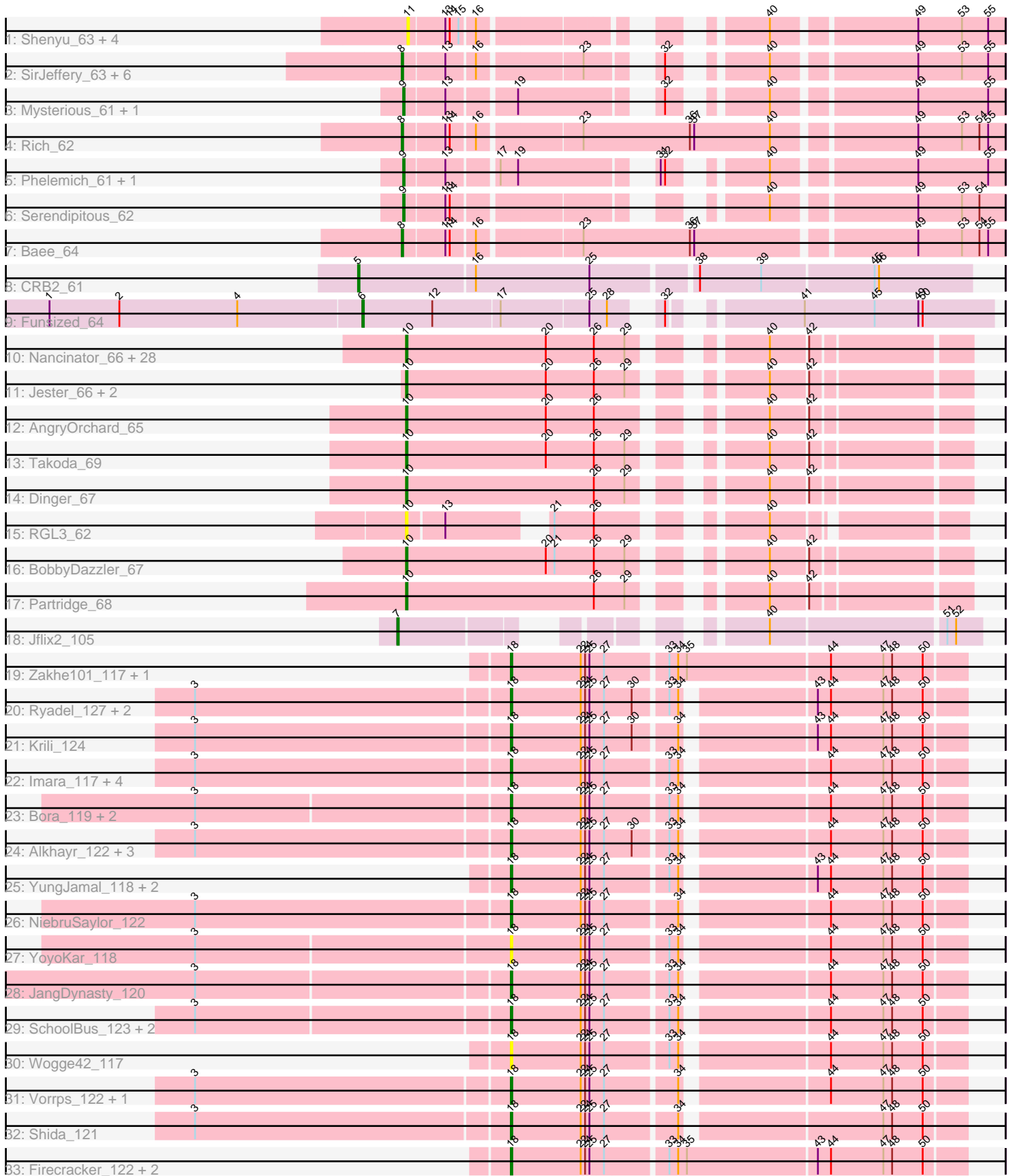


Pham 292690



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 292690 Report

This analysis was run 04/18/26 on database version 643.

Pham number 292690 has 94 members, 15 are drafts.

Phages represented in each track:

- Track 1 : Shenyu_63, StinkyVeggy_63, KarasumaRum_63, DigitDog_64, Nangang_63
- Track 2 : SirJeffery_63, Reccee_64, EastView9101_63, Rita130_63, Suigeneris_65, Acadian_64, Donny_65
- Track 3 : Mysterious_61, Nehemiah_62
- Track 4 : Rich_62
- Track 5 : Phelemich_61, Reprobate_62
- Track 6 : Serendipitous_62
- Track 7 : Bae_64
- Track 8 : CRB2_61
- Track 9 : Funsized_64
- Track 10 : Nancinator_66, Espica_68, Shuman_68, RexFury_66, Naiad_66, Gollum_67, UhSalsa_67, Bonanza_68, Belenaria_68, Natosaleda_66, Hiro_67, Alatin_66, RER2_61, Rasputin_67, Bradshaw_67, AppleCloud_64, Swann_67, CosmicSans_67, Rhodalysa_67, Krishelle_67, PhailMary_64, Yogi_68, Alpacados_66, Yoncess_66, TWAMP_67, StCroix_66, Phrankenstein_67, Lillie_67, Erik_67
- Track 11 : Jester_66, Harlequin_67, Bryce_66
- Track 12 : AngryOrchard_65
- Track 13 : Takoda_69
- Track 14 : Dinger_67
- Track 15 : RGL3_62
- Track 16 : BobbyDazzler_67
- Track 17 : Partridge_68
- Track 18 : Jflix2_105
- Track 19 : Zakhe101_117, Dylan_116
- Track 20 : Ryadel_127, MadKillah_125, Blessica_121
- Track 21 : Krili_124
- Track 22 : Imara_117, Catdawg_123, Murai_122, Idergollasper_126, Vagabond_121
- Track 23 : Bora_119, TelAviv_118, KingPhillip3_117
- Track 24 : Alkhayr_122, Winget_122, FoulBall_121, Schuy_122
- Track 25 : YungJamal_118, Corndog_118, Smooch_120
- Track 26 : NiebruSaylor_122
- Track 27 : YoyoKar_118
- Track 28 : JangDynasty_120
- Track 29 : SchoolBus_123, Familton_124, Zebo_121
- Track 30 : Woge42_117

- Track 31 : Vorrps_122, Mori_122
- Track 32 : Shida_121
- Track 33 : Firecracker_122, Wildflower_117, Ashwin_117

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

The start number called the most often in the published annotations is 10, it was called in 36 of the 79 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alatin_66, Alpacados_66, AngryOrchard_65, AppleCloud_64, Belenaria_68, BobbyDazzler_67, Bonanza_68, Bradshaw_67, Bryce_66, CosmicSans_67, Dinger_67, Erik_67, Espica_68, Gollum_67, Harlequin_67, Hiro_67, Jester_66, Krishelle_67, Lillie_67, Naiad_66, Nancinator_66, Natosaleda_66, Partridge_68, PhailMary_64, Phrankenstein_67, RER2_61, RGL3_62, Rasputin_67, RexFury_66, Rhodalysa_67, Shuman_68, StCroix_66, Swann_67, TWAMP_67, Takoda_69, UhSalsa_67, Yogi_68, Yoncess_66,

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

-

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

- Acadian_64, Alkhayr_122, Ashwin_117, Bae_64, Blessica_121, Bora_119, CRB2_61, Catdawg_123, Corndog_118, DigitDog_64, Donny_65, Dylan_116, EastView9101_63, Familton_124, Firecracker_122, FoulBall_121, Funsized_64, Idergollasper_126, Imara_117, JangDynasty_120, Jflix2_105, KarasumaRum_63, KingPhillip3_117, Krili_124, MadKillah_125, Mori_122, Murai_122, Mysterious_61, Nangang_63, Nehemiah_62, NiebruSaylor_122, Phelemich_61, Reccee_64, Reprobate_62, Rich_62, Rita130_63, Ryadel_127, SchoolBus_123, Schuy_122, Serendipitous_62, Shenyu_63, Shida_121, SirJeffery_63, Smooch_120, StinkyVeggy_63, Suigeneris_65, TelAviv_118, Vagabond_121, Vorrps_122, Wildflower_117, Winget_122, Wogge42_117, YoyoKar_118, YungJamal_118, Zakhe101_117, Zebo_121,

Summary by start number:

Start 5:

- Found in 1 of 94 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 79
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CRB2_61 (B9),

Start 6:

- Found in 1 of 94 (1.1%) of genes in pham
- Manual Annotations of this start: 1 of 79
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Funsized_64 (B9),

Start 7:

- Found in 1 of 94 (1.1%) of genes in pham

- Manual Annotations of this start: 1 of 79
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jflix2_105 (CF),

Start 8:

- Found in 9 of 94 (9.6%) of genes in pham
- Manual Annotations of this start: 6 of 79
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acadian_64 (B5), Bae_64 (B5), Donny_65 (B5), EastView9101_63 (B5), Reccee_64 (B5), Rich_62 (B5), Rita130_63 (B5), SirJeffery_63 (B5), Suigeneris_65 (B5),

Start 9:

- Found in 5 of 94 (5.3%) of genes in pham
- Manual Annotations of this start: 4 of 79
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mysterious_61 (B5), Nehemiah_62 (B5), Phelemich_61 (B5), Reprobate_62 (B5), Serendipitous_62 (B5),

Start 10:

- Found in 38 of 94 (40.4%) of genes in pham
- Manual Annotations of this start: 36 of 79
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alatin_66 (CA), Alpacados_66 (CA), AngryOrchard_65 (CA), AppleCloud_64 (CA), Belenaria_68 (CA), BobbyDazzler_67 (CA), Bonanza_68 (CA), Bradshaw_67 (CA), Bryce_66 (CA), CosmicSans_67 (CA), Dinger_67 (CA), Erik_67 (CA), Espica_68 (CA), Gollum_67 (CA), Harlequin_67 (CA), Hiro_67 (CA), Jester_66 (CA), Krishelle_67 (CA), Lillie_67 (CA), Naiad_66 (CA), Nancinator_66 (CA), Natosaleda_66 (CA), Partridge_68 (CA), PhailMary_64 (CA), Phrankenstien_67 (CA), RER2_61 (CA), RGL3_62 (CA), Rasputin_67 (CA), RexFury_66 (CA), Rhodalysa_67 (CA), Shuman_68 (CA), StCroix_66 (CA), Swann_67 (CA), TWAMP_67 (CA), Takoda_69 (CA), UhSalsa_67 (CA), Yogi_68 (CA), Yoncess_66 (CA),

Start 11:

- Found in 5 of 94 (5.3%) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: DigitDog_64 (B5), KarasumaRum_63 (B5), Nangang_63 (B5), Shenyu_63 (B5), StinkyVeggy_63 (B5),

Start 18:

- Found in 34 of 94 (36.2%) of genes in pham
- Manual Annotations of this start: 30 of 79
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Alkhayr_122 (O), Ashwin_117 (O), Blessica_121 (O), Bora_119 (O), Catdawg_123 (O), Corndog_118 (O), Dylan_116 (O), Familton_124 (O), Firecracker_122 (O), FoulBall_121 (O), Idergollasper_126 (O), Imara_117 (O), JangDynasty_120 (O), KingPhillip3_117 (O), Krili_124 (O), MadKillah_125 (O), Mori_122 (O), Murai_122 (O), NiebruSaylor_122 (O), Ryadel_127 (O), SchoolBus_123 (O), Schuy_122 (O), Shida_121 (O), Smooch_120 (O), TelAviv_118 (O), Vagabond_121 (O), Vorrps_122 (O), Wildflower_117 (O), Winget_122 (O), Wogge42_117 (O), YoyoKar_118 (O), YungJamal_118 (O),

Zakhe101_117 (O), Zebo_121 (O),

Summary by clusters:

There are 5 clusters represented in this pham: B5, CA, CF, O, B9,

Info for manual annotations of cluster B5:

- Start number 8 was manually annotated 6 times for cluster B5.
- Start number 9 was manually annotated 4 times for cluster B5.

Info for manual annotations of cluster B9:

- Start number 5 was manually annotated 1 time for cluster B9.
- Start number 6 was manually annotated 1 time for cluster B9.

Info for manual annotations of cluster CA:

- Start number 10 was manually annotated 36 times for cluster CA.

Info for manual annotations of cluster CF:

- Start number 7 was manually annotated 1 time for cluster CF.

Info for manual annotations of cluster O:

- Start number 18 was manually annotated 30 times for cluster O.

Gene Information:

Gene: Acadian_64 Start: 56676, Stop: 56335, Start Num: 8

Candidate Starts for Acadian_64:

(Start: 8 @56676 has 6 MA's), (13, 56649), (16, 56631), (23, 56565), (32, 56532), (40, 56484), (49, 56394), (53, 56364), (55, 56346),

Gene: Alatin_66 Start: 44950, Stop: 44609, Start Num: 10

Candidate Starts for Alatin_66:

(Start: 10 @44950 has 36 MA's), (20, 44854), (26, 44821), (29, 44800), (40, 44734), (42, 44710),

Gene: Alkhayr_122 Start: 68144, Stop: 67857, Start Num: 18

Candidate Starts for Alkhayr_122:

(3, 68354), (Start: 18 @68144 has 30 MA's), (22, 68096), (24, 68093), (25, 68090), (27, 68081), (30, 68063), (33, 68042), (34, 68036), (44, 67946), (47, 67910), (48, 67904), (50, 67883),

Gene: Alpacados_66 Start: 44773, Stop: 44432, Start Num: 10

Candidate Starts for Alpacados_66:

(Start: 10 @44773 has 36 MA's), (20, 44677), (26, 44644), (29, 44623), (40, 44557), (42, 44533),

Gene: AngryOrchard_65 Start: 44992, Stop: 44651, Start Num: 10

Candidate Starts for AngryOrchard_65:

(Start: 10 @44992 has 36 MA's), (20, 44896), (26, 44863), (40, 44776), (42, 44752),

Gene: AppleCloud_64 Start: 44667, Stop: 44326, Start Num: 10

Candidate Starts for AppleCloud_64:

(Start: 10 @44667 has 36 MA's), (20, 44571), (26, 44538), (29, 44517), (40, 44451), (42, 44427),

Gene: Ashwin_117 Start: 67056, Stop: 66757, Start Num: 18

Candidate Starts for Ashwin_117:

(Start: 18 @67056 has 30 MA's), (22, 67008), (24, 67005), (25, 67002), (27, 66993), (33, 66954), (34, 66948), (35, 66942), (43, 66855), (44, 66846), (47, 66810), (48, 66804), (50, 66783),

Gene: Bae_64 Start: 57648, Stop: 57262, Start Num: 8

Candidate Starts for Bae_64:

(Start: 8 @57648 has 6 MA's), (13, 57621), (14, 57618), (16, 57603), (23, 57537), (36, 57465), (37, 57462), (49, 57321), (53, 57291), (54, 57279), (55, 57273),

Gene: Belenaria_68 Start: 44815, Stop: 44474, Start Num: 10

Candidate Starts for Belenaria_68:

(Start: 10 @44815 has 36 MA's), (20, 44719), (26, 44686), (29, 44665), (40, 44599), (42, 44575),

Gene: Blessica_121 Start: 68810, Stop: 68523, Start Num: 18

Candidate Starts for Blessica_121:

(3, 69020), (Start: 18 @68810 has 30 MA's), (22, 68762), (24, 68759), (25, 68756), (27, 68747), (30, 68729), (33, 68708), (34, 68702), (43, 68621), (44, 68612), (47, 68576), (48, 68570), (50, 68549),

Gene: BobbyDazzler_67 Start: 44921, Stop: 44580, Start Num: 10

Candidate Starts for BobbyDazzler_67:

(Start: 10 @44921 has 36 MA's), (20, 44825), (21, 44819), (26, 44792), (29, 44771), (40, 44705), (42, 44681),

Gene: Bonanza_68 Start: 45225, Stop: 44884, Start Num: 10

Candidate Starts for Bonanza_68:

(Start: 10 @45225 has 36 MA's), (20, 45129), (26, 45096), (29, 45075), (40, 45009), (42, 44985),

Gene: Bora_119 Start: 68828, Stop: 68541, Start Num: 18

Candidate Starts for Bora_119:

(3, 69035), (Start: 18 @68828 has 30 MA's), (22, 68780), (24, 68777), (25, 68774), (27, 68765), (33, 68726), (34, 68720), (44, 68630), (47, 68594), (48, 68588), (50, 68567),

Gene: Bradshaw_67 Start: 44883, Stop: 44542, Start Num: 10

Candidate Starts for Bradshaw_67:

(Start: 10 @44883 has 36 MA's), (20, 44787), (26, 44754), (29, 44733), (40, 44667), (42, 44643),

Gene: Bryce_66 Start: 44629, Stop: 44288, Start Num: 10

Candidate Starts for Bryce_66:

(Start: 10 @44629 has 36 MA's), (20, 44533), (26, 44500), (29, 44479), (40, 44413), (42, 44389),

Gene: CRB2_61 Start: 57387, Stop: 56986, Start Num: 5

Candidate Starts for CRB2_61:

(Start: 5 @57387 has 1 MA's), (16, 57309), (25, 57231), (38, 57168), (39, 57126), (45, 57051), (46, 57048),

Gene: Catdawg_123 Start: 69464, Stop: 69177, Start Num: 18

Candidate Starts for Catdawg_123:

(3, 69674), (Start: 18 @69464 has 30 MA's), (22, 69416), (24, 69413), (25, 69410), (27, 69401), (33, 69362), (34, 69356), (44, 69266), (47, 69230), (48, 69224), (50, 69203),

Gene: Corndog_118 Start: 67104, Stop: 66817, Start Num: 18

Candidate Starts for Corndog_118:

(Start: 18 @67104 has 30 MA's), (22, 67056), (24, 67053), (25, 67050), (27, 67041), (33, 67002), (34, 66996), (43, 66915), (44, 66906), (47, 66870), (48, 66864), (50, 66843),

Gene: CosmicSans_67 Start: 44874, Stop: 44533, Start Num: 10

Candidate Starts for CosmicSans_67:

(Start: 10 @44874 has 36 MA's), (20, 44778), (26, 44745), (29, 44724), (40, 44658), (42, 44634),

Gene: DigitDog_64 Start: 56730, Stop: 56395, Start Num: 11

Candidate Starts for DigitDog_64:

(11, 56730), (13, 56706), (14, 56703), (15, 56697), (16, 56688), (40, 56544), (49, 56454), (53, 56424), (55, 56406),

Gene: Dinger_67 Start: 45010, Stop: 44669, Start Num: 10

Candidate Starts for Dinger_67:

(Start: 10 @45010 has 36 MA's), (26, 44881), (29, 44860), (40, 44794), (42, 44770),

Gene: Donny_65 Start: 56722, Stop: 56381, Start Num: 8

Candidate Starts for Donny_65:

(Start: 8 @56722 has 6 MA's), (13, 56695), (16, 56677), (23, 56611), (32, 56578), (40, 56530), (49, 56440), (53, 56410), (55, 56392),

Gene: Dylan_116 Start: 67157, Stop: 66858, Start Num: 18

Candidate Starts for Dylan_116:

(Start: 18 @67157 has 30 MA's), (22, 67109), (24, 67106), (25, 67103), (27, 67094), (33, 67055), (34, 67049), (35, 67043), (44, 66947), (47, 66911), (48, 66905), (50, 66884),

Gene: EastView9101_63 Start: 56420, Stop: 56079, Start Num: 8

Candidate Starts for EastView9101_63:

(Start: 8 @56420 has 6 MA's), (13, 56393), (16, 56375), (23, 56309), (32, 56276), (40, 56228), (49, 56138), (53, 56108), (55, 56090),

Gene: Erik_67 Start: 44705, Stop: 44364, Start Num: 10

Candidate Starts for Erik_67:

(Start: 10 @44705 has 36 MA's), (20, 44609), (26, 44576), (29, 44555), (40, 44489), (42, 44465),

Gene: Espica_68 Start: 44815, Stop: 44474, Start Num: 10

Candidate Starts for Espica_68:

(Start: 10 @44815 has 36 MA's), (20, 44719), (26, 44686), (29, 44665), (40, 44599), (42, 44575),

Gene: Familton_124 Start: 69183, Stop: 68896, Start Num: 18

Candidate Starts for Familton_124:

(3, 69390), (Start: 18 @69183 has 30 MA's), (22, 69135), (24, 69132), (25, 69129), (27, 69120), (33, 69081), (34, 69075), (44, 68985), (47, 68949), (48, 68943), (50, 68922),

Gene: Firecracker_122 Start: 68696, Stop: 68397, Start Num: 18

Candidate Starts for Firecracker_122:

(Start: 18 @68696 has 30 MA's), (22, 68648), (24, 68645), (25, 68642), (27, 68633), (33, 68594), (34, 68588), (35, 68582), (43, 68495), (44, 68486), (47, 68450), (48, 68444), (50, 68423),

Gene: FoulBall_121 Start: 68427, Stop: 68140, Start Num: 18

Candidate Starts for FoulBall_121:

(3, 68637), (Start: 18 @68427 has 30 MA's), (22, 68379), (24, 68376), (25, 68373), (27, 68364), (30, 68346), (33, 68325), (34, 68319), (44, 68229), (47, 68193), (48, 68187), (50, 68166),

Gene: Funsized_64 Start: 58606, Stop: 58226, Start Num: 6

Candidate Starts for Funsized_64:

(1, 58819), (2, 58771), (4, 58690), (Start: 6 @58606 has 1 MA's), (12, 58558), (17, 58513), (25, 58456), (28, 58444), (32, 58423), (41, 58354), (45, 58306), (49, 58276), (50, 58273),

Gene: Gollum_67 Start: 44816, Stop: 44475, Start Num: 10

Candidate Starts for Gollum_67:

(Start: 10 @44816 has 36 MA's), (20, 44720), (26, 44687), (29, 44666), (40, 44600), (42, 44576),

Gene: Harlequin_67 Start: 44664, Stop: 44323, Start Num: 10

Candidate Starts for Harlequin_67:

(Start: 10 @44664 has 36 MA's), (20, 44568), (26, 44535), (29, 44514), (40, 44448), (42, 44424),

Gene: Hiro_67 Start: 45135, Stop: 44794, Start Num: 10

Candidate Starts for Hiro_67:

(Start: 10 @45135 has 36 MA's), (20, 45039), (26, 45006), (29, 44985), (40, 44919), (42, 44895),

Gene: Idergollasper_126 Start: 69870, Stop: 69583, Start Num: 18

Candidate Starts for Idergollasper_126:

(3, 70080), (Start: 18 @69870 has 30 MA's), (22, 69822), (24, 69819), (25, 69816), (27, 69807), (33, 69768), (34, 69762), (44, 69672), (47, 69636), (48, 69630), (50, 69609),

Gene: Imara_117 Start: 68177, Stop: 67890, Start Num: 18

Candidate Starts for Imara_117:

(3, 68387), (Start: 18 @68177 has 30 MA's), (22, 68129), (24, 68126), (25, 68123), (27, 68114), (33, 68075), (34, 68069), (44, 67979), (47, 67943), (48, 67937), (50, 67916),

Gene: JangDynasty_120 Start: 68232, Stop: 67945, Start Num: 18

Candidate Starts for JangDynasty_120:

(3, 68439), (Start: 18 @68232 has 30 MA's), (22, 68184), (24, 68181), (25, 68178), (27, 68169), (33, 68130), (34, 68124), (44, 68034), (47, 67998), (48, 67992), (50, 67971),

Gene: Jester_66 Start: 44595, Stop: 44254, Start Num: 10

Candidate Starts for Jester_66:

(Start: 10 @44595 has 36 MA's), (20, 44499), (26, 44466), (29, 44445), (40, 44379), (42, 44355),

Gene: Jflix2_105 Start: 60673, Stop: 60356, Start Num: 7

Candidate Starts for Jflix2_105:

(Start: 7 @60673 has 1 MA's), (40, 60493), (51, 60379), (52, 60373),

Gene: KarasumaRum_63 Start: 56576, Stop: 56241, Start Num: 11

Candidate Starts for KarasumaRum_63:

(11, 56576), (13, 56552), (14, 56549), (15, 56543), (16, 56534), (40, 56390), (49, 56300), (53, 56270), (55, 56252),

Gene: KingPhillip3_117 Start: 68739, Stop: 68452, Start Num: 18

Candidate Starts for KingPhillip3_117:

(3, 68946), (Start: 18 @68739 has 30 MA's), (22, 68691), (24, 68688), (25, 68685), (27, 68676), (33, 68637), (34, 68631), (44, 68541), (47, 68505), (48, 68499), (50, 68478),

Gene: Krili_124 Start: 69021, Stop: 68734, Start Num: 18

Candidate Starts for Krili_124:

(3, 69231), (Start: 18 @69021 has 30 MA's), (22, 68973), (24, 68970), (25, 68967), (27, 68958), (30, 68940), (34, 68913), (43, 68832), (44, 68823), (47, 68787), (48, 68781), (50, 68760),

Gene: Krishelle_67 Start: 45243, Stop: 44902, Start Num: 10

Candidate Starts for Krishelle_67:

(Start: 10 @45243 has 36 MA's), (20, 45147), (26, 45114), (29, 45093), (40, 45027), (42, 45003),

Gene: Lillie_67 Start: 44874, Stop: 44533, Start Num: 10

Candidate Starts for Lillie_67:

(Start: 10 @44874 has 36 MA's), (20, 44778), (26, 44745), (29, 44724), (40, 44658), (42, 44634),

Gene: MadKillah_125 Start: 68497, Stop: 68210, Start Num: 18

Candidate Starts for MadKillah_125:

(3, 68707), (Start: 18 @68497 has 30 MA's), (22, 68449), (24, 68446), (25, 68443), (27, 68434), (30, 68416), (33, 68395), (34, 68389), (43, 68308), (44, 68299), (47, 68263), (48, 68257), (50, 68236),

Gene: Mori_122 Start: 69047, Stop: 68760, Start Num: 18

Candidate Starts for Mori_122:

(3, 69257), (Start: 18 @69047 has 30 MA's), (22, 68999), (24, 68996), (25, 68993), (27, 68984), (34, 68939), (44, 68849), (47, 68813), (48, 68807), (50, 68786),

Gene: Murai_122 Start: 68865, Stop: 68578, Start Num: 18

Candidate Starts for Murai_122:

(3, 69075), (Start: 18 @68865 has 30 MA's), (22, 68817), (24, 68814), (25, 68811), (27, 68802), (33, 68763), (34, 68757), (44, 68667), (47, 68631), (48, 68625), (50, 68604),

Gene: Mysterious_61 Start: 56569, Stop: 56225, Start Num: 9

Candidate Starts for Mysterious_61:

(Start: 9 @56569 has 4 MA's), (13, 56542), (19, 56500), (32, 56422), (40, 56374), (49, 56284), (55, 56236),

Gene: Naiad_66 Start: 44896, Stop: 44555, Start Num: 10

Candidate Starts for Naiad_66:

(Start: 10 @44896 has 36 MA's), (20, 44800), (26, 44767), (29, 44746), (40, 44680), (42, 44656),

Gene: Nancinator_66 Start: 44213, Stop: 43872, Start Num: 10

Candidate Starts for Nancinator_66:

(Start: 10 @44213 has 36 MA's), (20, 44117), (26, 44084), (29, 44063), (40, 43997), (42, 43973),

Gene: Nangang_63 Start: 56756, Stop: 56421, Start Num: 11

Candidate Starts for Nangang_63:

(11, 56756), (13, 56732), (14, 56729), (15, 56723), (16, 56714), (40, 56570), (49, 56480), (53, 56450), (55, 56432),

Gene: Natosaleda_66 Start: 44814, Stop: 44473, Start Num: 10

Candidate Starts for Natosaleda_66:

(Start: 10 @44814 has 36 MA's), (20, 44718), (26, 44685), (29, 44664), (40, 44598), (42, 44574),

Gene: Nehemiah_62 Start: 56572, Stop: 56228, Start Num: 9

Candidate Starts for Nehemiah_62:

(Start: 9 @56572 has 4 MA's), (13, 56545), (19, 56503), (32, 56425), (40, 56377), (49, 56287), (55, 56239),

Gene: NiebruSaylor_122 Start: 68161, Stop: 67874, Start Num: 18
Candidate Starts for NiebruSaylor_122:
(3, 68371), (Start: 18 @68161 has 30 MA's), (22, 68113), (24, 68110), (25, 68107), (27, 68098), (34, 68053), (44, 67963), (47, 67927), (48, 67921), (50, 67900),

Gene: Partridge_68 Start: 45356, Stop: 45015, Start Num: 10
Candidate Starts for Partridge_68:
(Start: 10 @45356 has 36 MA's), (26, 45227), (29, 45206), (40, 45140), (42, 45116),

Gene: PhailMary_64 Start: 43891, Stop: 43550, Start Num: 10
Candidate Starts for PhailMary_64:
(Start: 10 @43891 has 36 MA's), (20, 43795), (26, 43762), (29, 43741), (40, 43675), (42, 43651),

Gene: Phelemich_61 Start: 56567, Stop: 56223, Start Num: 9
Candidate Starts for Phelemich_61:
(Start: 9 @56567 has 4 MA's), (13, 56540), (17, 56510), (19, 56498), (31, 56423), (32, 56420), (40, 56372), (49, 56282), (55, 56234),

Gene: Phrankenstein_67 Start: 44820, Stop: 44479, Start Num: 10
Candidate Starts for Phrankenstein_67:
(Start: 10 @44820 has 36 MA's), (20, 44724), (26, 44691), (29, 44670), (40, 44604), (42, 44580),

Gene: RER2_61 Start: 41746, Stop: 41405, Start Num: 10
Candidate Starts for RER2_61:
(Start: 10 @41746 has 36 MA's), (20, 41650), (26, 41617), (29, 41596), (40, 41530), (42, 41506),

Gene: RGL3_62 Start: 43307, Stop: 42999, Start Num: 10
Candidate Starts for RGL3_62:
(Start: 10 @43307 has 36 MA's), (13, 43283), (21, 43229), (26, 43202), (40, 43115),

Gene: Rasputin_67 Start: 44844, Stop: 44503, Start Num: 10
Candidate Starts for Rasputin_67:
(Start: 10 @44844 has 36 MA's), (20, 44748), (26, 44715), (29, 44694), (40, 44628), (42, 44604),

Gene: Reccee_64 Start: 56805, Stop: 56464, Start Num: 8
Candidate Starts for Reccee_64:
(Start: 8 @56805 has 6 MA's), (13, 56778), (16, 56760), (23, 56694), (32, 56661), (40, 56613), (49, 56523), (53, 56493), (55, 56475),

Gene: Reprobate_62 Start: 56572, Stop: 56228, Start Num: 9
Candidate Starts for Reprobate_62:
(Start: 9 @56572 has 4 MA's), (13, 56545), (17, 56515), (19, 56503), (31, 56428), (32, 56425), (40, 56377), (49, 56287), (55, 56239),

Gene: RexFury_66 Start: 44904, Stop: 44563, Start Num: 10
Candidate Starts for RexFury_66:
(Start: 10 @44904 has 36 MA's), (20, 44808), (26, 44775), (29, 44754), (40, 44688), (42, 44664),

Gene: Rhodalysa_67 Start: 44874, Stop: 44533, Start Num: 10
Candidate Starts for Rhodalysa_67:
(Start: 10 @44874 has 36 MA's), (20, 44778), (26, 44745), (29, 44724), (40, 44658), (42, 44634),

Gene: Rich_62 Start: 57709, Stop: 57323, Start Num: 8

Candidate Starts for Rich_62:

(Start: 8 @57709 has 6 MA's), (13, 57682), (14, 57679), (16, 57664), (23, 57598), (36, 57526), (37, 57523), (40, 57472), (49, 57382), (53, 57352), (54, 57340), (55, 57334),

Gene: Rita130_63 Start: 56618, Stop: 56277, Start Num: 8

Candidate Starts for Rita130_63:

(Start: 8 @56618 has 6 MA's), (13, 56591), (16, 56573), (23, 56507), (32, 56474), (40, 56426), (49, 56336), (53, 56306), (55, 56288),

Gene: Ryadel_127 Start: 70013, Stop: 69726, Start Num: 18

Candidate Starts for Ryadel_127:

(3, 70223), (Start: 18 @70013 has 30 MA's), (22, 69965), (24, 69962), (25, 69959), (27, 69950), (30, 69932), (33, 69911), (34, 69905), (43, 69824), (44, 69815), (47, 69779), (48, 69773), (50, 69752),

Gene: SchoolBus_123 Start: 69047, Stop: 68760, Start Num: 18

Candidate Starts for SchoolBus_123:

(3, 69254), (Start: 18 @69047 has 30 MA's), (22, 68999), (24, 68996), (25, 68993), (27, 68984), (33, 68945), (34, 68939), (44, 68849), (47, 68813), (48, 68807), (50, 68786),

Gene: Schuy_122 Start: 68206, Stop: 67919, Start Num: 18

Candidate Starts for Schuy_122:

(3, 68416), (Start: 18 @68206 has 30 MA's), (22, 68158), (24, 68155), (25, 68152), (27, 68143), (30, 68125), (33, 68104), (34, 68098), (44, 68008), (47, 67972), (48, 67966), (50, 67945),

Gene: Serendipitous_62 Start: 56107, Stop: 55766, Start Num: 9

Candidate Starts for Serendipitous_62:

(Start: 9 @56107 has 4 MA's), (13, 56080), (14, 56077), (40, 55915), (49, 55825), (53, 55795), (54, 55783),

Gene: Shenyu_63 Start: 56833, Stop: 56498, Start Num: 11

Candidate Starts for Shenyu_63:

(11, 56833), (13, 56809), (14, 56806), (15, 56800), (16, 56791), (40, 56647), (49, 56557), (53, 56527), (55, 56509),

Gene: Shida_121 Start: 68708, Stop: 68421, Start Num: 18

Candidate Starts for Shida_121:

(3, 68918), (Start: 18 @68708 has 30 MA's), (22, 68660), (24, 68657), (25, 68654), (27, 68645), (34, 68600), (47, 68474), (48, 68468), (50, 68447),

Gene: Shuman_68 Start: 44825, Stop: 44484, Start Num: 10

Candidate Starts for Shuman_68:

(Start: 10 @44825 has 36 MA's), (20, 44729), (26, 44696), (29, 44675), (40, 44609), (42, 44585),

Gene: SirJeffery_63 Start: 56753, Stop: 56412, Start Num: 8

Candidate Starts for SirJeffery_63:

(Start: 8 @56753 has 6 MA's), (13, 56726), (16, 56708), (23, 56642), (32, 56609), (40, 56561), (49, 56471), (53, 56441), (55, 56423),

Gene: Smooch_120 Start: 68750, Stop: 68481, Start Num: 18

Candidate Starts for Smooch_120:

(Start: 18 @68750 has 30 MA's), (22, 68702), (24, 68699), (25, 68696), (27, 68687), (33, 68648), (34, 68642), (43, 68561), (44, 68552), (47, 68516), (48, 68510), (50, 68489),

Gene: StCroix_66 Start: 44896, Stop: 44555, Start Num: 10
Candidate Starts for StCroix_66:
(Start: 10 @44896 has 36 MA's), (20, 44800), (26, 44767), (29, 44746), (40, 44680), (42, 44656),

Gene: StinkyVeggy_63 Start: 56576, Stop: 56241, Start Num: 11
Candidate Starts for StinkyVeggy_63:
(11, 56576), (13, 56552), (14, 56549), (15, 56543), (16, 56534), (40, 56390), (49, 56300), (53, 56270),
(55, 56252),

Gene: Suigeneris_65 Start: 56871, Stop: 56530, Start Num: 8
Candidate Starts for Suigeneris_65:
(Start: 8 @56871 has 6 MA's), (13, 56844), (16, 56826), (23, 56760), (32, 56727), (40, 56679), (49,
56589), (53, 56559), (55, 56541),

Gene: Swann_67 Start: 44872, Stop: 44531, Start Num: 10
Candidate Starts for Swann_67:
(Start: 10 @44872 has 36 MA's), (20, 44776), (26, 44743), (29, 44722), (40, 44656), (42, 44632),

Gene: TWAMP_67 Start: 44874, Stop: 44533, Start Num: 10
Candidate Starts for TWAMP_67:
(Start: 10 @44874 has 36 MA's), (20, 44778), (26, 44745), (29, 44724), (40, 44658), (42, 44634),

Gene: Takoda_69 Start: 45200, Stop: 44859, Start Num: 10
Candidate Starts for Takoda_69:
(Start: 10 @45200 has 36 MA's), (20, 45104), (26, 45071), (29, 45050), (40, 44984), (42, 44960),

Gene: TelAviv_118 Start: 68792, Stop: 68505, Start Num: 18
Candidate Starts for TelAviv_118:
(3, 68999), (Start: 18 @68792 has 30 MA's), (22, 68744), (24, 68741), (25, 68738), (27, 68729), (33,
68690), (34, 68684), (44, 68594), (47, 68558), (48, 68552), (50, 68531),

Gene: UhSalsa_67 Start: 44815, Stop: 44474, Start Num: 10
Candidate Starts for UhSalsa_67:
(Start: 10 @44815 has 36 MA's), (20, 44719), (26, 44686), (29, 44665), (40, 44599), (42, 44575),

Gene: Vagabond_121 Start: 68207, Stop: 67920, Start Num: 18
Candidate Starts for Vagabond_121:
(3, 68417), (Start: 18 @68207 has 30 MA's), (22, 68159), (24, 68156), (25, 68153), (27, 68144), (33,
68105), (34, 68099), (44, 68009), (47, 67973), (48, 67967), (50, 67946),

Gene: Vorrrps_122 Start: 69046, Stop: 68759, Start Num: 18
Candidate Starts for Vorrrps_122:
(3, 69256), (Start: 18 @69046 has 30 MA's), (22, 68998), (24, 68995), (25, 68992), (27, 68983), (34,
68938), (44, 68848), (47, 68812), (48, 68806), (50, 68785),

Gene: Wildflower_117 Start: 66697, Stop: 66398, Start Num: 18
Candidate Starts for Wildflower_117:
(Start: 18 @66697 has 30 MA's), (22, 66649), (24, 66646), (25, 66643), (27, 66634), (33, 66595), (34,
66589), (35, 66583), (43, 66496), (44, 66487), (47, 66451), (48, 66445), (50, 66424),

Gene: Winget_122 Start: 68897, Stop: 68610, Start Num: 18
Candidate Starts for Winget_122:

(3, 69107), (Start: 18 @68897 has 30 MA's), (22, 68849), (24, 68846), (25, 68843), (27, 68834), (30, 68816), (33, 68795), (34, 68789), (44, 68699), (47, 68663), (48, 68657), (50, 68636),

Gene: Wogge42_117 Start: 68239, Stop: 67952, Start Num: 18

Candidate Starts for Wogge42_117:

(Start: 18 @68239 has 30 MA's), (22, 68191), (24, 68188), (25, 68185), (27, 68176), (33, 68137), (34, 68131), (44, 68041), (47, 68005), (48, 67999), (50, 67978),

Gene: Yogi_68 Start: 45225, Stop: 44884, Start Num: 10

Candidate Starts for Yogi_68:

(Start: 10 @45225 has 36 MA's), (20, 45129), (26, 45096), (29, 45075), (40, 45009), (42, 44985),

Gene: Yoncess_66 Start: 44633, Stop: 44292, Start Num: 10

Candidate Starts for Yoncess_66:

(Start: 10 @44633 has 36 MA's), (20, 44537), (26, 44504), (29, 44483), (40, 44417), (42, 44393),

Gene: YoyoKar_118 Start: 68255, Stop: 67968, Start Num: 18

Candidate Starts for YoyoKar_118:

(3, 68465), (Start: 18 @68255 has 30 MA's), (22, 68207), (24, 68204), (25, 68201), (27, 68192), (33, 68153), (34, 68147), (44, 68057), (47, 68021), (48, 68015), (50, 67994),

Gene: YungJamal_118 Start: 67548, Stop: 67261, Start Num: 18

Candidate Starts for YungJamal_118:

(Start: 18 @67548 has 30 MA's), (22, 67500), (24, 67497), (25, 67494), (27, 67485), (33, 67446), (34, 67440), (43, 67359), (44, 67350), (47, 67314), (48, 67308), (50, 67287),

Gene: Zakhe101_117 Start: 66996, Stop: 66697, Start Num: 18

Candidate Starts for Zakhe101_117:

(Start: 18 @66996 has 30 MA's), (22, 66948), (24, 66945), (25, 66942), (27, 66933), (33, 66894), (34, 66888), (35, 66882), (44, 66786), (47, 66750), (48, 66744), (50, 66723),

Gene: Zebo_121 Start: 68552, Stop: 68265, Start Num: 18

Candidate Starts for Zebo_121:

(3, 68759), (Start: 18 @68552 has 30 MA's), (22, 68504), (24, 68501), (25, 68498), (27, 68489), (33, 68450), (34, 68444), (44, 68354), (47, 68318), (48, 68312), (50, 68291),