 7 : AlanGrant_72
- Track 8 : JAMaL_68
- Track 9 : Nigel_66
- Track 10 : Lolalove_70
- Track 11 : BobbyK_69
- Track 12 : Apex_69
- Track 13 : Hydro_69
- Track 14 : RawrgerThat_69, Fortunato_69
- Track 15 : Mudslide_68
- Track 16 : Epah_66, Antihero_66, GinPorsche_66
- Track 17 : Fanaw_65
- Track 18 : Cooper_70
- Track 19 : Vincenzo_71
- Track 20 : Frederick_70
- Track 21 : QueenPie_63
- Track 22 : BrownCNA_70, Waleliano_68
- Track 23 : Stinger_68
- Track 24 : Zemanar_68, Heath_68
- Track 25 : Mithril_68
- Track 26 : Magpie_66
- Track 27 : VioletZ_70
- Track 28 : Hangman_69
- Track 29 : Phelemich_68, Reprobate_70
- Track 30 : DigitDog_72
- Track 31 : KarasumaRum_71, StinkyVeggy_71
- Track 32 : Mysterious_72
- Track 33 : Shenyu_72, Nangang_71
- Track 34 : KayaCho_67
- Track 35 : ForDig_69
- Track 36 : 39HC_069, 40BC_069

- Track 37 : Saguaro_67
- Track 38 : Rinkes_68
- Track 39 : Funsized_72
- Track 40 : PenguinLover67_69
- Track 41 : CRB2_71
- Track 42 : Quesadilla_70
- Track 43 : Knocker_72

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

The start number called the most often in the published annotations is 54, it was called in 9 of the 37 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Apex_69, BrownCNA_70, Fortunato_69, Hangman_69, Hydro_69, Mudslide_68, RawrgerThat_69, VioletZ_70, Waleliano_68,

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

- Ahwei_66, Antihero_66, Austelle_68, BobbyK_69, ChrisnMich_68, Epah_66, Fanaw_65, Frederick_70, GinPorsche_66, Hally898_66, Heath_68, JAMaL_68, JaguarMi_69, Lambano_66, Lolalove_70, Magpie_66, Mithril_68, Nanao_67, Nigel_66, Poster_66, Prince_67, QueenPie_63, Stinger_68, Xincheng_68, Zemanar_68,

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

- 39HC_069, 40BC_069, AlanGrant_72, CRB2_71, Cooper_70, DigitDog_72, ForDig_69, Funsized_72, Imvubu_69, Indlovu_69, KarasumaRum_71, KayaCho_67, Knocker_72, Mysterious_72, Nangang_71, PenguinLover67_69, Phelemich_68, Quesadilla_70, Reprobate_70, Rinkes_68, Saguaro_67, Shenyu_72, StinkyVeggy_71, Vincenzo_71,

Summary by start number:

Start 31:

- Found in 45 of 58 (77.6%) of genes in pham
- Manual Annotations of this start: 3 of 37
- Called 6.7% of time when present
- Phage (with cluster) where this start called: Frederick_70 (B4), Nigel_66 (B4), Stinger_68 (B4),

Start 48:

- Found in 1 of 58 (1.7%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ForDig_69 (B6),

Start 51:

- Found in 5 of 58 (8.6%) of genes in pham
- Manual Annotations of this start: 3 of 37
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Funsized_72 (B9), KarasumaRum_71 (B5), Knocker_72 (B9), Rinkes_68 (B9), StinkyVeggy_71 (B5),

Start 54:

- Found in 34 of 58 (58.6%) of genes in pham
- Manual Annotations of this start: 9 of 37
- Called 26.5% of time when present
- Phage (with cluster) where this start called: Apex_69 (B4), BrownCNA_70 (B4), Fortunato_69 (B4), Hangman_69 (B4), Hydro_69 (B4), Mudslide_68 (B4), RawrgerThat_69 (B4), VioletZ_70 (B4), Waleliano_68 (B4),

Start 55:

- Found in 3 of 58 (5.2%) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 33.3% of time when present
- Phage (with cluster) where this start called: AlanGrant_72 (B4),

Start 57:

- Found in 21 of 58 (36.2%) of genes in pham
- Manual Annotations of this start: 7 of 37
- Called 90.5% of time when present
- Phage (with cluster) where this start called: Ahwei_66 (B4), Antihero_66 (B4), BobbyK_69 (B4), ChrisnMich_68 (B4), Epah_66 (B4), Fanaw_65 (B4), GinPorsche_66 (B4), Hally898_66 (B4), Heath_68 (B4), JAMaL_68 (B4), JaguarMi_69 (B4), Lambano_66 (B4), Lolalove_70 (B4), Magpie_66 (B4), Nanao_67 (B4), Poster_66 (B4), QueenPie_63 (B4), Xincheng_68 (B4), Zemanar_68 (B4),

Start 60:

- Found in 3 of 58 (5.2%) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Imvubu_69 (B10),

Start 61:

- Found in 1 of 58 (1.7%) of genes in pham
- Manual Annotations of this start: 1 of 37
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cooper_70 (B4),

Start 62:

- Found in 10 of 58 (17.2%) of genes in pham
- Manual Annotations of this start: 3 of 37
- Called 90.0% of time when present
- Phage (with cluster) where this start called: 39HC_069 (B6), 40BC_069 (B6), DigitDog_72 (B5), KayaCho_67 (B6), Mysterious_72 (B5), Nangang_71 (B5), Phelemich_68 (B5), Reprobate_70 (B5), Shenyu_72 (B5),

Start 63:

- Found in 13 of 58 (22.4%) of genes in pham
- Manual Annotations of this start: 3 of 37
- Called 23.1% of time when present
- Phage (with cluster) where this start called: CRB2_71 (B9), Indlovu_69 (B11), Vincenzo_71 (B4),

Start 68:

- Found in 6 of 58 (10.3%) of genes in pham
- Manual Annotations of this start: 3 of 37
- Called 50.0% of time when present
- Phage (with cluster) where this start called: PenguinLover67_69 (B9), Quesadilla_70 (B9), Saguaro_67 (B7),

Start 69:

- Found in 10 of 58 (17.2%) of genes in pham
- Manual Annotations of this start: 3 of 37
- Called 30.0% of time when present
- Phage (with cluster) where this start called: Austelle_68 (B4), Mithril_68 (B4), Prince_67 (B4),

Summary by clusters:

There are 7 clusters represented in this pham: B4, B5, B6, B7, B10, B11, B9,

Info for manual annotations of cluster B10:

- Start number 60 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B11:

- Start number 63 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B4:

- Start number 31 was manually annotated 3 times for cluster B4.
- Start number 54 was manually annotated 9 times for cluster B4.
- Start number 55 was manually annotated 1 time for cluster B4.
- Start number 57 was manually annotated 7 times for cluster B4.
- Start number 61 was manually annotated 1 time for cluster B4.
- Start number 63 was manually annotated 1 time for cluster B4.
- Start number 69 was manually annotated 3 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 62 was manually annotated 2 times for cluster B5.

Info for manual annotations of cluster B6:

- Start number 62 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B7:

- Start number 68 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B9:

- Start number 51 was manually annotated 3 times for cluster B9.
- Start number 63 was manually annotated 1 time for cluster B9.
- Start number 68 was manually annotated 2 times for cluster B9.

Gene Information:

Gene: 39HC_069 Start: 58780, Stop: 59388, Start Num: 62

Candidate Starts for 39HC_069:

(3, 58525), (8, 58585), (21, 58630), (Start: 31 @58675 has 3 MA's), (Start: 62 @58780 has 3 MA's), (Start: 63 @58801 has 3 MA's), (70, 58849), (88, 58957), (90, 58969), (98, 59062), (99, 59074), (107, 59125), (115, 59188), (136, 59266), (138, 59275), (141, 59380),

Gene: 40BC_069 Start: 58780, Stop: 59388, Start Num: 62

Candidate Starts for 40BC_069:

(3, 58525), (8, 58585), (21, 58630), (Start: 31 @58675 has 3 MA's), (Start: 62 @58780 has 3 MA's), (Start: 63 @58801 has 3 MA's), (70, 58849), (88, 58957), (90, 58969), (98, 59062), (99, 59074), (107, 59125), (115, 59188), (136, 59266), (138, 59275), (141, 59380),

Gene: Ahwei_66 Start: 59056, Stop: 59619, Start Num: 57

Candidate Starts for Ahwei_66:

(29, 58912), (Start: 31 @58918 has 3 MA's), (42, 58984), (Start: 54 @59035 has 9 MA's), (Start: 57 @59056 has 7 MA's), (74, 59176), (75, 59185), (86, 59284), (87, 59290), (91, 59308), (94, 59353), (98, 59398), (99, 59410), (117, 59530), (121, 59545),

Gene: AlanGrant_72 Start: 61390, Stop: 61929, Start Num: 55

Candidate Starts for AlanGrant_72:

(Start: 31 @61264 has 3 MA's), (42, 61330), (47, 61366), (49, 61372), (52, 61381), (Start: 55 @61390 has 1 MA's), (Start: 63 @61456 has 3 MA's), (70, 61504), (74, 61525), (75, 61534), (79, 61582), (94, 61702), (98, 61747), (108, 61816), (113, 61858), (114, 61861), (125, 61894),

Gene: Antihero_66 Start: 59054, Stop: 59617, Start Num: 57

Candidate Starts for Antihero_66:

(29, 58910), (Start: 31 @58916 has 3 MA's), (42, 58982), (Start: 54 @59033 has 9 MA's), (Start: 57 @59054 has 7 MA's), (74, 59174), (75, 59183), (86, 59282), (87, 59288), (91, 59306), (94, 59351), (98, 59396), (99, 59408), (110, 59471), (117, 59528), (121, 59543),

Gene: Apex_69 Start: 60138, Stop: 60722, Start Num: 54

Candidate Starts for Apex_69:

(29, 60015), (Start: 31 @60021 has 3 MA's), (Start: 54 @60138 has 9 MA's), (74, 60279), (75, 60288), (86, 60387), (87, 60393), (91, 60411), (93, 60453), (94, 60456), (98, 60501), (99, 60513), (114, 60612), (117, 60633), (121, 60648), (132, 60699),

Gene: Austelle_68 Start: 60772, Stop: 61239, Start Num: 69

Candidate Starts for Austelle_68:

(29, 60532), (Start: 31 @60538 has 3 MA's), (Start: 54 @60655 has 9 MA's), (Start: 69 @60772 has 3 MA's), (74, 60796), (75, 60805), (86, 60904), (87, 60910), (91, 60928), (93, 60970), (94, 60973), (98, 61018), (99, 61030), (114, 61129), (117, 61150), (121, 61165), (132, 61216),

Gene: BobbyK_69 Start: 59936, Stop: 60499, Start Num: 57

Candidate Starts for BobbyK_69:

(29, 59792), (Start: 31 @59798 has 3 MA's), (Start: 54 @59915 has 9 MA's), (Start: 57 @59936 has 7 MA's), (74, 60056), (75, 60065), (86, 60164), (87, 60170), (91, 60188), (93, 60230), (94, 60233), (98, 60278), (99, 60290), (117, 60410), (121, 60425),

Gene: BrownCNA_70 Start: 60292, Stop: 60873, Start Num: 54

Candidate Starts for BrownCNA_70:

(29, 60169), (Start: 31 @60175 has 3 MA's), (Start: 54 @60292 has 9 MA's), (Start: 69 @60409 has 3 MA's), (74, 60433), (75, 60442), (86, 60541), (87, 60547), (94, 60610), (98, 60655), (99, 60667), (113, 60760), (117, 60784), (119, 60796),

Gene: CRB2_71 Start: 61691, Stop: 62164, Start Num: 63

Candidate Starts for CRB2_71:

(14, 61424), (22, 61463), (36, 61526), (42, 61559), (59, 61649), (Start: 63 @61691 has 3 MA's), (65, 61706), (Start: 68 @61718 has 3 MA's), (70, 61739), (76, 61787), (78, 61814), (87, 61868), (91, 61886), (96, 61949), (117, 62075), (128, 62126),

Gene: ChrisnMich_68 Start: 59038, Stop: 59601, Start Num: 57

Candidate Starts for ChrisnMich_68:

(29, 58894), (Start: 31 @58900 has 3 MA's), (42, 58966), (Start: 54 @59017 has 9 MA's), (Start: 57 @59038 has 7 MA's), (74, 59158), (75, 59167), (86, 59266), (87, 59272), (91, 59290), (94, 59335), (98, 59380), (99, 59392), (117, 59512), (121, 59527),

Gene: Cooper_70 Start: 59759, Stop: 60271, Start Num: 61

Candidate Starts for Cooper_70:

(Start: 31 @59591 has 3 MA's), (45, 59669), (50, 59699), (52, 59705), (Start: 55 @59714 has 1 MA's), (Start: 61 @59759 has 1 MA's), (Start: 63 @59780 has 3 MA's), (67, 59804), (82, 59921), (87, 59963), (89, 59975), (94, 60026), (98, 60071), (99, 60083), (119, 60194), (121, 60197), (132, 60248),

Gene: DigitDog_72 Start: 59928, Stop: 60428, Start Num: 62

Candidate Starts for DigitDog_72:

(6, 59703), (12, 59742), (24, 59796), (34, 59838), (43, 59886), (Start: 62 @59928 has 3 MA's), (79, 60075), (87, 60123), (90, 60138), (91, 60141), (92, 60174), (93, 60183), (98, 60234), (111, 60309), (127, 60378), (130, 60390),

Gene: Epah_66 Start: 59054, Stop: 59617, Start Num: 57

Candidate Starts for Epah_66:

(29, 58910), (Start: 31 @58916 has 3 MA's), (42, 58982), (Start: 54 @59033 has 9 MA's), (Start: 57 @59054 has 7 MA's), (74, 59174), (75, 59183), (86, 59282), (87, 59288), (91, 59306), (94, 59351), (98, 59396), (99, 59408), (110, 59471), (117, 59528), (121, 59543),

Gene: Fanaw_65 Start: 60090, Stop: 60653, Start Num: 57

Candidate Starts for Fanaw_65:

(29, 59946), (Start: 31 @59952 has 3 MA's), (42, 60018), (Start: 54 @60069 has 9 MA's), (Start: 57 @60090 has 7 MA's), (74, 60210), (75, 60219), (86, 60318), (87, 60324), (93, 60384), (94, 60387), (98, 60432), (99, 60444), (102, 60465), (117, 60564), (121, 60579), (132, 60630),

Gene: ForDig_69 Start: 58743, Stop: 59336, Start Num: 48

Candidate Starts for ForDig_69:

(3, 58476), (12, 58557), (21, 58590), (Start: 31 @58635 has 3 MA's), (48, 58743), (Start: 63 @58782 has 3 MA's), (70, 58830), (87, 58953), (88, 58956), (90, 58968), (98, 59061), (99, 59073), (107, 59124), (115, 59181), (118, 59199), (126, 59226), (141, 59328),

Gene: Fortunato_69 Start: 60068, Stop: 60652, Start Num: 54

Candidate Starts for Fortunato_69:

(29, 59945), (Start: 31 @59951 has 3 MA's), (Start: 54 @60068 has 9 MA's), (Start: 69 @60185 has 3 MA's), (74, 60209), (75, 60218), (86, 60317), (87, 60323), (91, 60341), (93, 60383), (94, 60386), (98, 60431), (99, 60443), (102, 60464), (117, 60563), (121, 60578), (132, 60629),

Gene: Frederick_70 Start: 59898, Stop: 60596, Start Num: 31

Candidate Starts for Frederick_70:

(29, 59892), (Start: 31 @59898 has 3 MA's), (Start: 54 @60015 has 9 MA's), (Start: 69 @60132 has 3 MA's), (74, 60156), (75, 60165), (86, 60264), (87, 60270), (91, 60288), (93, 60330), (94, 60333), (98, 60378), (99, 60390), (117, 60507), (132, 60573),

Gene: Funsized_72 Start: 61973, Stop: 62629, Start Num: 51

Candidate Starts for Funsized_72:

(3, 61688), (5, 61721), (11, 61751), (13, 61781), (15, 61790), (19, 61805), (20, 61811), (29, 61850), (30, 61853), (35, 61868), (Start: 51 @61973 has 3 MA's), (56, 62003), (58, 62021), (Start: 60 @62033 has 1 MA's), (70, 62114), (71, 62120), (87, 62240), (90, 62255), (92, 62291), (93, 62300), (102, 62384), (107, 62411), (133, 62534), (137, 62555), (139, 62600),

Gene: GinPorsche_66 Start: 59054, Stop: 59617, Start Num: 57

Candidate Starts for GinPorsche_66:

(29, 58910), (Start: 31 @58916 has 3 MA's), (42, 58982), (Start: 54 @59033 has 9 MA's), (Start: 57 @59054 has 7 MA's), (74, 59174), (75, 59183), (86, 59282), (87, 59288), (91, 59306), (94, 59351), (98, 59396), (99, 59408), (110, 59471), (117, 59528), (121, 59543),

Gene: Hally898_66 Start: 59069, Stop: 59632, Start Num: 57

Candidate Starts for Hally898_66:

(29, 58925), (Start: 31 @58931 has 3 MA's), (42, 58997), (Start: 54 @59048 has 9 MA's), (Start: 57 @59069 has 7 MA's), (74, 59189), (75, 59198), (86, 59297), (87, 59303), (91, 59321), (94, 59366), (98, 59411), (99, 59423), (117, 59543), (121, 59558),

Gene: Hangman_69 Start: 60214, Stop: 60795, Start Num: 54

Candidate Starts for Hangman_69:

(29, 60091), (Start: 31 @60097 has 3 MA's), (Start: 54 @60214 has 9 MA's), (74, 60355), (75, 60364), (86, 60463), (87, 60469), (94, 60532), (98, 60577), (99, 60589), (117, 60706), (132, 60772),

Gene: Heath_68 Start: 59862, Stop: 60422, Start Num: 57

Candidate Starts for Heath_68:

(29, 59718), (Start: 31 @59724 has 3 MA's), (Start: 54 @59841 has 9 MA's), (Start: 57 @59862 has 7 MA's), (74, 59982), (75, 59991), (86, 60090), (87, 60096), (94, 60159), (98, 60204), (99, 60216), (117, 60333), (132, 60399),

Gene: Hydro_69 Start: 60152, Stop: 60733, Start Num: 54

Candidate Starts for Hydro_69:

(29, 60029), (Start: 31 @60035 has 3 MA's), (Start: 54 @60152 has 9 MA's), (Start: 69 @60269 has 3 MA's), (74, 60293), (75, 60302), (86, 60401), (87, 60407), (94, 60470), (98, 60515), (99, 60527), (117, 60644), (132, 60710),

Gene: Imvubu_69 Start: 58708, Stop: 59286, Start Num: 60

Candidate Starts for Imvubu_69:

(3, 58453), (7, 58495), (9, 58507), (20, 58552), (27, 58582), (30, 58597), (32, 58609), (Start: 60 @58708 has 1 MA's), (Start: 68 @58768 has 3 MA's), (70, 58789), (71, 58795), (78, 58864), (87, 58915), (90, 58930), (91, 58933), (100, 59041), (120, 59170), (135, 59236),

Gene: Indlovu_69 Start: 59915, Stop: 60454, Start Num: 63

Candidate Starts for Indlovu_69:

(2, 59609), (3, 59615), (10, 59675), (16, 59714), (Start: 63 @59915 has 3 MA's), (70, 59963), (73, 59981), (78, 60038), (87, 60092), (90, 60107), (92, 60143), (93, 60152), (96, 60182), (98, 60200), (106, 60254), (109, 60266), (122, 60344),

Gene: JAMaL_68 Start: 60063, Stop: 60626, Start Num: 57

Candidate Starts for JAMaL_68:

(29, 59919), (Start: 31 @59925 has 3 MA's), (40, 59979), (42, 59991), (Start: 54 @60042 has 9 MA's), (Start: 57 @60063 has 7 MA's), (74, 60183), (75, 60192), (86, 60291), (87, 60297), (91, 60315), (94,

60360), (98, 60405), (99, 60417), (110, 60480), (117, 60537), (121, 60552),

Gene: JaguarMi_69 Start: 61329, Stop: 61889, Start Num: 57

Candidate Starts for JaguarMi_69:

(29, 61182), (Start: 31 @61188 has 3 MA's), (42, 61254), (Start: 54 @61305 has 9 MA's), (Start: 57 @61329 has 7 MA's), (74, 61449), (75, 61458), (86, 61557), (87, 61563), (91, 61581), (93, 61623), (94, 61626), (98, 61671), (99, 61683), (102, 61704), (112, 61767), (113, 61776),

Gene: KarasumaRum_71 Start: 59737, Stop: 60303, Start Num: 51

Candidate Starts for KarasumaRum_71:

(6, 59521), (12, 59560), (34, 59656), (43, 59704), (Start: 51 @59737 has 3 MA's), (64, 59836), (79, 59950), (80, 59959), (87, 59998), (90, 60013), (91, 60016), (92, 60049), (93, 60058), (98, 60109), (111, 60184), (127, 60253), (130, 60265),

Gene: KayaCho_67 Start: 58637, Stop: 59281, Start Num: 62

Candidate Starts for KayaCho_67:

(3, 58385), (21, 58484), (30, 58523), (Start: 62 @58637 has 3 MA's), (Start: 63 @58658 has 3 MA's), (65, 58673), (66, 58679), (70, 58706), (78, 58781), (87, 58829), (90, 58844), (98, 58937), (99, 58949), (107, 59000), (115, 59057), (126, 59102),

Gene: Knocker_72 Start: 61176, Stop: 61832, Start Num: 51

Candidate Starts for Knocker_72:

(2, 60855), (3, 60861), (11, 60951), (12, 60960), (14, 60984), (18, 61008), (20, 61017), (21, 61020), (26, 61044), (28, 61056), (29, 61059), (Start: 31 @61065 has 3 MA's), (Start: 51 @61176 has 3 MA's), (56, 61206), (58, 61224), (Start: 68 @61296 has 3 MA's), (70, 61317), (71, 61323), (77, 61386), (83, 61404), (87, 61440), (90, 61455), (93, 61500), (102, 61584), (107, 61611), (129, 61707), (134, 61731),

Gene: Lambano_66 Start: 59069, Stop: 59632, Start Num: 57

Candidate Starts for Lambano_66:

(29, 58925), (Start: 31 @58931 has 3 MA's), (42, 58997), (Start: 54 @59048 has 9 MA's), (Start: 57 @59069 has 7 MA's), (74, 59189), (75, 59198), (86, 59297), (87, 59303), (91, 59321), (94, 59366), (98, 59411), (99, 59423), (117, 59543), (121, 59558),

Gene: Lolalove_70 Start: 60244, Stop: 60804, Start Num: 57

Candidate Starts for Lolalove_70:

(29, 60100), (Start: 31 @60106 has 3 MA's), (Start: 54 @60223 has 9 MA's), (Start: 57 @60244 has 7 MA's), (74, 60364), (75, 60373), (86, 60472), (87, 60478), (94, 60541), (98, 60586), (99, 60598), (117, 60715), (119, 60727),

Gene: Magpie_66 Start: 59929, Stop: 60492, Start Num: 57

Candidate Starts for Magpie_66:

(29, 59785), (Start: 31 @59791 has 3 MA's), (Start: 54 @59908 has 9 MA's), (Start: 57 @59929 has 7 MA's), (74, 60049), (75, 60058), (86, 60157), (87, 60163), (91, 60181), (93, 60223), (94, 60226), (98, 60271), (99, 60283), (102, 60304), (114, 60382), (117, 60403), (121, 60418),

Gene: Mithril_68 Start: 60339, Stop: 60803, Start Num: 69

Candidate Starts for Mithril_68:

(29, 60099), (Start: 31 @60105 has 3 MA's), (Start: 54 @60222 has 9 MA's), (Start: 69 @60339 has 3 MA's), (74, 60363), (75, 60372), (86, 60471), (87, 60477), (91, 60495), (94, 60540), (98, 60585), (99, 60597), (102, 60618), (112, 60681), (113, 60690), (117, 60714), (119, 60726),

Gene: Mudslide_68 Start: 60243, Stop: 60824, Start Num: 54

Candidate Starts for Mudslide_68:

(29, 60120), (Start: 31 @60126 has 3 MA's), (Start: 54 @60243 has 9 MA's), (74, 60384), (75, 60393), (86, 60492), (87, 60498), (94, 60561), (98, 60606), (99, 60618), (113, 60711), (117, 60735), (119, 60747),

Gene: Mysterious_72 Start: 59836, Stop: 60333, Start Num: 62

Candidate Starts for Mysterious_72:

(2, 59590), (4, 59599), (6, 59629), (12, 59668), (15, 59686), (20, 59701), (25, 59725), (Start: 31 @59749 has 3 MA's), (34, 59764), (43, 59800), (Start: 62 @59836 has 3 MA's), (78, 59980), (79, 59983), (87, 60019), (90, 60034), (92, 60070), (93, 60079), (98, 60130), (111, 60205), (123, 60250), (130, 60280),

Gene: Nanao_67 Start: 59059, Stop: 59622, Start Num: 57

Candidate Starts for Nanao_67:

(29, 58915), (Start: 31 @58921 has 3 MA's), (42, 58987), (Start: 54 @59038 has 9 MA's), (Start: 57 @59059 has 7 MA's), (74, 59179), (75, 59188), (86, 59287), (87, 59293), (91, 59311), (94, 59356), (98, 59401), (99, 59413), (117, 59533), (121, 59548),

Gene: Nangang_71 Start: 59924, Stop: 60454, Start Num: 62

Candidate Starts for Nangang_71:

(6, 59699), (12, 59738), (24, 59792), (34, 59834), (43, 59882), (Start: 62 @59924 has 3 MA's), (66, 59966), (79, 60071), (87, 60119), (90, 60134), (91, 60137), (92, 60170), (93, 60179), (98, 60230), (111, 60305), (127, 60392), (130, 60404),

Gene: Nigel_66 Start: 58741, Stop: 59442, Start Num: 31

Candidate Starts for Nigel_66:

(29, 58735), (Start: 31 @58741 has 3 MA's), (33, 58753), (38, 58786), (42, 58807), (Start: 54 @58858 has 9 MA's), (74, 58996), (75, 59005), (86, 59104), (91, 59128), (94, 59173), (98, 59218), (99, 59230), (103, 59254), (108, 59284), (110, 59293), (117, 59353), (121, 59368),

Gene: PenguinLover67_69 Start: 59425, Stop: 59871, Start Num: 68

Candidate Starts for PenguinLover67_69:

(14, 59146), (23, 59191), (41, 59266), (43, 59278), (Start: 57 @59347 has 7 MA's), (Start: 63 @59398 has 3 MA's), (Start: 68 @59425 has 3 MA's), (70, 59446), (76, 59494), (78, 59521), (87, 59575), (89, 59587), (91, 59593), (96, 59656), (108, 59737), (124, 59809),

Gene: Phelemich_68 Start: 59668, Stop: 60213, Start Num: 62

Candidate Starts for Phelemich_68:

(2, 59422), (4, 59431), (6, 59461), (12, 59500), (20, 59533), (Start: 31 @59581 has 3 MA's), (34, 59596), (Start: 62 @59668 has 3 MA's), (Start: 63 @59689 has 3 MA's), (70, 59737), (72, 59752), (78, 59812), (87, 59869), (90, 59884), (92, 59920), (93, 59929), (98, 59980), (111, 60055), (127, 60148), (130, 60160),

Gene: Poster_66 Start: 59060, Stop: 59623, Start Num: 57

Candidate Starts for Poster_66:

(29, 58916), (Start: 31 @58922 has 3 MA's), (42, 58988), (Start: 54 @59039 has 9 MA's), (Start: 57 @59060 has 7 MA's), (74, 59180), (75, 59189), (86, 59288), (87, 59294), (91, 59312), (94, 59357), (98, 59402), (99, 59414), (117, 59534), (121, 59549),

Gene: Prince_67 Start: 60270, Stop: 60725, Start Num: 69

Candidate Starts for Prince_67:

(29, 60030), (Start: 31 @60036 has 3 MA's), (Start: 54 @60153 has 9 MA's), (Start: 57 @60174 has 7 MA's), (Start: 69 @60270 has 3 MA's), (74, 60294), (75, 60303), (86, 60402), (87, 60408), (91, 60426), (93, 60468), (94, 60471), (98, 60516), (99, 60528), (117, 60636),

Gene: QueenPie_63 Start: 59162, Stop: 59725, Start Num: 57

Candidate Starts for QueenPie_63:

(29, 59018), (Start: 31 @59024 has 3 MA's), (40, 59078), (42, 59090), (Start: 54 @59141 has 9 MA's), (Start: 57 @59162 has 7 MA's), (74, 59282), (75, 59291), (86, 59390), (87, 59396), (93, 59456), (94, 59459), (98, 59504), (99, 59516), (110, 59579), (117, 59636), (121, 59651),

Gene: Quesadilla_70 Start: 59603, Stop: 60055, Start Num: 68

Candidate Starts for Quesadilla_70:

(1, 59162), (14, 59300), (39, 59429), (42, 59444), (44, 59453), (Start: 68 @59603 has 3 MA's), (Start: 69 @59621 has 3 MA's), (84, 59720), (91, 59777), (95, 59825), (96, 59843), (97, 59861), (128, 60017),

Gene: RawrgerThat_69 Start: 60046, Stop: 60630, Start Num: 54

Candidate Starts for RawrgerThat_69:

(29, 59923), (Start: 31 @59929 has 3 MA's), (Start: 54 @60046 has 9 MA's), (Start: 69 @60163 has 3 MA's), (74, 60187), (75, 60196), (86, 60295), (87, 60301), (91, 60319), (93, 60361), (94, 60364), (98, 60409), (99, 60421), (102, 60442), (117, 60541), (121, 60556), (132, 60607),

Gene: Reprobate_70 Start: 59673, Stop: 60218, Start Num: 62

Candidate Starts for Reprobate_70:

(2, 59427), (4, 59436), (6, 59466), (12, 59505), (20, 59538), (Start: 31 @59586 has 3 MA's), (34, 59601), (Start: 62 @59673 has 3 MA's), (Start: 63 @59694 has 3 MA's), (70, 59742), (72, 59757), (78, 59817), (87, 59874), (90, 59889), (92, 59925), (93, 59934), (98, 59985), (111, 60060), (127, 60153), (130, 60165),

Gene: Rinkes_68 Start: 59532, Stop: 60221, Start Num: 51

Candidate Starts for Rinkes_68:

(3, 59274), (17, 59358), (18, 59361), (20, 59370), (29, 59406), (Start: 31 @59412 has 3 MA's), (Start: 51 @59532 has 3 MA's), (Start: 60 @59592 has 1 MA's), (Start: 62 @59604 has 3 MA's), (Start: 63 @59625 has 3 MA's), (70, 59673), (71, 59679), (79, 59748), (90, 59811), (92, 59847), (93, 59856), (131, 60099), (140, 60183),

Gene: Saguaro_67 Start: 58827, Stop: 59270, Start Num: 68

Candidate Starts for Saguaro_67:

(12, 58491), (21, 58551), (24, 58569), (37, 58626), (46, 58695), (53, 58716), (Start: 68 @58827 has 3 MA's), (81, 58938), (84, 58944), (85, 58965), (87, 58977), (88, 58980), (92, 59016), (101, 59088), (105, 59112),

Gene: Shenyu_72 Start: 60293, Stop: 60793, Start Num: 62

Candidate Starts for Shenyu_72:

(6, 60068), (12, 60107), (24, 60161), (34, 60203), (43, 60251), (Start: 62 @60293 has 3 MA's), (66, 60335), (79, 60440), (87, 60488), (90, 60503), (91, 60506), (92, 60539), (93, 60548), (98, 60599), (111, 60674), (127, 60743), (130, 60755),

Gene: Stinger_68 Start: 58864, Stop: 59568, Start Num: 31

Candidate Starts for Stinger_68:

(Start: 31 @58864 has 3 MA's), (Start: 54 @58981 has 9 MA's), (74, 59122), (75, 59131), (86, 59230), (87, 59236), (91, 59254), (94, 59299), (98, 59344), (99, 59356), (116, 59473), (117, 59479), (121, 59494),

Gene: StinkyVeggy_71 Start: 59737, Stop: 60303, Start Num: 51

Candidate Starts for StinkyVeggy_71:

(6, 59521), (12, 59560), (34, 59656), (43, 59704), (Start: 51 @59737 has 3 MA's), (64, 59836), (79, 59950), (80, 59959), (87, 59998), (90, 60013), (91, 60016), (92, 60049), (93, 60058), (98, 60109), (111, 60184), (127, 60253), (130, 60265),

Gene: Vincenzo_71 Start: 61486, Stop: 61959, Start Num: 63

Candidate Starts for Vincenzo_71:

(Start: 31 @61294 has 3 MA's), (42, 61360), (47, 61396), (52, 61411), (Start: 55 @61420 has 1 MA's), (Start: 63 @61486 has 3 MA's), (70, 61534), (74, 61555), (75, 61564), (79, 61612), (94, 61732), (103, 61813), (108, 61846), (113, 61888), (114, 61891), (125, 61924),

Gene: VioletZ_70 Start: 60156, Stop: 60719, Start Num: 54

Candidate Starts for VioletZ_70:

(29, 60033), (Start: 31 @60039 has 3 MA's), (Start: 54 @60156 has 9 MA's), (74, 60297), (75, 60306), (91, 60429), (94, 60474), (98, 60519), (99, 60531), (104, 60561),

Gene: Waleliano_68 Start: 60045, Stop: 60626, Start Num: 54

Candidate Starts for Waleliano_68:

(29, 59922), (Start: 31 @59928 has 3 MA's), (Start: 54 @60045 has 9 MA's), (Start: 69 @60162 has 3 MA's), (74, 60186), (75, 60195), (86, 60294), (87, 60300), (94, 60363), (98, 60408), (99, 60420), (113, 60513), (117, 60537), (119, 60549),

Gene: Xincheng_68 Start: 61280, Stop: 61840, Start Num: 57

Candidate Starts for Xincheng_68:

(29, 61133), (Start: 31 @61139 has 3 MA's), (42, 61205), (Start: 54 @61256 has 9 MA's), (Start: 57 @61280 has 7 MA's), (74, 61400), (75, 61409), (86, 61508), (87, 61514), (91, 61532), (93, 61574), (94, 61577), (98, 61622), (99, 61634), (102, 61655), (112, 61718), (113, 61727),

Gene: Zemanar_68 Start: 59964, Stop: 60524, Start Num: 57

Candidate Starts for Zemanar_68:

(29, 59820), (Start: 31 @59826 has 3 MA's), (Start: 54 @59943 has 9 MA's), (Start: 57 @59964 has 7 MA's), (74, 60084), (75, 60093), (86, 60192), (87, 60198), (94, 60261), (98, 60306), (99, 60318), (117, 60435), (132, 60501),