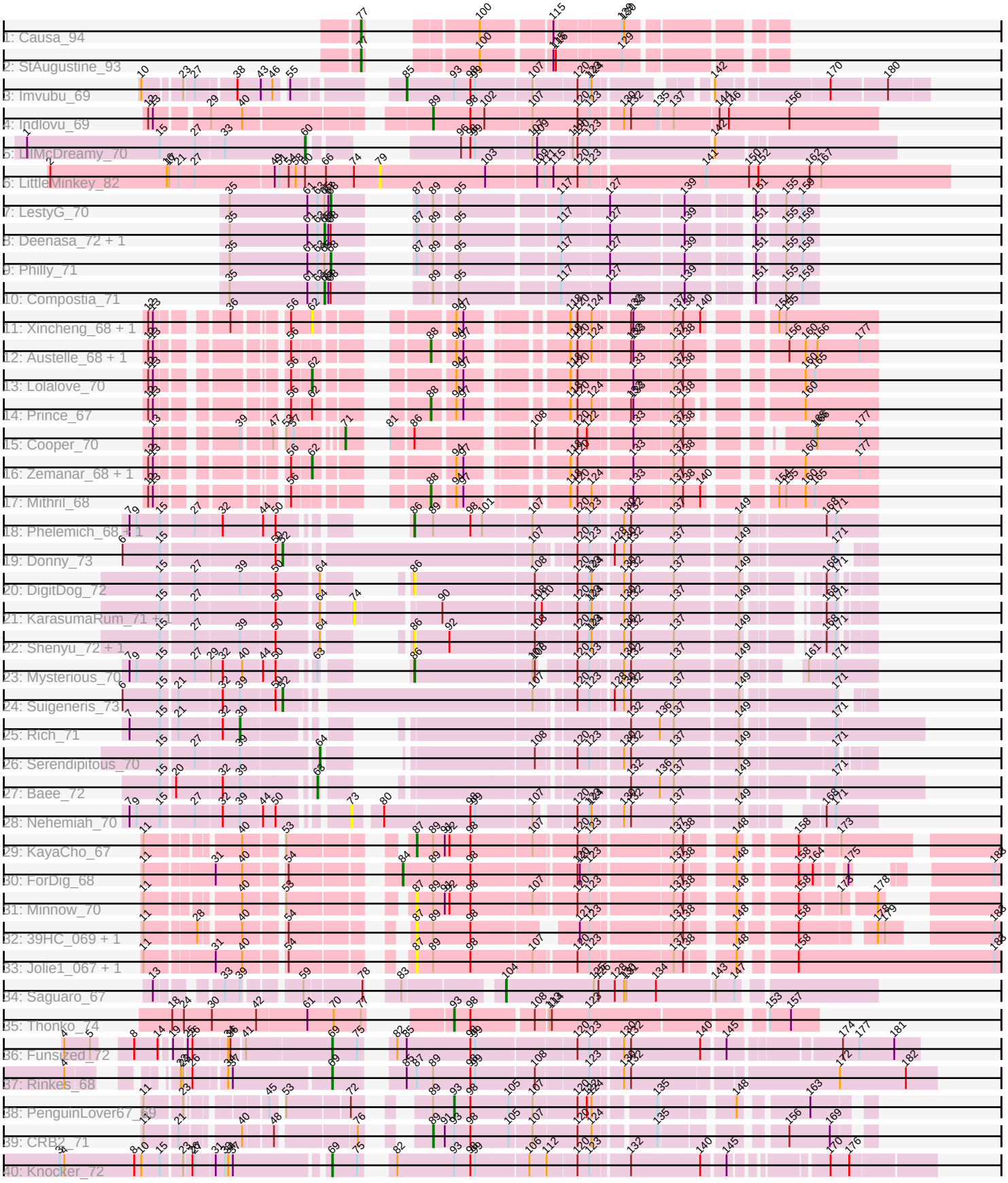
Pham 347724


1: Causa_94
2: StAugustine_93
3: Imvubu_69
4: Indlovu_69
5: LilMcDreamy_70
6: LittleMinkey_82
7: LestyG_70
8: Deenasa_72 + 1
9: Philly_71
10: Compostia_71
11: Xincheng_68 + 1
12: Austelle_68 + 1
13: Lolalove_70
14: Prince_67
15: Cooper_70
16: Zemanar_68 + 1
17: Mithril_68
18: Phelemich_68 + 1
19: Donny_73
20: DigitDog_72
21: KarasumaRum_71 + 1
22: Shenyu_72 + 1
23: Mysterious_70
24: Suigeneris_73
25: Rich_71
26: Serendipitous_70
27: Baee_72
28: Nehemiah_70
29: KayaCho_67
30: ForDig_68
31: Minnow_70
32: 39HC_069 + 1
33: Jolie1_067 + 1
34: Saguaro_67
35: Thonko_74
36: Funsized172
37: Rinkes_68
38: PenguinLover67_69
39: CRB2_71
40: Knocker_72

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 347724 Report

This analysis was run 11/14/26 on database version 672.

Pham number 347724 has 49 members, 14 are drafts.

Phages represented in each track:
- Track 1 : Causa_94
- Track 2 : StAugustine_93
- Track 3 : Imvubu_69
- Track 4 : Indlovu_69
- Track 5 : LilMcDreamy_70
- Track 6 : LittleMinkey_82
- Track 7 : LestyG_70
- Track 8 : Deenasa_72, RagingRooster_71
- Track 9 : Philly_71
- Track 10 : Compostia_71
- Track 11 : Xincheng_68, JaguarMi_69
- Track 12 : Austelle_68, JoyceMaria_69
- Track 13 : Lolalove_70
- Track 14 : Prince_67
- Track 15 : Cooper_70
- Track 16 : Zemanar_68, Heath_68
- Track 17 : Mithril_68
- Track 18 : Phelemich_68, Reprobate_70
- Track 19 : Donny_73
- Track 20 : DigitDog_72
- Track 21 : KarasumaRum_71, StinkyVeggy_71
- Track 22 : Shenyu_72, Nangang_71
- Track 23 : Mysterious_70
- Track 24 : Suigeneris_73
- Track 25 : Rich_71
- Track 26 : Serendipitous_70
- Track 27 : Baee_72
- Track 28 : Nehemiah_70
- Track 29 : KayaCho_67
- Track 30 : ForDig_68
- Track 31 : Minnow_70
- Track 32 : 39HC_069, 40BC_069
- Track 33 : Jolie1_067, Hosp_065
- Track 34 : Saguaro_67
- Track 35 : Thonko_74
- Track 36 : Funsized_72
- Track 37 : Rinkes_68

• Track 38 : PenguinLover67_69
• Track 39 : CRB2_71
• Track 40 : 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 88, it was called in 4 of the 35 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Austelle_68, JoyceMaria_69, Mithril_68, Prince_67,

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

Genes that do not have the "Most Annotated" start:
• 39HC_069, 40BC_069, Baee_72, CRB2_71, Causa_94, Compostia_71, Cooper_70, Deenasa_72, DigitDog_72, Donny_73, ForDig_68, Funsized_72, Heath_68, Hosp_065, Imvubu_69, Indlovu_69, JaguarMi_69, Jolie1_067, KarasumaRum_71, KayaCho_67, Knocker_72, LestyG_70, LilMcDreamy_70, LittleMinkey_82, Lolalove_70, Minnow_70, Mysterious_70, Nangang_71, Nehemiah_70, PenguinLover67_69, Phelemich_68, Philly_71, RagingRooster_71, Reprobate_70, Rich_71, Rinkes_68, Saguaro_67, Serendipitous_70, Shenyu_72, StAugustine_93, StinkyVeggy_71, Suigeneris_73, Thonko_74, Xincheng_68, Zemanar_68,

Summary by start number:

Start 39:
• Found in 10 of 49 (20.4%) of genes in pham
• Manual Annotations of this start: 1 of 35
• Called 10.0% of time when present
• Phage (with cluster) where this start called: Rich_71 (B5),

Start 52:
• Found in 2 of 49 (4.1%) of genes in pham
• Manual Annotations of this start: 2 of 35
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Donny_73 (B5), Suigeneris_73 (B5),

Start 60:
• Found in 2 of 49 (4.1%) of genes in pham
• Manual Annotations of this start: 1 of 35
• Called 50.0% of time when present
• Phage (with cluster) where this start called: LilMcDreamy_70 (B12),

Start 62:
• Found in 6 of 49 (12.2%) of genes in pham
• Manual Annotations of this start: 3 of 35
• Called 83.3% of time when present

• Phage (with cluster) where this start called: Heath_68 (B4), JaguarMi_69 (B4), Lolalove_70 (B4), Xincheng_68 (B4), Zemanar_68 (B4),

Start 63:
• Found in 7 of 49 (14.3%) of genes in pham
• Manual Annotations of this start: 1 of 35
• Called 14.3% of time when present
• Phage (with cluster) where this start called: Baee_72 (B5),

Start 64:
• Found in 6 of 49 (12.2%) of genes in pham
• Manual Annotations of this start: 1 of 35
• Called 16.7% of time when present
• Phage (with cluster) where this start called: Serendipitous_70 (B5),

Start 65:
• Found in 5 of 49 (10.2%) of genes in pham
• Manual Annotations of this start: 3 of 35
• Called 60.0% of time when present
• Phage (with cluster) where this start called: Compostia_71 (B3), Deenasa_72 (B3), RagingRooster_71 (B3),

Start 68:
• Found in 5 of 49 (10.2%) of genes in pham
• Manual Annotations of this start: 2 of 35
• Called 40.0% of time when present
• Phage (with cluster) where this start called: LestyG_70 (B3), Philly_71 (B3),

Start 69:
• Found in 3 of 49 (6.1%) of genes in pham
• Manual Annotations of this start: 3 of 35
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Funsized_72 (B9), Knocker_72 (B9), Rinkes_68 (B9),

Start 71:
• Found in 1 of 49 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 35
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Cooper_70 (B4),

Start 73:
• Found in 1 of 49 (2.0%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Nehemiah_70 (B5),

Start 74:
• Found in 3 of 49 (6.1%) of genes in pham
• No Manual Annotations of this start.
• Called 66.7% of time when present
• Phage (with cluster) where this start called: KarasumaRum_71 (B5), StinkyVeggy_71 (B5),

Start 77:
• Found in 3 of 49 (6.1%) of genes in pham
• Manual Annotations of this start: 2 of 35
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Causa_94 (AI), StAugustine_93 (AI),

Start 79:
• Found in 1 of 49 (2.0%) of genes in pham
• No Manual Annotations of this start.
• Called 100.0% of time when present
• Phage (with cluster) where this start called: LittleMinkey_82 (B13),

Start 84:
• Found in 1 of 49 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 35
• Called 100.0% of time when present
• Phage (with cluster) where this start called: ForDig_68 (B6),

Start 85:
• Found in 3 of 49 (6.1%) of genes in pham
• Manual Annotations of this start: 1 of 35
• Called 33.3% of time when present
• Phage (with cluster) where this start called: Imvubu_69 (B10),

Start 86:
• Found in 7 of 49 (14.3%) of genes in pham
• Manual Annotations of this start: 3 of 35
• Called 85.7% of time when present
• Phage (with cluster) where this start called: DigitDog_72 (B5), Mysterious_70 (B5), Nangang_71 (B5), Phelemich_68 (B5), Reprobate_70 (B5), Shenyu_72 (B5),

Start 87:
• Found in 11 of 49 (22.4%) of genes in pham
• Manual Annotations of this start: 1 of 35
• Called 54.5% of time when present
• Phage (with cluster) where this start called: 39HC_069 (B6), 40BC_069 (B6), Hosp_065 (B6), Jolie1_067 (B6), KayaCho_67 (B6), Minnow_70 (B6),

Start 88:
• Found in 4 of 49 (8.2%) of genes in pham
• Manual Annotations of this start: 4 of 35
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Austelle_68 (B4), JoyceMaria_69 (B4), Mithril_68 (B4), Prince_67 (B4),

Start 89:
• Found in 18 of 49 (36.7%) of genes in pham
• Manual Annotations of this start: 2 of 35
• Called 11.1% of time when present
• Phage (with cluster) where this start called: CRB2_71 (B9), Indlovu_69 (B11),

Start 93:

• Found in 5 of 49 (10.2%) of genes in pham
• Manual Annotations of this start: 2 of 35
• Called 40.0% of time when present
• Phage (with cluster) where this start called: PenguinLover67_69 (B9), Thonko_74 (B8),

Start 104:
• Found in 1 of 49 (2.0%) of genes in pham
• Manual Annotations of this start: 1 of 35
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Saguaro_67 (B7),

Summary by clusters:

There are 12 clusters represented in this pham: AI, B11, B4, B5, B6, B7, B12, B13, B10, B3, B8, B9,

Info for manual annotations of cluster AI:
•Start number 77 was manually annotated 2 times for cluster AI.

Info for manual annotations of cluster B10:
•Start number 85 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B11:
•Start number 89 was manually annotated 1 time for cluster B11.

Info for manual annotations of cluster B12:
•Start number 60 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B3:
•Start number 65 was manually annotated 3 times for cluster B3.
•Start number 68 was manually annotated 2 times for cluster B3.

Info for manual annotations of cluster B4:
•Start number 62 was manually annotated 3 times for cluster B4.
•Start number 71 was manually annotated 1 time for cluster B4.
•Start number 88 was manually annotated 4 times for cluster B4.

Info for manual annotations of cluster B5:
•Start number 39 was manually annotated 1 time for cluster B5.
•Start number 52 was manually annotated 2 times for cluster B5.
•Start number 63 was manually annotated 1 time for cluster B5.
•Start number 64 was manually annotated 1 time for cluster B5.
•Start number 86 was manually annotated 3 times for cluster B5.

Info for manual annotations of cluster B6:
•Start number 84 was manually annotated 1 time for cluster B6.
•Start number 87 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B7:
•Start number 104 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B8:
•Start number 93 was manually annotated 1 time for cluster B8.

Info for manual annotations of cluster B9:
•Start number 69 was manually annotated 3 times for cluster B9.
•Start number 89 was manually annotated 1 time for cluster B9.
•Start number 93 was manually annotated 1 time for cluster B9.

Gene Information:

Gene: 39HC_069 Start: 58780, Stop: 59388, Start Num: 87
Candidate Starts for 39HC_069:
(11, 58525), (28, 58585), (40, 58630), (54, 58675), (Start: 87 @58780 has 1 MA's), (Start: 89 @58801 has 2 MA's), (98, 58849), (121, 58957), (123, 58969), (137, 59062), (138, 59074), (148, 59125), (158, 59188), (178, 59266), (179, 59275), (183, 59380),

Gene: 40BC_069 Start: 58780, Stop: 59388, Start Num: 87
Candidate Starts for 40BC_069:
(11, 58525), (28, 58585), (40, 58630), (54, 58675), (Start: 87 @58780 has 1 MA's), (Start: 89 @58801 has 2 MA's), (98, 58849), (121, 58957), (123, 58969), (137, 59062), (138, 59074), (148, 59125), (158, 59188), (178, 59266), (179, 59275), (183, 59380),

Gene: Austelle_68 Start: 60772, Stop: 61239, Start Num: 88
Candidate Starts for Austelle_68:
(12, 60532), (13, 60538), (56, 60655), (Start: 88 @60772 has 4 MA's), (94, 60796), (97, 60805), (118, 60904), (120, 60910), (124, 60928), (132, 60970), (133, 60973), (137, 61018), (138, 61030), (156, 61129), (160, 61150), (166, 61165), (177, 61216),

Gene: Baee_72 Start: 60813, Stop: 61436, Start Num: 63
Candidate Starts for Baee_72:
(15, 60642), (20, 60657), (32, 60714), (Start: 39 @60735 has 1 MA's), (Start: 63 @60813 has 1 MA's), (132, 61101), (136, 61134), (137, 61152), (149, 61227), (171, 61326),

Gene: CRB2_71 Start: 61691, Stop: 62164, Start Num: 89
Candidate Starts for CRB2_71:
(11, 61424), (21, 61463), (40, 61526), (48, 61559), (76, 61649), (Start: 89 @61691 has 2 MA's), (91, 61706), (Start: 93 @61718 has 2 MA's), (98, 61739), (105, 61787), (107, 61814), (120, 61868), (124, 61886), (135, 61949), (156, 62075), (169, 62126),

Gene: Causa_94 Start: 68242, Stop: 68646, Start Num: 77
Candidate Starts for Causa_94:
(Start: 77 @68242 has 2 MA's), (100, 68323), (115, 68401), (129, 68479), (130, 68482),

Gene: Compostia_71 Start: 58872, Stop: 59372, Start Num: 65
Candidate Starts for Compostia_71:
(35, 58752), (61, 58851), (Start: 63 @58863 has 1 MA's), (Start: 65 @58872 has 3 MA's), (67, 58875), (Start: 68 @58878 has 2 MA's), (Start: 89 @58941 has 2 MA's), (95, 58968), (117, 59082), (127, 59142), (139, 59232), (151, 59298), (155, 59331), (159, 59352),

Gene: Cooper_70 Start: 59759, Stop: 60271, Start Num: 71
Candidate Starts for Cooper_70:

(13, 59591), (Start: 39 @59669 has 1 MA's), (47, 59699), (53, 59705), (57, 59714), (Start: 71 @59759 has 1 MA's), (81, 59780), (Start: 86 @59804 has 3 MA's), (108, 59921), (120, 59963), (122, 59975), (133, 60026), (137, 60071), (138, 60083), (165, 60194), (166, 60197), (177, 60248),

Gene: Deenasa_72 Start: 59338, Stop: 59838, Start Num: 65
Candidate Starts for Deenasa_72:
(35, 59218), (61, 59317), (Start: 63 @59329 has 1 MA's), (Start: 65 @59338 has 3 MA's), (67, 59341), (Start: 68 @59344 has 2 MA's), (Start: 87 @59389 has 1 MA's), (Start: 89 @59407 has 2 MA's), (95, 59434), (117, 59548), (127, 59608), (139, 59698), (151, 59764), (155, 59797), (159, 59818),

Gene: DigitDog_72 Start: 59928, Stop: 60428, Start Num: 86
Candidate Starts for DigitDog_72:
(15, 59703), (27, 59742), (Start: 39 @59796 has 1 MA's), (50, 59838), (Start: 64 @59886 has 1 MA's), (Start: 86 @59928 has 3 MA's), (108, 60075), (120, 60123), (123, 60138), (124, 60141), (130, 60174), (132, 60183), (137, 60234), (149, 60309), (168, 60378), (171, 60390),

Gene: Donny_73 Start: 59741, Stop: 60397, Start Num: 52
Candidate Starts for Donny_73:
(6, 59549), (15, 59597), (50, 59732), (Start: 52 @59741 has 2 MA's), (107, 60035), (120, 60077), (123, 60092), (128, 60116), (130, 60128), (132, 60137), (137, 60188), (149, 60263), (171, 60368),

Gene: ForDig_68 Start: 58743, Stop: 59336, Start Num: 84
Candidate Starts for ForDig_68:
(11, 58476), (31, 58557), (40, 58590), (54, 58635), (Start: 84 @58743 has 1 MA's), (Start: 89 @58782 has 2 MA's), (98, 58830), (120, 58953), (121, 58956), (123, 58968), (137, 59061), (138, 59073), (148, 59124), (158, 59181), (164, 59199), (175, 59226), (183, 59328),

Gene: Funsized_72 Start: 61973, Stop: 62629, Start Num: 69
Candidate Starts for Funsized_72:
(4, 61688), (5, 61721), (8, 61751), (14, 61781), (19, 61790), (25, 61805), (26, 61811), (34, 61850), (36, 61853), (41, 61868), (Start: 69 @61973 has 3 MA's), (75, 62003), (82, 62021), (Start: 85 @62033 has 1 MA's), (98, 62114), (99, 62120), (120, 62240), (123, 62255), (130, 62291), (132, 62300), (140, 62384), (145, 62411), (174, 62534), (177, 62555), (181, 62600),

Gene: Heath_68 Start: 59862, Stop: 60422, Start Num: 62
Candidate Starts for Heath_68:
(12, 59718), (13, 59724), (56, 59841), (Start: 62 @59862 has 3 MA's), (94, 59982), (97, 59991), (118, 60090), (120, 60096), (133, 60159), (137, 60204), (138, 60216), (160, 60333), (177, 60399),

Gene: Hosp_065 Start: 56539, Stop: 57216, Start Num: 87
Candidate Starts for Hosp_065:
(11, 56272), (31, 56353), (40, 56386), (54, 56431), (Start: 87 @56539 has 1 MA's), (Start: 89 @56560 has 2 MA's), (98, 56608), (107, 56683), (120, 56731), (123, 56746), (137, 56839), (138, 56851), (148, 56902), (158, 56959), (183, 57208),

Gene: Imvubu_69 Start: 58708, Stop: 59286, Start Num: 85
Candidate Starts for Imvubu_69:
(10, 58453), (23, 58495), (27, 58507), (38, 58552), (43, 58582), (46, 58597), (55, 58609), (Start: 85 @58708 has 1 MA's), (Start: 93 @58768 has 2 MA's), (98, 58789), (99, 58795), (107, 58864), (120, 58915), (123, 58930), (124, 58933), (142, 59041), (170, 59170), (180, 59236),

Gene: Indlovu_69 Start: 59915, Stop: 60454, Start Num: 89
Candidate Starts for Indlovu_69:

(12, 59609), (13, 59615), (29, 59675), (40, 59714), (Start: 89 @59915 has 2 MA's), (98, 59963), (102, 59981), (107, 60038), (120, 60092), (123, 60107), (130, 60143), (132, 60152), (135, 60182), (137, 60200), (144, 60254), (146, 60266), (156, 60344),

Gene: JaguarMi_69 Start: 61329, Stop: 61889, Start Num: 62
Candidate Starts for JaguarMi_69:
(12, 61182), (13, 61188), (36, 61254), (56, 61305), (Start: 62 @61329 has 3 MA's), (94, 61449), (97, 61458), (118, 61557), (120, 61563), (124, 61581), (132, 61623), (133, 61626), (137, 61671), (138, 61683), (140, 61704), (154, 61767), (155, 61776),

Gene: Jolie1_067 Start: 58667, Stop: 59344, Start Num: 87
Candidate Starts for Jolie1_067:
(11, 58400), (31, 58481), (40, 58514), (54, 58559), (Start: 87 @58667 has 1 MA's), (Start: 89 @58688 has 2 MA's), (98, 58736), (107, 58811), (120, 58859), (123, 58874), (137, 58967), (138, 58979), (148, 59030), (158, 59087), (183, 59336),

Gene: JoyceMaria_69 Start: 60295, Stop: 60762, Start Num: 88
Candidate Starts for JoyceMaria_69:
(12, 60055), (13, 60061), (56, 60178), (Start: 88 @60295 has 4 MA's), (94, 60319), (97, 60328), (118, 60427), (120, 60433), (124, 60451), (132, 60493), (133, 60496), (137, 60541), (138, 60553), (156, 60652), (160, 60673), (166, 60688), (177, 60739),

Gene: KarasumaRum_71 Start: 59737, Stop: 60303, Start Num: 74
Candidate Starts for KarasumaRum_71:
(15, 59521), (27, 59560), (50, 59656), (Start: 64 @59704 has 1 MA's), (74, 59737), (90, 59836), (108, 59950), (110, 59959), (120, 59998), (123, 60013), (124, 60016), (130, 60049), (132, 60058), (137, 60109), (149, 60184), (168, 60253), (171, 60265),

Gene: KayaCho_67 Start: 58637, Stop: 59281, Start Num: 87
Candidate Starts for KayaCho_67:
(11, 58385), (40, 58484), (53, 58523), (Start: 87 @58637 has 1 MA's), (Start: 89 @58658 has 2 MA's), (91, 58673), (92, 58679), (98, 58706), (107, 58781), (120, 58829), (123, 58844), (137, 58937), (138, 58949), (148, 59000), (158, 59057), (173, 59102),

Gene: Knocker_72 Start: 61176, Stop: 61832, Start Num: 69
Candidate Starts for Knocker_72:
(3, 60855), (4, 60861), (8, 60951), (10, 60960), (15, 60984), (23, 61008), (26, 61017), (27, 61020), (31, 61044), (33, 61056), (34, 61059), (37, 61065), (Start: 69 @61176 has 3 MA's), (75, 61206), (82, 61224), (Start: 93 @61296 has 2 MA's), (98, 61317), (99, 61323), (106, 61386), (112, 61404), (120, 61440), (123, 61455), (132, 61500), (140, 61584), (145, 61611), (170, 61707), (176, 61731),

Gene: LestyG_70 Start: 57963, Stop: 58457, Start Num: 68
Candidate Starts for LestyG_70:
(35, 57837), (61, 57936), (Start: 63 @57948 has 1 MA's), (Start: 65 @57957 has 3 MA's), (67, 57960), (Start: 68 @57963 has 2 MA's), (Start: 87 @58008 has 1 MA's), (Start: 89 @58026 has 2 MA's), (95, 58053), (117, 58167), (127, 58227), (139, 58317), (151, 58383), (155, 58416), (159, 58437),

Gene: LilMcDreamy_70 Start: 59640, Stop: 60260, Start Num: 60
Candidate Starts for LilMcDreamy_70:
(1, 59286), (15, 59457), (27, 59502), (33, 59538), (Start: 60 @59640 has 1 MA's), (96, 59748), (98, 59760), (99, 59766), (107, 59835), (109, 59841), (119, 59880), (120, 59886), (123, 59901), (142, 60042),

Gene: LittleMinkey_82 Start: 60638, Stop: 61354, Start Num: 79
Candidate Starts for LittleMinkey_82:
(2, 60218), (16, 60368), (17, 60371), (21, 60383), (27, 60404), (49, 60503), (51, 60509), (54, 60521), (58, 60530), (Start: 60 @60542 has 1 MA's), (66, 60569), (74, 60605), (79, 60638), (103, 60773), (109, 60836), (111, 60845), (115, 60857), (120, 60887), (123, 60902), (141, 61043), (150, 61097), (152, 61109), (162, 61175), (167, 61190),

Gene: Lolalove_70 Start: 60244, Stop: 60804, Start Num: 62
Candidate Starts for Lolalove_70:
(12, 60100), (13, 60106), (56, 60223), (Start: 62 @60244 has 3 MA's), (94, 60364), (97, 60373), (118, 60472), (120, 60478), (133, 60541), (137, 60586), (138, 60598), (160, 60715), (165, 60727),

Gene: Minnow_70 Start: 58894, Stop: 59490, Start Num: 87
Candidate Starts for Minnow_70:
(11, 58642), (40, 58741), (53, 58780), (Start: 87 @58894 has 1 MA's), (Start: 89 @58915 has 2 MA's), (91, 58930), (92, 58936), (98, 58963), (107, 59038), (120, 59086), (123, 59101), (137, 59194), (138, 59206), (148, 59257), (158, 59314), (173, 59359), (178, 59392),

Gene: Mithril_68 Start: 60339, Stop: 60803, Start Num: 88
Candidate Starts for Mithril_68:
(12, 60099), (13, 60105), (56, 60222), (Start: 88 @60339 has 4 MA's), (94, 60363), (97, 60372), (118, 60471), (120, 60477), (124, 60495), (133, 60540), (137, 60585), (138, 60597), (140, 60618), (154, 60681), (155, 60690), (160, 60714), (165, 60726),

Gene: Mysterious_70 Start: 59836, Stop: 60333, Start Num: 86
Candidate Starts for Mysterious_70:
(7, 59590), (9, 59599), (15, 59629), (27, 59668), (29, 59686), (32, 59701), (40, 59725), (44, 59749), (50, 59764), (Start: 63 @59800 has 1 MA's), (Start: 86 @59836 has 3 MA's), (107, 59980), (108, 59983), (120, 60019), (123, 60034), (130, 60070), (132, 60079), (137, 60130), (149, 60205), (161, 60250), (171, 60280),

Gene: Nangang_71 Start: 59924, Stop: 60454, Start Num: 86
Candidate Starts for Nangang_71:
(15, 59699), (27, 59738), (Start: 39 @59792 has 1 MA's), (50, 59834), (Start: 64 @59882 has 1 MA's), (Start: 86 @59924 has 3 MA's), (92, 59966), (108, 60071), (120, 60119), (123, 60134), (124, 60137), (130, 60170), (132, 60179), (137, 60230), (149, 60305), (168, 60392), (171, 60404),

Gene: Nehemiah_70 Start: 59668, Stop: 60234, Start Num: 73
Candidate Starts for Nehemiah_70:
(7, 59428), (9, 59437), (15, 59467), (27, 59506), (32, 59539), (Start: 39 @59560 has 1 MA's), (44, 59587), (50, 59602), (73, 59668), (80, 59698), (98, 59806), (99, 59812), (107, 59881), (120, 59923), (123, 59938), (124, 59941), (130, 59974), (132, 59983), (137, 60034), (149, 60109), (168, 60169), (171, 60181),

Gene: PenguinLover67_69 Start: 59425, Stop: 59871, Start Num: 93
Candidate Starts for PenguinLover67_69:
(11, 59146), (23, 59191), (45, 59266), (53, 59278), (72, 59347), (Start: 89 @59398 has 2 MA's), (Start: 93 @59425 has 2 MA's), (98, 59446), (105, 59494), (107, 59521), (120, 59575), (122, 59587), (124, 59593), (135, 59656), (148, 59737), (163, 59809),

Gene: Phelemich_68 Start: 59668, Stop: 60213, Start Num: 86
Candidate Starts for Phelemich_68:

(7, 59422), (9, 59431), (15, 59461), (27, 59500), (32, 59533), (44, 59581), (50, 59596), (Start: 86 @59668 has 3 MA's), (Start: 89 @59689 has 2 MA's), (98, 59737), (101, 59752), (107, 59812), (120, 59869), (123, 59884), (130, 59920), (132, 59929), (137, 59980), (149, 60055), (168, 60148), (171, 60160),

Gene: Philly_71 Start: 58297, Stop: 58791, Start Num: 68
Candidate Starts for Philly_71:
(35, 58171), (61, 58270), (Start: 63 @58282 has 1 MA's), (Start: 65 @58291 has 3 MA's), (Start: 68 @58297 has 2 MA's), (Start: 87 @58342 has 1 MA's), (Start: 89 @58360 has 2 MA's), (95, 58387), (117, 58501), (127, 58561), (139, 58651), (151, 58717), (155, 58750), (159, 58771),

Gene: Prince_67 Start: 60270, Stop: 60725, Start Num: 88
Candidate Starts for Prince_67:
(12, 60030), (13, 60036), (56, 60153), (Start: 62 @60174 has 3 MA's), (Start: 88 @60270 has 4 MA's), (94, 60294), (97, 60303), (118, 60402), (120, 60408), (124, 60426), (132, 60468), (133, 60471), (137, 60516), (138, 60528), (160, 60636),

Gene: RagingRooster_71 Start: 58119, Stop: 58619, Start Num: 65
Candidate Starts for RagingRooster_71:
(35, 57999), (61, 58098), (Start: 63 @58110 has 1 MA's), (Start: 65 @58119 has 3 MA's), (67, 58122), (Start: 68 @58125 has 2 MA's), (Start: 87 @58170 has 1 MA's), (Start: 89 @58188 has 2 MA's), (95, 58215), (117, 58329), (127, 58389), (139, 58479), (151, 58545), (155, 58578), (159, 58599),

Gene: Reprobate_70 Start: 59673, Stop: 60218, Start Num: 86
Candidate Starts for Reprobate_70:
(7, 59427), (9, 59436), (15, 59466), (27, 59505), (32, 59538), (44, 59586), (50, 59601), (Start: 86 @59673 has 3 MA's), (Start: 89 @59694 has 2 MA's), (98, 59742), (101, 59757), (107, 59817), (120, 59874), (123, 59889), (130, 59925), (132, 59934), (137, 59985), (149, 60060), (168, 60153), (171, 60165),

Gene: Rich_71 Start: 60783, Stop: 61481, Start Num: 39
Candidate Starts for Rich_71:
(7, 60651), (15, 60690), (21, 60708), (32, 60762), (Start: 39 @60783 has 1 MA's), (132, 61146), (136, 61179), (137, 61197), (149, 61272), (171, 61371),

Gene: Rinkes_68 Start: 59532, Stop: 60221, Start Num: 69
Candidate Starts for Rinkes_68:
(4, 59274), (22, 59358), (23, 59361), (26, 59370), (34, 59406), (37, 59412), (Start: 69 @59532 has 3 MA's), (Start: 85 @59592 has 1 MA's), (Start: 87 @59604 has 1 MA's), (Start: 89 @59625 has 2 MA's), (98, 59673), (99, 59679), (108, 59748), (123, 59811), (130, 59847), (132, 59856), (172, 60099), (182, 60183),

Gene: Saguaro_67 Start: 58827, Stop: 59270, Start Num: 104
Candidate Starts for Saguaro_67:
(13, 58491), (33, 58551), (Start: 39 @58569 has 1 MA's), (59, 58626), (78, 58695), (83, 58716), (Start: 104 @58827 has 1 MA's), (125, 58938), (126, 58944), (128, 58965), (130, 58977), (131, 58980), (134, 59016), (143, 59088), (147, 59112),

Gene: Serendipitous_70 Start: 59224, Stop: 59772, Start Num: 64
Candidate Starts for Serendipitous_70:
(15, 59041), (27, 59080), (Start: 39 @59134 has 1 MA's), (Start: 64 @59224 has 1 MA's), (108, 59407), (120, 59446), (123, 59461), (130, 59497), (132, 59506), (137, 59557), (149, 59632), (171, 59734),

Gene: Shenyu_72 Start: 60293, Stop: 60793, Start Num: 86
Candidate Starts for Shenyu_72:
(15, 60068), (27, 60107), (Start: 39 @60161 has 1 MA's), (50, 60203), (Start: 64 @60251 has 1 MA's), (Start: 86 @60293 has 3 MA's), (92, 60335), (108, 60440), (120, 60488), (123, 60503), (124, 60506), (130, 60539), (132, 60548), (137, 60599), (149, 60674), (168, 60743), (171, 60755),

Gene: StAugustine_93 Start: 69941, Stop: 70345, Start Num: 77
Candidate Starts for StAugustine_93:
(Start: 77 @69941 has 2 MA's), (100, 70022), (115, 70100), (116, 70103), (129, 70178),

Gene: StinkyVeggy_71 Start: 59737, Stop: 60303, Start Num: 74
Candidate Starts for StinkyVeggy_71:
(15, 59521), (27, 59560), (50, 59656), (Start: 64 @59704 has 1 MA's), (74, 59737), (90, 59836), (108, 59950), (110, 59959), (120, 59998), (123, 60013), (124, 60016), (130, 60049), (132, 60058), (137, 60109), (149, 60184), (168, 60253), (171, 60265),

Gene: Suigeneris_73 Start: 59932, Stop: 60579, Start Num: 52
Candidate Starts for Suigeneris_73:
(6, 59740), (15, 59788), (21, 59806), (32, 59860), (Start: 39 @59881 has 1 MA's), (50, 59923), (Start: 52 @59932 has 2 MA's), (107, 60220), (120, 60262), (123, 60277), (128, 60301), (130, 60313), (132, 60322), (137, 60373), (149, 60448), (171, 60553),

Gene: Thonko_74 Start: 58270, Stop: 58695, Start Num: 93
Candidate Starts for Thonko_74:
(18, 57976), (24, 57991), (30, 58027), (42, 58084), (61, 58147), (70, 58180), (Start: 77 @58213 has 2 MA's), (Start: 93 @58270 has 2 MA's), (98, 58291), (108, 58366), (113, 58381), (114, 58384), (123, 58432), (153, 58633), (157, 58660),

Gene: Xincheng_68 Start: 61280, Stop: 61840, Start Num: 62
Candidate Starts for Xincheng_68:
(12, 61133), (13, 61139), (36, 61205), (56, 61256), (Start: 62 @61280 has 3 MA's), (94, 61400), (97, 61409), (118, 61508), (120, 61514), (124, 61532), (132, 61574), (133, 61577), (137, 61622), (138, 61634), (140, 61655), (154, 61718), (155, 61727),

Gene: Zemanar_68 Start: 59964, Stop: 60524, Start Num: 62
Candidate Starts for Zemanar_68:
(12, 59820), (13, 59826), (56, 59943), (Start: 62 @59964 has 3 MA's), (94, 60084), (97, 60093), (118, 60192), (120, 60198), (133, 60261), (137, 60306), (138, 60318), (160, 60435), (177, 60501),