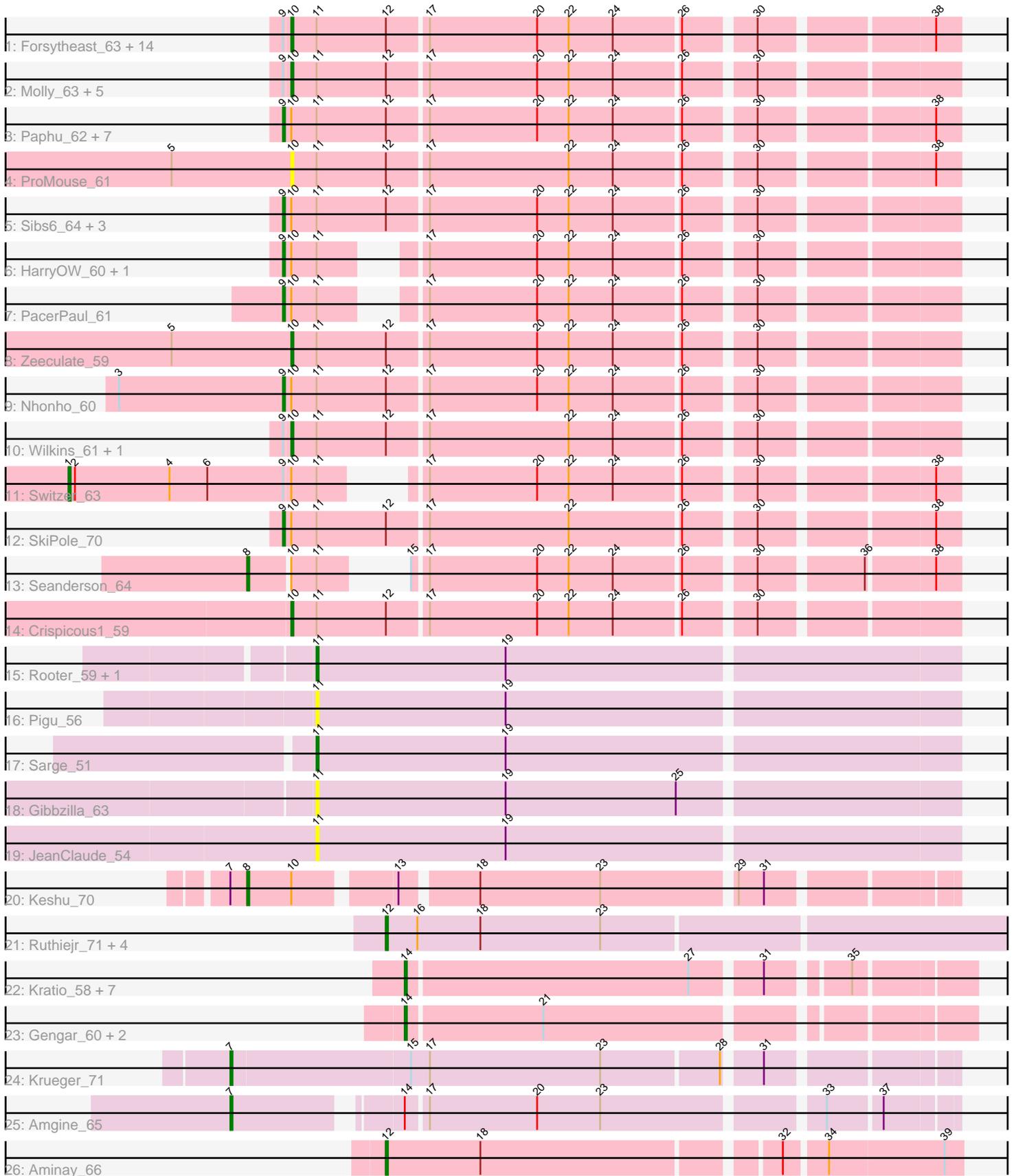# Pham 291133

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 291133 Report

This analysis was run 03/28/26 on database version 641.

Pham number 291133 has 71 members, 8 are drafts.

Phages represented in each track:
• Track 1 : Forsytheast_63, Kykar_63, HermioneGrange_64, Moose_63, Bones_61, Cueylyss_62, U2_60, IgnatiusPatJac_62, BigMau_64, Parliament_64, Bob3_63, Bruns_63, Adahisdi_62, SwissCheese_65, Arlo_60
• Track 2 : Molly_63, GMonster_59, Killigrew_61, Briton15_66, McGuire_63, Zephyr_63
• Track 3 : Paphu_62, Rohr_64, Petp2012_65, Tasp14_66, Museum_64, DreamCatcher_65, BluSpix_60, MPlant7149_62
• Track 4 : ProMouse_61
• Track 5 : Sibs6_64, Seabiscuit_65, HanShotFirst_63, Watermelon_62
• Track 6 : HarryOW_60, Espresso_59
• Track 7 : PacerPaul_61
• Track 8 : Zeeculate_59
• Track 9 : Nhonho_60
• Track 10 : Wilkins_61, Topgun_60
• Track 11 : Switzer_63
• Track 12 : SkiPole_70
• Track 13 : Seanderson_64
• Track 14 : Crispicous1_59
• Track 15 : Rooter_59, Shoya_56
• Track 16 : Pigu_56
• Track 17 : Sarge_51
• Track 18 : Gibbzilla_63
• Track 19 : JeanClaude_54
• Track 20 : Keshu_70
• Track 21 : Ruthiejr_71, Y10_67, OmniCritical_69, Y2_67, JF1_70
• Track 22 : Kratio_58, DoubleChamp_57, BananenDer11_57, ViviJ_59, InvictusManeo_58, LilDirt_57, Collard_58, Agent47_60
• Track 23 : Gengar_60, Miryou_64, OkiRoe_61
• Track 24 : Krueger_71
• Track 25 : Amgine_65
• Track 26 : Aminay_66

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 25 of the 63 non-draft genes in the pham.

Genes that call this "Most Annotated" start:
• Adahisdi_62, Arlo_60, BigMau_64, Bob3_63, Bones_61, Briton15_66, Bruns_63, Crispicous1_59, Cueylyss_62, Forsytheast_63, GMonster_59, HermioneGrange_64, IgnatiusPatJac_62, Killigrew_61, Kykar_63, McGuire_63, Molly_63, Moose_63, Parliament_64, ProMouse_61, SwissCheese_65, Topgun_60, U2_60, Wilkins_61, Zeeculate_59, Zephyr_63,

Genes that have the "Most Annotated" start but do not call it:
• BluSpix_60, DreamCatcher_65, Espresso_59, HanShotFirst_63, HarryOW_60, Keshu_70, MPlant7149_62, Museum_64, Nhonho_60, PacerPaul_61, Paphu_62, Petp2012_65, Rohr_64, Seabiscuit_65, Seanderson_64, Sibs6_64, SkiPole_70, Switzer_63, Tasp14_66, Watermelon_62,

Genes that do not have the "Most Annotated" start:
• Agent47_60, Amgine_65, Aminay_66, BananenDer11_57, Collard_58, DoubleChamp_57, Gengar_60, Gibbzilla_63, InvictusManeo_58, JF1_70, JeanClaude_54, Kratio_58, Krueger_71, LilDirt_57, Miryou_64, OkiRoe_61, OmniCritical_69, Pigu_56, Rooter_59, Ruthiejr_71, Sarge_51, Shoya_56, ViviJ_59, Y10_67, Y2_67,

Summary by start number:

Start 1:
• Found in 1 of 71 (1.4%) of genes in pham
• Manual Annotations of this start: 1 of 63
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Switzer_63 (A1),

Start 7:
• Found in 3 of 71 (4.2%) of genes in pham
• Manual Annotations of this start: 2 of 63
• Called 66.7% of time when present
• Phage (with cluster) where this start called: Amgine_65 (K6), Krueger_71 (K6),

Start 8:
• Found in 2 of 71 (2.8%) of genes in pham
• Manual Annotations of this start: 2 of 63
• Called 100.0% of time when present
• Phage (with cluster) where this start called: Keshu_70 (K3), Seanderson_64 (A1),

Start 9:
• Found in 41 of 71 (57.7%) of genes in pham
• Manual Annotations of this start: 17 of 63
• Called 41.5% of time when present
• Phage (with cluster) where this start called: BluSpix_60 (A1), DreamCatcher_65 (A1), Espresso_59 (A1), HanShotFirst_63 (A1), HarryOW_60 (A1), MPlant7149_62 (A1), Museum_64 (A1), Nhonho_60 (A1), PacerPaul_61 (A1), Paphu_62 (A1), Petp2012_65 (A1), Rohr_64 (A1), Seabiscuit_65 (A1), Sibs6_64 (A1), SkiPole_70 (A1), Tasp14_66 (A1), Watermelon_62 (A1),

Start 10:
• Found in 46 of 71 (64.8%) of genes in pham
• Manual Annotations of this start: 25 of 63
• Called 56.5% of time when present
• Phage (with cluster) where this start called: Adahisdi_62 (A1), Arlo_60 (A1), BigMau_64 (A1), Bob3_63 (A1), Bones_61 (A1), Briton15_66 (A1), Bruns_63 (A1), Crispicous1_59 (A1), Cueylyss_62 (A1), Forsytheast_63 (A1), GMonster_59 (A1), HermioneGrange_64 (A1), IgnatiusPatJac_62 (A1), Killigrew_61 (A1), Kykar_63 (A1), McGuire_63 (A1), Molly_63 (A1), Moose_63 (A1), Parliament_64 (A1), ProMouse_61 (A1), SwissCheese_65 (A1), Topgun_60 (A1), U2_60 (A1), Wilkins_61 (A1), Zeeculate_59 (A1), Zephyr_63 (A1),

Start 11:
• Found in 51 of 71 (71.8%) of genes in pham
• Manual Annotations of this start: 2 of 63
• Called 11.8% of time when present
• Phage (with cluster) where this start called: Gibbzilla_63 (FB), JeanClaude_54 (FB), Pigu_56 (FB), Rooter_59 (FB), Sarge_51 (FB), Shoya_56 (FB),

Start 12:
• Found in 46 of 71 (64.8%) of genes in pham
• Manual Annotations of this start: 6 of 63
• Called 13.0% of time when present
• Phage (with cluster) where this start called: Aminay_66 (K7), JF1_70 (K4), OmniCritical_69 (K4), Ruthiejr_71 (K4), Y10_67 (K4), Y2_67 (K4),

Start 14:
• Found in 12 of 71 (16.9%) of genes in pham
• Manual Annotations of this start: 8 of 63
• Called 91.7% of time when present
• Phage (with cluster) where this start called: Agent47_60 (K5), BananenDer11_57 (K5), Collard_58 (K5), DoubleChamp_57 (K5), Gengar_60 (K5), InvictusManeo_58 (K5), Kratio_58 (K5), LilDirt_57 (K5), Miryou_64 (K5), OkiRoe_61 (K5), ViviJ_59 (K5),

Summary by clusters:

There are 7 clusters represented in this pham: K3, A1, FB, K7, K6, K5, K4,

Info for manual annotations of cluster A1:
•Start number 1 was manually annotated 1 time for cluster A1.
•Start number 8 was manually annotated 1 time for cluster A1.
•Start number 9 was manually annotated 17 times for cluster A1.
•Start number 10 was manually annotated 25 times for cluster A1.

Info for manual annotations of cluster FB:
•Start number 11 was manually annotated 2 times for cluster FB.

Info for manual annotations of cluster K3:
•Start number 8 was manually annotated 1 time for cluster K3.

Info for manual annotations of cluster K4:
•Start number 12 was manually annotated 5 times for cluster K4.

Info for manual annotations of cluster K5:
•Start number 14 was manually annotated 8 times for cluster K5.

Info for manual annotations of cluster K6:
•Start number 7 was manually annotated 2 times for cluster K6.

Info for manual annotations of cluster K7:
•Start number 12 was manually annotated 1 time for cluster K7.

Gene Information:

Gene: Adahisdi_62 Start: 42536, Stop: 42240, Start Num: 10
Candidate Starts for Adahisdi_62:
(Start: 9 @42539 has 17 MA's), (Start: 10 @42536 has 25 MA's), (Start: 11 @42524 has 2 MA's), (Start: 12 @42491 has 6 MA's), (17, 42473), (20, 42422), (22, 42407), (24, 42386), (26, 42356), (30, 42326), (38, 42251),

Gene: Agent47_60 Start: 40769, Stop: 41017, Start Num: 14
Candidate Starts for Agent47_60:
(Start: 14 @40769 has 8 MA's), (27, 40901), (31, 40931), (35, 40964),

Gene: Amgine_65 Start: 44496, Stop: 44807, Start Num: 7
Candidate Starts for Amgine_65:
(Start: 7 @44496 has 2 MA's), (Start: 14 @44565 has 8 MA's), (17, 44574), (20, 44625), (23, 44655), (33, 44751), (37, 44775),

Gene: Aminay_66 Start: 43144, Stop: 43401, Start Num: 12
Candidate Starts for Aminay_66:
(Start: 12 @43144 has 6 MA's), (18, 43189), (32, 43321), (34, 43339), (39, 43393),

Gene: Arlo_60 Start: 40881, Stop: 40585, Start Num: 10
Candidate Starts for Arlo_60:
(Start: 9 @40884 has 17 MA's), (Start: 10 @40881 has 25 MA's), (Start: 11 @40869 has 2 MA's), (Start: 12 @40836 has 6 MA's), (17, 40818), (20, 40767), (22, 40752), (24, 40731), (26, 40701), (30, 40671), (38, 40596),

Gene: BananenDer11_57 Start: 40730, Stop: 40978, Start Num: 14
Candidate Starts for BananenDer11_57:
(Start: 14 @40730 has 8 MA's), (27, 40862), (31, 40892), (35, 40925),

Gene: BigMau_64 Start: 41801, Stop: 41505, Start Num: 10
Candidate Starts for BigMau_64:
(Start: 9 @41804 has 17 MA's), (Start: 10 @41801 has 25 MA's), (Start: 11 @41789 has 2 MA's), (Start: 12 @41756 has 6 MA's), (17, 41738), (20, 41687), (22, 41672), (24, 41651), (26, 41621), (30, 41591), (38, 41516),

Gene: BluSpix_60 Start: 37016, Stop: 36717, Start Num: 9
Candidate Starts for BluSpix_60:
(Start: 9 @37016 has 17 MA's), (Start: 10 @37013 has 25 MA's), (Start: 11 @37001 has 2 MA's), (Start: 12 @36968 has 6 MA's), (17, 36950), (20, 36899), (22, 36884), (24, 36863), (26, 36833), (30, 36803), (38, 36728),

Gene: Bob3_63 Start: 41074, Stop: 40778, Start Num: 10
Candidate Starts for Bob3_63:
(Start: 9 @41077 has 17 MA's), (Start: 10 @41074 has 25 MA's), (Start: 11 @41062 has 2 MA's),
(Start: 12 @41029 has 6 MA's), (17, 41011), (20, 40960), (22, 40945), (24, 40924), (26, 40894), (30,
40864), (38, 40789),

Gene: Bones_61 Start: 42258, Stop: 41962, Start Num: 10
Candidate Starts for Bones_61:
(Start: 9 @42261 has 17 MA's), (Start: 10 @42258 has 25 MA's), (Start: 11 @42246 has 2 MA's),
(Start: 12 @42213 has 6 MA's), (17, 42195), (20, 42144), (22, 42129), (24, 42108), (26, 42078), (30,
42048), (38, 41973),

Gene: Briton15_66 Start: 42878, Stop: 42582, Start Num: 10
Candidate Starts for Briton15_66:
(Start: 9 @42881 has 17 MA's), (Start: 10 @42878 has 25 MA's), (Start: 11 @42866 has 2 MA's),
(Start: 12 @42833 has 6 MA's), (17, 42815), (20, 42764), (22, 42749), (24, 42728), (26, 42698), (30,
42668),

Gene: Bruns_63 Start: 40455, Stop: 40159, Start Num: 10
Candidate Starts for Bruns_63:
(Start: 9 @40458 has 17 MA's), (Start: 10 @40455 has 25 MA's), (Start: 11 @40443 has 2 MA's),
(Start: 12 @40410 has 6 MA's), (17, 40392), (20, 40341), (22, 40326), (24, 40305), (26, 40275), (30,
40245), (38, 40170),

Gene: Collard_58 Start: 40730, Stop: 40978, Start Num: 14
Candidate Starts for Collard_58:
(Start: 14 @40730 has 8 MA's), (27, 40862), (31, 40892), (35, 40925),

Gene: Crispicous1_59 Start: 39995, Stop: 39699, Start Num: 10
Candidate Starts for Crispicous1_59:
(Start: 10 @39995 has 25 MA's), (Start: 11 @39983 has 2 MA's), (Start: 12 @39950 has 6 MA's), (17,
39932), (20, 39881), (22, 39866), (24, 39845), (26, 39815), (30, 39785),

Gene: Cueylyss_62 Start: 42458, Stop: 42162, Start Num: 10
Candidate Starts for Cueylyss_62:
(Start: 9 @42461 has 17 MA's), (Start: 10 @42458 has 25 MA's), (Start: 11 @42446 has 2 MA's),
(Start: 12 @42413 has 6 MA's), (17, 42395), (20, 42344), (22, 42329), (24, 42308), (26, 42278), (30,
42248), (38, 42173),

Gene: DoubleChamp_57 Start: 40730, Stop: 40978, Start Num: 14
Candidate Starts for DoubleChamp_57:
(Start: 14 @40730 has 8 MA's), (27, 40862), (31, 40892), (35, 40925),

Gene: DreamCatcher_65 Start: 41754, Stop: 41455, Start Num: 9
Candidate Starts for DreamCatcher_65:
(Start: 9 @41754 has 17 MA's), (Start: 10 @41751 has 25 MA's), (Start: 11 @41739 has 2 MA's),
(Start: 12 @41706 has 6 MA's), (17, 41688), (20, 41637), (22, 41622), (24, 41601), (26, 41571), (30,
41541), (38, 41466),

Gene: Espresso_59 Start: 41111, Stop: 40833, Start Num: 9
Candidate Starts for Espresso_59:

(Start: 9 @41111 has 17 MA's), (Start: 10 @41108 has 25 MA's), (Start: 11 @41096 has 2 MA's), (17, 41066), (20, 41015), (22, 41000), (24, 40979), (26, 40949), (30, 40919),

Gene: Forsytheast_63 Start: 40623, Stop: 40327, Start Num: 10
Candidate Starts for Forsytheast_63:
(Start: 9 @40626 has 17 MA's), (Start: 10 @40623 has 25 MA's), (Start: 11 @40611 has 2 MA's), (Start: 12 @40578 has 6 MA's), (17, 40560), (20, 40509), (22, 40494), (24, 40473), (26, 40443), (30, 40413), (38, 40338),

Gene: GMonster_59 Start: 40681, Stop: 40385, Start Num: 10
Candidate Starts for GMonster_59:
(Start: 9 @40684 has 17 MA's), (Start: 10 @40681 has 25 MA's), (Start: 11 @40669 has 2 MA's), (Start: 12 @40636 has 6 MA's), (17, 40618), (20, 40567), (22, 40552), (24, 40531), (26, 40501), (30, 40471),

Gene: Gengar_60 Start: 42478, Stop: 42726, Start Num: 14
Candidate Starts for Gengar_60:
(Start: 14 @42478 has 8 MA's), (21, 42541),

Gene: Gibbzilla_63 Start: 33193, Stop: 33492, Start Num: 11
Candidate Starts for Gibbzilla_63:
(Start: 11 @33193 has 2 MA's), (19, 33283), (25, 33364),

Gene: HanShotFirst_63 Start: 42830, Stop: 42531, Start Num: 9
Candidate Starts for HanShotFirst_63:
(Start: 9 @42830 has 17 MA's), (Start: 10 @42827 has 25 MA's), (Start: 11 @42815 has 2 MA's), (Start: 12 @42782 has 6 MA's), (17, 42764), (20, 42713), (22, 42698), (24, 42677), (26, 42647), (30, 42617),

Gene: HarryOW_60 Start: 40966, Stop: 40688, Start Num: 9
Candidate Starts for HarryOW_60:
(Start: 9 @40966 has 17 MA's), (Start: 10 @40963 has 25 MA's), (Start: 11 @40951 has 2 MA's), (17, 40921), (20, 40870), (22, 40855), (24, 40834), (26, 40804), (30, 40774),

Gene: HermioneGrange_64 Start: 42295, Stop: 41999, Start Num: 10
Candidate Starts for HermioneGrange_64:
(Start: 9 @42298 has 17 MA's), (Start: 10 @42295 has 25 MA's), (Start: 11 @42283 has 2 MA's), (Start: 12 @42250 has 6 MA's), (17, 42232), (20, 42181), (22, 42166), (24, 42145), (26, 42115), (30, 42085), (38, 42010),

Gene: IgnatiusPatJac_62 Start: 40958, Stop: 40662, Start Num: 10
Candidate Starts for IgnatiusPatJac_62:
(Start: 9 @40961 has 17 MA's), (Start: 10 @40958 has 25 MA's), (Start: 11 @40946 has 2 MA's), (Start: 12 @40913 has 6 MA's), (17, 40895), (20, 40844), (22, 40829), (24, 40808), (26, 40778), (30, 40748), (38, 40673),

Gene: InvictusManeo_58 Start: 40773, Stop: 41021, Start Num: 14
Candidate Starts for InvictusManeo_58:
(Start: 14 @40773 has 8 MA's), (27, 40905), (31, 40935), (35, 40968),

Gene: JF1_70 Start: 43533, Stop: 43847, Start Num: 12
Candidate Starts for JF1_70:
(Start: 12 @43533 has 6 MA's), (16, 43548), (18, 43578), (23, 43635),

Gene: JeanClaude_54 Start: 30349, Stop: 30648, Start Num: 11
Candidate Starts for JeanClaude_54:
(Start: 11 @30349 has 2 MA's), (19, 30439),

Gene: Keshu_70 Start: 44135, Stop: 44440, Start Num: 8
Candidate Starts for Keshu_70:
(Start: 7 @44129 has 2 MA's), (Start: 8 @44135 has 2 MA's), (Start: 10 @44156 has 25 MA's), (13, 44198), (18, 44231), (23, 44288), (29, 44348), (31, 44360),

Gene: Killigrew_61 Start: 41393, Stop: 41097, Start Num: 10
Candidate Starts for Killigrew_61:
(Start: 9 @41396 has 17 MA's), (Start: 10 @41393 has 25 MA's), (Start: 11 @41381 has 2 MA's), (Start: 12 @41348 has 6 MA's), (17, 41330), (20, 41279), (22, 41264), (24, 41243), (26, 41213), (30, 41183),

Gene: Kratio_58 Start: 40509, Stop: 40757, Start Num: 14
Candidate Starts for Kratio_58:
(Start: 14 @40509 has 8 MA's), (27, 40641), (31, 40671), (35, 40704),

Gene: Krueger_71 Start: 43668, Stop: 43991, Start Num: 7
Candidate Starts for Krueger_71:
(Start: 7 @43668 has 2 MA's), (15, 43752), (17, 43761), (23, 43842), (28, 43896), (31, 43911),

Gene: Kykar_63 Start: 41758, Stop: 41462, Start Num: 10
Candidate Starts for Kykar_63:
(Start: 9 @41761 has 17 MA's), (Start: 10 @41758 has 25 MA's), (Start: 11 @41746 has 2 MA's), (Start: 12 @41713 has 6 MA's), (17, 41695), (20, 41644), (22, 41629), (24, 41608), (26, 41578), (30, 41548), (38, 41473),

Gene: LilDirt_57 Start: 40531, Stop: 40779, Start Num: 14
Candidate Starts for LilDirt_57:
(Start: 14 @40531 has 8 MA's), (27, 40663), (31, 40693), (35, 40726),

Gene: MPlant7149_62 Start: 40186, Stop: 39887, Start Num: 9
Candidate Starts for MPlant7149_62:
(Start: 9 @40186 has 17 MA's), (Start: 10 @40183 has 25 MA's), (Start: 11 @40171 has 2 MA's), (Start: 12 @40138 has 6 MA's), (17, 40120), (20, 40069), (22, 40054), (24, 40033), (26, 40003), (30, 39973), (38, 39898),

Gene: McGuire_63 Start: 40458, Stop: 40162, Start Num: 10
Candidate Starts for McGuire_63:
(Start: 9 @40461 has 17 MA's), (Start: 10 @40458 has 25 MA's), (Start: 11 @40446 has 2 MA's), (Start: 12 @40413 has 6 MA's), (17, 40395), (20, 40344), (22, 40329), (24, 40308), (26, 40278), (30, 40248),

Gene: Miryou_64 Start: 45175, Stop: 45423, Start Num: 14
Candidate Starts for Miryou_64:
(Start: 14 @45175 has 8 MA's), (21, 45238),

Gene: Molly_63 Start: 41563, Stop: 41267, Start Num: 10
Candidate Starts for Molly_63:

(Start: 9 @41566 has 17 MA's), (Start: 10 @41563 has 25 MA's), (Start: 11 @41551 has 2 MA's), (Start: 12 @41518 has 6 MA's), (17, 41500), (20, 41449), (22, 41434), (24, 41413), (26, 41383), (30, 41353),

Gene: Moose_63 Start: 40623, Stop: 40327, Start Num: 10
Candidate Starts for Moose_63:
(Start: 9 @40626 has 17 MA's), (Start: 10 @40623 has 25 MA's), (Start: 11 @40611 has 2 MA's), (Start: 12 @40578 has 6 MA's), (17, 40560), (20, 40509), (22, 40494), (24, 40473), (26, 40443), (30, 40413), (38, 40338),

Gene: Museum_64 Start: 42785, Stop: 42486, Start Num: 9
Candidate Starts for Museum_64:
(Start: 9 @42785 has 17 MA's), (Start: 10 @42782 has 25 MA's), (Start: 11 @42770 has 2 MA's), (Start: 12 @42737 has 6 MA's), (17, 42719), (20, 42668), (22, 42653), (24, 42632), (26, 42602), (30, 42572), (38, 42497),

Gene: Nhonho_60 Start: 41685, Stop: 41386, Start Num: 9
Candidate Starts for Nhonho_60:
(3, 41763), (Start: 9 @41685 has 17 MA's), (Start: 10 @41682 has 25 MA's), (Start: 11 @41670 has 2 MA's), (Start: 12 @41637 has 6 MA's), (17, 41619), (20, 41568), (22, 41553), (24, 41532), (26, 41502), (30, 41472),

Gene: OkiRoe_61 Start: 42847, Stop: 43095, Start Num: 14
Candidate Starts for OkiRoe_61:
(Start: 14 @42847 has 8 MA's), (21, 42910),

Gene: OmniCritical_69 Start: 43407, Stop: 43721, Start Num: 12
Candidate Starts for OmniCritical_69:
(Start: 12 @43407 has 6 MA's), (16, 43422), (18, 43452), (23, 43509),

Gene: PacerPaul_61 Start: 41105, Stop: 40827, Start Num: 9
Candidate Starts for PacerPaul_61:
(Start: 9 @41105 has 17 MA's), (Start: 10 @41102 has 25 MA's), (Start: 11 @41090 has 2 MA's), (17, 41060), (20, 41009), (22, 40994), (24, 40973), (26, 40943), (30, 40913),

Gene: Paphu_62 Start: 41937, Stop: 41638, Start Num: 9
Candidate Starts for Paphu_62:
(Start: 9 @41937 has 17 MA's), (Start: 10 @41934 has 25 MA's), (Start: 11 @41922 has 2 MA's), (Start: 12 @41889 has 6 MA's), (17, 41871), (20, 41820), (22, 41805), (24, 41784), (26, 41754), (30, 41724), (38, 41649),

Gene: Parliament_64 Start: 43726, Stop: 43430, Start Num: 10
Candidate Starts for Parliament_64:
(Start: 9 @43729 has 17 MA's), (Start: 10 @43726 has 25 MA's), (Start: 11 @43714 has 2 MA's), (Start: 12 @43681 has 6 MA's), (17, 43663), (20, 43612), (22, 43597), (24, 43576), (26, 43546), (30, 43516), (38, 43441),

Gene: Petp2012_65 Start: 43269, Stop: 42970, Start Num: 9
Candidate Starts for Petp2012_65:
(Start: 9 @43269 has 17 MA's), (Start: 10 @43266 has 25 MA's), (Start: 11 @43254 has 2 MA's), (Start: 12 @43221 has 6 MA's), (17, 43203), (20, 43152), (22, 43137), (24, 43116), (26, 43086), (30, 43056), (38, 42981),

Gene: Pigu_56 Start: 30796, Stop: 31095, Start Num: 11
Candidate Starts for Pigu_56:
(Start: 11 @30796 has 2 MA's), (19, 30886),

Gene: ProMouse_61 Start: 41373, Stop: 41077, Start Num: 10
Candidate Starts for ProMouse_61:
(5, 41430), (Start: 10 @41373 has 25 MA's), (Start: 11 @41361 has 2 MA's), (Start: 12 @41328 has 6 MA's), (17, 41310), (22, 41244), (24, 41223), (26, 41193), (30, 41163), (38, 41088),

Gene: Rohr_64 Start: 42615, Stop: 42316, Start Num: 9
Candidate Starts for Rohr_64:
(Start: 9 @42615 has 17 MA's), (Start: 10 @42612 has 25 MA's), (Start: 11 @42600 has 2 MA's), (Start: 12 @42567 has 6 MA's), (17, 42549), (20, 42498), (22, 42483), (24, 42462), (26, 42432), (30, 42402), (38, 42327),

Gene: Rooter_59 Start: 32237, Stop: 32536, Start Num: 11
Candidate Starts for Rooter_59:
(Start: 11 @32237 has 2 MA's), (19, 32327),

Gene: Ruthiejr_71 Start: 43418, Stop: 43732, Start Num: 12
Candidate Starts for Ruthiejr_71:
(Start: 12 @43418 has 6 MA's), (16, 43433), (18, 43463), (23, 43520),

Gene: Sarge_51 Start: 30199, Stop: 30498, Start Num: 11
Candidate Starts for Sarge_51:
(Start: 11 @30199 has 2 MA's), (19, 30289),

Gene: Seabiscuit_65 Start: 40723, Stop: 40424, Start Num: 9
Candidate Starts for Seabiscuit_65:
(Start: 9 @40723 has 17 MA's), (Start: 10 @40720 has 25 MA's), (Start: 11 @40708 has 2 MA's), (Start: 12 @40675 has 6 MA's), (17, 40657), (20, 40606), (22, 40591), (24, 40570), (26, 40540), (30, 40510),

Gene: Seanderson_64 Start: 43120, Stop: 42836, Start Num: 8
Candidate Starts for Seanderson_64:
(Start: 8 @43120 has 2 MA's), (Start: 10 @43102 has 25 MA's), (Start: 11 @43090 has 2 MA's), (15, 43075), (17, 43069), (20, 43018), (22, 43003), (24, 42982), (26, 42952), (30, 42922), (36, 42877), (38, 42847),

Gene: Shoya_56 Start: 31813, Stop: 32112, Start Num: 11
Candidate Starts for Shoya_56:
(Start: 11 @31813 has 2 MA's), (19, 31903),

Gene: Sibs6_64 Start: 39832, Stop: 39533, Start Num: 9
Candidate Starts for Sibs6_64:
(Start: 9 @39832 has 17 MA's), (Start: 10 @39829 has 25 MA's), (Start: 11 @39817 has 2 MA's), (Start: 12 @39784 has 6 MA's), (17, 39766), (20, 39715), (22, 39700), (24, 39679), (26, 39649), (30, 39619),

Gene: SkiPole_70 Start: 42720, Stop: 42421, Start Num: 9
Candidate Starts for SkiPole_70:
(Start: 9 @42720 has 17 MA's), (Start: 10 @42717 has 25 MA's), (Start: 11 @42705 has 2 MA's), (Start: 12 @42672 has 6 MA's), (17, 42654), (22, 42588), (26, 42537), (30, 42507), (38, 42432),

Gene: SwissCheese_65 Start: 41123, Stop: 40827, Start Num: 10
Candidate Starts for SwissCheese_65:
(Start: 9 @41126 has 17 MA's), (Start: 10 @41123 has 25 MA's), (Start: 11 @41111 has 2 MA's), (Start: 12 @41078 has 6 MA's), (17, 41060), (20, 41009), (22, 40994), (24, 40973), (26, 40943), (30, 40913), (38, 40838),

Gene: Switzer_63 Start: 42783, Stop: 42412, Start Num: 1
Candidate Starts for Switzer_63:
(Start: 1 @42783 has 1 MA's), (2, 42780), (4, 42735), (6, 42717), (Start: 9 @42681 has 17 MA's), (Start: 10 @42678 has 25 MA's), (Start: 11 @42666 has 2 MA's), (17, 42645), (20, 42594), (22, 42579), (24, 42558), (26, 42528), (30, 42498), (38, 42423),

Gene: Tasp14_66 Start: 43218, Stop: 42919, Start Num: 9
Candidate Starts for Tasp14_66:
(Start: 9 @43218 has 17 MA's), (Start: 10 @43215 has 25 MA's), (Start: 11 @43203 has 2 MA's), (Start: 12 @43170 has 6 MA's), (17, 43152), (20, 43101), (22, 43086), (24, 43065), (26, 43035), (30, 43005), (38, 42930),

Gene: Topgun_60 Start: 40325, Stop: 40029, Start Num: 10
Candidate Starts for Topgun_60:
(Start: 9 @40328 has 17 MA's), (Start: 10 @40325 has 25 MA's), (Start: 11 @40313 has 2 MA's), (Start: 12 @40280 has 6 MA's), (17, 40262), (22, 40196), (24, 40175), (26, 40145), (30, 40115),

Gene: U2_60 Start: 41888, Stop: 41592, Start Num: 10
Candidate Starts for U2_60:
(Start: 9 @41891 has 17 MA's), (Start: 10 @41888 has 25 MA's), (Start: 11 @41876 has 2 MA's), (Start: 12 @41843 has 6 MA's), (17, 41825), (20, 41774), (22, 41759), (24, 41738), (26, 41708), (30, 41678), (38, 41603),

Gene: ViviJ_59 Start: 40530, Stop: 40778, Start Num: 14
Candidate Starts for ViviJ_59:
(Start: 14 @40530 has 8 MA's), (27, 40662), (31, 40692), (35, 40725),

Gene: Watermelon_62 Start: 40661, Stop: 40362, Start Num: 9
Candidate Starts for Watermelon_62:
(Start: 9 @40661 has 17 MA's), (Start: 10 @40658 has 25 MA's), (Start: 11 @40646 has 2 MA's), (Start: 12 @40613 has 6 MA's), (17, 40595), (20, 40544), (22, 40529), (24, 40508), (26, 40478), (30, 40448),

Gene: Wilkins_61 Start: 40255, Stop: 39959, Start Num: 10
Candidate Starts for Wilkins_61:
(Start: 9 @40258 has 17 MA's), (Start: 10 @40255 has 25 MA's), (Start: 11 @40243 has 2 MA's), (Start: 12 @40210 has 6 MA's), (17, 40192), (22, 40126), (24, 40105), (26, 40075), (30, 40045),

Gene: Y10_67 Start: 43533, Stop: 43847, Start Num: 12
Candidate Starts for Y10_67:
(Start: 12 @43533 has 6 MA's), (16, 43548), (18, 43578), (23, 43635),

Gene: Y2_67 Start: 43533, Stop: 43847, Start Num: 12
Candidate Starts for Y2_67:
(Start: 12 @43533 has 6 MA's), (16, 43548), (18, 43578), (23, 43635),

Gene: Zeeculate_59 Start: 41408, Stop: 41112, Start Num: 10
Candidate Starts for Zeeculate_59:
(5, 41465), (Start: 10 @41408 has 25 MA's), (Start: 11 @41396 has 2 MA's), (Start: 12 @41363 has 6 MA's), (17, 41345), (20, 41294), (22, 41279), (24, 41258), (26, 41228), (30, 41198),

Gene: Zephyr_63 Start: 40825, Stop: 40529, Start Num: 10
Candidate Starts for Zephyr_63:
(Start: 9 @40828 has 17 MA's), (Start: 10 @40825 has 25 MA's), (Start: 11 @40813 has 2 MA's), (Start: 12 @40780 has 6 MA's), (17, 40762), (20, 40711), (22, 40696), (24, 40675), (26, 40645), (30, 40615),