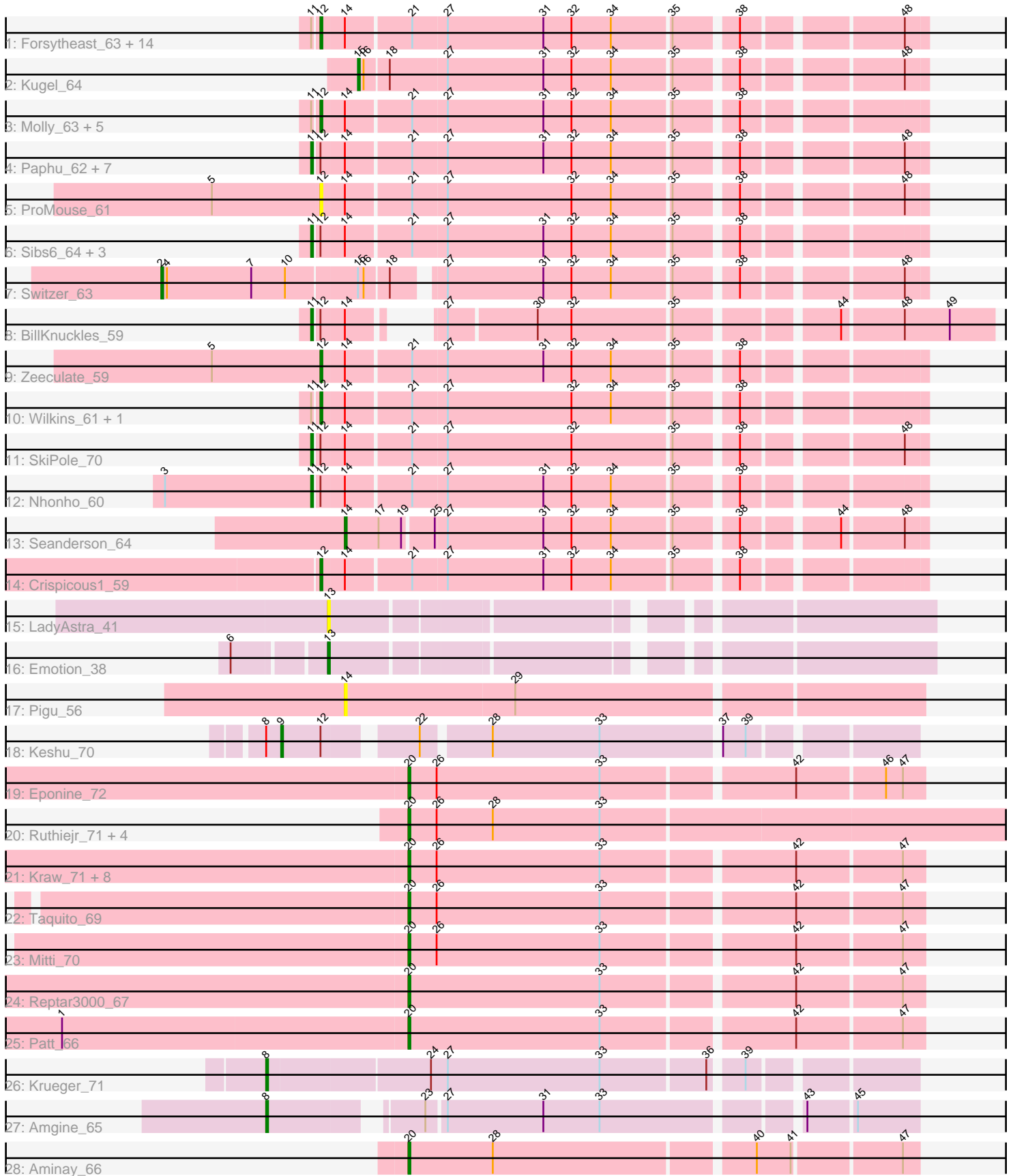


Pham 202912



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 202912 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202912 has 70 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Forsytheast_63, Kykar_63, HermioneGrange_64, Moose_63, Bones_61, Cueyllyss_62, U2_60, BigMau_64, Parliament_64, Bob3_63, Bruns_63, Adahisdi_62, SwissCheese_65, Arlo_60, IgnatiusPatJac_62
- Track 2 : Kugel_64
- Track 3 : Molly_63, GMonster_57, Killigrew_61, Briton15_66, McGuire_63, Zephyr_63
- Track 4 : Paphu_62, BluSpix_60, Rohr_64, Petp2012_65, Museum_64, DreamCatcher_65, Tasp14_66, MPlant7149_62
- Track 5 : ProMouse_61
- Track 6 : Sibs6_64, Seabiscuit_65, Watermelon_62, HanShotFirst_63
- Track 7 : Switzer_63
- Track 8 : BillKnuckles_59
- Track 9 : Zeeculate_59
- Track 10 : Wilkins_61, Topgun_60
- Track 11 : SkiPole_70
- Track 12 : Nhonho_60
- Track 13 : Seanderson_64
- Track 14 : Crispicous1_59
- Track 15 : LadyAstra_41
- Track 16 : Emotion_38
- Track 17 : Pigu_56
- Track 18 : Keshu_70
- Track 19 : Eponine_72
- Track 20 : Ruthiejr_71, OmniCritical_69, Y10_67, Y2_67, JF1_70
- Track 21 : Kraw_71, Cheetobro_70, Chancellor_70, Juliette_72, Malthus_71, Fionnbharth_70, SamScheppers_68, Slarp_70, Wintermute_70
- Track 22 : Taquito_69
- Track 23 : Mitti_70
- Track 24 : Reptar3000_67
- Track 25 : Patt_66
- Track 26 : Krueger_71
- Track 27 : Amgine_65
- Track 28 : 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 12, it was called in 24 of the 65 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, Cueyllyss_62, Forsytheast_63, GMonster_57, 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:

- BillKnuckles_59, BluSpix_60, DreamCatcher_65, HanShotFirst_63, Keshu_70, MPlant7149_62, Museum_64, Nhonho_60, Paphu_62, Petp2012_65, Rohr_64, Seabiscuit_65, Sibs6_64, SkiPole_70, Tasp14_66, Watermelon_62,

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

- Amgine_65, Aminay_66, Chancellor_70, Cheetobro_70, Emotion_38, Eponine_72, Fionnbharth_70, JF1_70, Juliette_72, Kraw_71, Krueger_71, Kugel_64, LadyAstra_41, Malthus_71, Mitti_70, OmniCritical_69, Patt_66, Pigu_56, Reptar3000_67, Ruthiejr_71, SamScheppers_68, Seanderson_64, Slarp_70, Switzer_63, Taquito_69, Wintermute_70, Y10_67, Y2_67,

Summary by start number:

Start 2:

- Found in 1 of 70 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Switzer_63 (A1),

Start 8:

- Found in 3 of 70 (4.3%) of genes in pham
- Manual Annotations of this start: 2 of 65
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Amgine_65 (K6), Krueger_71 (K6),

Start 9:

- Found in 1 of 70 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Keshu_70 (K3),

Start 11:

- Found in 38 of 70 (54.3%) of genes in pham
- Manual Annotations of this start: 15 of 65
- Called 39.5% of time when present
- Phage (with cluster) where this start called: BillKnuckles_59 (A1), BluSpix_60 (A1), DreamCatcher_65 (A1), HanShotFirst_63 (A1), MPlant7149_62 (A1), Museum_64 (A1), Nhonho_60 (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 12:

- Found in 42 of 70 (60.0%) of genes in pham
- Manual Annotations of this start: 24 of 65
- Called 61.9% 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), Crispicious1_59 (A1), Cueylyss_62 (A1), Forsytheast_63 (A1), GMonster_57 (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 13:

- Found in 2 of 70 (2.9%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Emotion_38 (AZ4), LadyAstra_41 (AZ4),

Start 14:

- Found in 43 of 70 (61.4%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 4.7% of time when present
- Phage (with cluster) where this start called: Pigu_56 (FB), Seanderson_64 (A1),

Start 15:

- Found in 2 of 70 (2.9%) of genes in pham
- Manual Annotations of this start: 1 of 65
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Kugel_64 (A1),

Start 20:

- Found in 20 of 70 (28.6%) of genes in pham
- Manual Annotations of this start: 19 of 65
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aminay_66 (K7), Chancellor_70 (K4), Cheetobro_70 (K4), Eponine_72 (K4), Fionnbharth_70 (K4), JF1_70 (K4), Juliette_72 (K4), Kraw_71 (K4), Malthus_71 (K4), Mitti_70 (K4), OmniCritical_69 (K4), Patt_66 (K4), Reptar3000_67 (K4), Ruthiejr_71 (K4), SamScheppers_68 (K4), Slarp_70 (K4), Taquito_69 (K4), Wintermute_70 (K4), Y10_67 (K4), Y2_67 (K4),

Summary by clusters:

There are 7 clusters represented in this pham: K3, A1, FB, K7, K6, K4, AZ4,

Info for manual annotations of cluster A1:

- Start number 2 was manually annotated 1 time for cluster A1.
- Start number 11 was manually annotated 15 times for cluster A1.
- Start number 12 was manually annotated 24 times for cluster A1.
- Start number 14 was manually annotated 1 time for cluster A1.
- Start number 15 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster AZ4:

- Start number 13 was manually annotated 1 time for cluster AZ4.

Info for manual annotations of cluster K3:

- Start number 9 was manually annotated 1 time for cluster K3.

Info for manual annotations of cluster K4:

- Start number 20 was manually annotated 18 times for cluster K4.

Info for manual annotations of cluster K6:

- Start number 8 was manually annotated 2 times for cluster K6.

Info for manual annotations of cluster K7:

- Start number 20 was manually annotated 1 time for cluster K7.

Gene Information:

Gene: Adahisdi_62 Start: 42536, Stop: 42240, Start Num: 12

Candidate Starts for Adahisdi_62:

(Start: 11 @42539 has 15 MA's), (Start: 12 @42536 has 24 MA's), (Start: 14 @42524 has 1 MA's), (21, 42491), (27, 42473), (31, 42422), (32, 42407), (34, 42386), (35, 42356), (38, 42326), (48, 42251),

Gene: Amgine_65 Start: 44496, Stop: 44807, Start Num: 8

Candidate Starts for Amgine_65:

(Start: 8 @44496 has 2 MA's), (23, 44565), (27, 44574), (31, 44625), (33, 44655), (43, 44751), (45, 44775),

Gene: Aminay_66 Start: 43144, Stop: 43401, Start Num: 20

Candidate Starts for Aminay_66:

(Start: 20 @43144 has 19 MA's), (28, 43189), (40, 43321), (41, 43339), (47, 43393),

Gene: Arlo_60 Start: 40881, Stop: 40585, Start Num: 12

Candidate Starts for Arlo_60:

(Start: 11 @40884 has 15 MA's), (Start: 12 @40881 has 24 MA's), (Start: 14 @40869 has 1 MA's), (21, 40836), (27, 40818), (31, 40767), (32, 40752), (34, 40731), (35, 40701), (38, 40671), (48, 40596),

Gene: BigMau_64 Start: 41801, Stop: 41505, Start Num: 12

Candidate Starts for BigMau_64:

(Start: 11 @41804 has 15 MA's), (Start: 12 @41801 has 24 MA's), (Start: 14 @41789 has 1 MA's), (21, 41756), (27, 41738), (31, 41687), (32, 41672), (34, 41651), (35, 41621), (38, 41591), (48, 41516),

Gene: BillKnuckles_59 Start: 42435, Stop: 42130, Start Num: 11

Candidate Starts for BillKnuckles_59:

(Start: 11 @42435 has 15 MA's), (Start: 12 @42432 has 24 MA's), (Start: 14 @42420 has 1 MA's), (27, 42396), (30, 42351), (32, 42333), (35, 42282), (44, 42207), (48, 42177), (49, 42153),

Gene: BluSpix_60 Start: 37016, Stop: 36717, Start Num: 11

Candidate Starts for BluSpix_60:

(Start: 11 @37016 has 15 MA's), (Start: 12 @37013 has 24 MA's), (Start: 14 @37001 has 1 MA's), (21, 36968), (27, 36950), (31, 36899), (32, 36884), (34, 36863), (35, 36833), (38, 36803), (48, 36728),

Gene: Bob3_63 Start: 41074, Stop: 40778, Start Num: 12

Candidate Starts for Bob3_63:

(Start: 11 @41077 has 15 MA's), (Start: 12 @41074 has 24 MA's), (Start: 14 @41062 has 1 MA's), (21, 41029), (27, 41011), (31, 40960), (32, 40945), (34, 40924), (35, 40894), (38, 40864), (48, 40789),

Gene: Bones_61 Start: 42258, Stop: 41962, Start Num: 12

Candidate Starts for Bones_61:

(Start: 11 @42261 has 15 MA's), (Start: 12 @42258 has 24 MA's), (Start: 14 @42246 has 1 MA's), (21, 42213), (27, 42195), (31, 42144), (32, 42129), (34, 42108), (35, 42078), (38, 42048), (48, 41973),

Gene: Briton15_66 Start: 42878, Stop: 42582, Start Num: 12

Candidate Starts for Briton15_66:

(Start: 11 @42881 has 15 MA's), (Start: 12 @42878 has 24 MA's), (Start: 14 @42866 has 1 MA's), (21, 42833), (27, 42815), (31, 42764), (32, 42749), (34, 42728), (35, 42698), (38, 42668),

Gene: Bruns_63 Start: 40455, Stop: 40159, Start Num: 12

Candidate Starts for Bruns_63:

(Start: 11 @40458 has 15 MA's), (Start: 12 @40455 has 24 MA's), (Start: 14 @40443 has 1 MA's), (21, 40410), (27, 40392), (31, 40341), (32, 40326), (34, 40305), (35, 40275), (38, 40245), (48, 40170),

Gene: Chancellor_70 Start: 43377, Stop: 43640, Start Num: 20

Candidate Starts for Chancellor_70:

(Start: 20 @43377 has 19 MA's), (26, 43392), (33, 43479), (42, 43575), (47, 43629),

Gene: Cheetobro_70 Start: 43374, Stop: 43637, Start Num: 20

Candidate Starts for Cheetobro_70:

(Start: 20 @43374 has 19 MA's), (26, 43389), (33, 43476), (42, 43572), (47, 43626),

Gene: Crispicous1_59 Start: 39995, Stop: 39699, Start Num: 12

Candidate Starts for Crispicous1_59:

(Start: 12 @39995 has 24 MA's), (Start: 14 @39983 has 1 MA's), (21, 39950), (27, 39932), (31, 39881), (32, 39866), (34, 39845), (35, 39815), (38, 39785),

Gene: Cueyllyss_62 Start: 42458, Stop: 42162, Start Num: 12

Candidate Starts for Cueyllyss_62:

(Start: 11 @42461 has 15 MA's), (Start: 12 @42458 has 24 MA's), (Start: 14 @42446 has 1 MA's), (21, 42413), (27, 42395), (31, 42344), (32, 42329), (34, 42308), (35, 42278), (38, 42248), (48, 42173),

Gene: DreamCatcher_65 Start: 41754, Stop: 41455, Start Num: 11

Candidate Starts for DreamCatcher_65:

(Start: 11 @41754 has 15 MA's), (Start: 12 @41751 has 24 MA's), (Start: 14 @41739 has 1 MA's), (21, 41706), (27, 41688), (31, 41637), (32, 41622), (34, 41601), (35, 41571), (38, 41541), (48, 41466),

Gene: Emotion_38 Start: 26311, Stop: 26598, Start Num: 13

Candidate Starts for Emotion_38:

(6, 26266), (Start: 13 @26311 has 1 MA's),

Gene: Eponine_72 Start: 44220, Stop: 44483, Start Num: 20

Candidate Starts for Eponine_72:

(Start: 20 @44220 has 19 MA's), (26, 44235), (33, 44322), (42, 44418), (46, 44463), (47, 44472),

Gene: Fionnbharth_70 Start: 43618, Stop: 43881, Start Num: 20

Candidate Starts for Fionnbharth_70:

(Start: 20 @43618 has 19 MA's), (26, 43633), (33, 43720), (42, 43816), (47, 43870),

Gene: Forsytheast_63 Start: 40623, Stop: 40327, Start Num: 12

Candidate Starts for Forsytheast_63:

(Start: 11 @40626 has 15 MA's), (Start: 12 @40623 has 24 MA's), (Start: 14 @40611 has 1 MA's), (21, 40578), (27, 40560), (31, 40509), (32, 40494), (34, 40473), (35, 40443), (38, 40413), (48, 40338),

Gene: GMonster_57 Start: 40681, Stop: 40385, Start Num: 12

Candidate Starts for GMonster_57:

(Start: 11 @40684 has 15 MA's), (Start: 12 @40681 has 24 MA's), (Start: 14 @40669 has 1 MA's), (21, 40636), (27, 40618), (31, 40567), (32, 40552), (34, 40531), (35, 40501), (38, 40471),

Gene: HanShotFirst_63 Start: 42830, Stop: 42531, Start Num: 11

Candidate Starts for HanShotFirst_63:

(Start: 11 @42830 has 15 MA's), (Start: 12 @42827 has 24 MA's), (Start: 14 @42815 has 1 MA's), (21, 42782), (27, 42764), (31, 42713), (32, 42698), (34, 42677), (35, 42647), (38, 42617),

Gene: HermioneGrange_64 Start: 42295, Stop: 41999, Start Num: 12

Candidate Starts for HermioneGrange_64:

(Start: 11 @42298 has 15 MA's), (Start: 12 @42295 has 24 MA's), (Start: 14 @42283 has 1 MA's), (21, 42250), (27, 42232), (31, 42181), (32, 42166), (34, 42145), (35, 42115), (38, 42085), (48, 42010),

Gene: IgnatiusPatJac_62 Start: 40958, Stop: 40662, Start Num: 12

Candidate Starts for IgnatiusPatJac_62:

(Start: 11 @40961 has 15 MA's), (Start: 12 @40958 has 24 MA's), (Start: 14 @40946 has 1 MA's), (21, 40913), (27, 40895), (31, 40844), (32, 40829), (34, 40808), (35, 40778), (38, 40748), (48, 40673),

Gene: JF1_70 Start: 43533, Stop: 43847, Start Num: 20

Candidate Starts for JF1_70:

(Start: 20 @43533 has 19 MA's), (26, 43548), (28, 43578), (33, 43635),

Gene: Juliette_72 Start: 43682, Stop: 43945, Start Num: 20

Candidate Starts for Juliette_72:

(Start: 20 @43682 has 19 MA's), (26, 43697), (33, 43784), (42, 43880), (47, 43934),

Gene: Keshu_70 Start: 44135, Stop: 44440, Start Num: 9

Candidate Starts for Keshu_70:

(Start: 8 @44129 has 2 MA's), (Start: 9 @44135 has 1 MA's), (Start: 12 @44156 has 24 MA's), (22, 44198), (28, 44231), (33, 44288), (37, 44348), (39, 44360),

Gene: Killigrew_61 Start: 41393, Stop: 41097, Start Num: 12

Candidate Starts for Killigrew_61:

(Start: 11 @41396 has 15 MA's), (Start: 12 @41393 has 24 MA's), (Start: 14 @41381 has 1 MA's), (21, 41348), (27, 41330), (31, 41279), (32, 41264), (34, 41243), (35, 41213), (38, 41183),

Gene: Kraw_71 Start: 43370, Stop: 43633, Start Num: 20

Candidate Starts for Kraw_71:

(Start: 20 @43370 has 19 MA's), (26, 43385), (33, 43472), (42, 43568), (47, 43622),

Gene: Krueger_71 Start: 43668, Stop: 43991, Start Num: 8

Candidate Starts for Krueger_71:

(Start: 8 @43668 has 2 MA's), (24, 43752), (27, 43761), (33, 43842), (36, 43896), (39, 43911),

Gene: Kugel_64 Start: 42232, Stop: 41954, Start Num: 15

Candidate Starts for Kugel_64:

(Start: 15 @42232 has 1 MA's), (16, 42229), (18, 42217), (27, 42187), (31, 42136), (32, 42121), (34, 42100), (35, 42070), (38, 42040), (48, 41965),

Gene: Kykar_63 Start: 41758, Stop: 41462, Start Num: 12

Candidate Starts for Kykar_63:

(Start: 11 @41761 has 15 MA's), (Start: 12 @41758 has 24 MA's), (Start: 14 @41746 has 1 MA's), (21, 41713), (27, 41695), (31, 41644), (32, 41629), (34, 41608), (35, 41578), (38, 41548), (48, 41473),

Gene: LadyAstra_41 Start: 26498, Stop: 26785, Start Num: 13

Candidate Starts for LadyAstra_41:

(Start: 13 @26498 has 1 MA's),

Gene: MPlant7149_62 Start: 40186, Stop: 39887, Start Num: 11

Candidate Starts for MPlant7149_62:

(Start: 11 @40186 has 15 MA's), (Start: 12 @40183 has 24 MA's), (Start: 14 @40171 has 1 MA's), (21, 40138), (27, 40120), (31, 40069), (32, 40054), (34, 40033), (35, 40003), (38, 39973), (48, 39898),

Gene: Malthus_71 Start: 43370, Stop: 43633, Start Num: 20

Candidate Starts for Malthus_71:

(Start: 20 @43370 has 19 MA's), (26, 43385), (33, 43472), (42, 43568), (47, 43622),

Gene: McGuire_63 Start: 40458, Stop: 40162, Start Num: 12

Candidate Starts for McGuire_63:

(Start: 11 @40461 has 15 MA's), (Start: 12 @40458 has 24 MA's), (Start: 14 @40446 has 1 MA's), (21, 40413), (27, 40395), (31, 40344), (32, 40329), (34, 40308), (35, 40278), (38, 40248),

Gene: Mitti_70 Start: 43525, Stop: 43788, Start Num: 20

Candidate Starts for Mitti_70:

(Start: 20 @43525 has 19 MA's), (26, 43540), (33, 43627), (42, 43723), (47, 43777),

Gene: Molly_63 Start: 41563, Stop: 41267, Start Num: 12

Candidate Starts for Molly_63:

(Start: 11 @41566 has 15 MA's), (Start: 12 @41563 has 24 MA's), (Start: 14 @41551 has 1 MA's), (21, 41518), (27, 41500), (31, 41449), (32, 41434), (34, 41413), (35, 41383), (38, 41353),

Gene: Moose_63 Start: 40623, Stop: 40327, Start Num: 12

Candidate Starts for Moose_63:

(Start: 11 @40626 has 15 MA's), (Start: 12 @40623 has 24 MA's), (Start: 14 @40611 has 1 MA's), (21, 40578), (27, 40560), (31, 40509), (32, 40494), (34, 40473), (35, 40443), (38, 40413), (48, 40338),

Gene: Museum_64 Start: 42785, Stop: 42486, Start Num: 11

Candidate Starts for Museum_64:

(Start: 11 @42785 has 15 MA's), (Start: 12 @42782 has 24 MA's), (Start: 14 @42770 has 1 MA's), (21, 42737), (27, 42719), (31, 42668), (32, 42653), (34, 42632), (35, 42602), (38, 42572), (48, 42497),

Gene: Nhonho_60 Start: 41685, Stop: 41386, Start Num: 11

Candidate Starts for Nhonho_60:

(3, 41763), (Start: 11 @41685 has 15 MA's), (Start: 12 @41682 has 24 MA's), (Start: 14 @41670 has 1 MA's), (21, 41637), (27, 41619), (31, 41568), (32, 41553), (34, 41532), (35, 41502), (38, 41472),

Gene: OmniCritical_69 Start: 43407, Stop: 43721, Start Num: 20

Candidate Starts for OmniCritical_69:

(Start: 20 @43407 has 19 MA's), (26, 43422), (28, 43452), (33, 43509),

Gene: Paphu_62 Start: 41937, Stop: 41638, Start Num: 11

Candidate Starts for Paphu_62:

(Start: 11 @41937 has 15 MA's), (Start: 12 @41934 has 24 MA's), (Start: 14 @41922 has 1 MA's), (21, 41889), (27, 41871), (31, 41820), (32, 41805), (34, 41784), (35, 41754), (38, 41724), (48, 41649),

Gene: Parliament_64 Start: 43726, Stop: 43430, Start Num: 12

Candidate Starts for Parliament_64:

(Start: 11 @43729 has 15 MA's), (Start: 12 @43726 has 24 MA's), (Start: 14 @43714 has 1 MA's), (21, 43681), (27, 43663), (31, 43612), (32, 43597), (34, 43576), (35, 43546), (38, 43516), (48, 43441),

Gene: Patt_66 Start: 42008, Stop: 42271, Start Num: 20

Candidate Starts for Patt_66:

(1, 41825), (Start: 20 @42008 has 19 MA's), (33, 42110), (42, 42206), (47, 42260),

Gene: Petp2012_65 Start: 43269, Stop: 42970, Start Num: 11

Candidate Starts for Petp2012_65:

(Start: 11 @43269 has 15 MA's), (Start: 12 @43266 has 24 MA's), (Start: 14 @43254 has 1 MA's), (21, 43221), (27, 43203), (31, 43152), (32, 43137), (34, 43116), (35, 43086), (38, 43056), (48, 42981),

Gene: Pigu_56 Start: 30796, Stop: 31095, Start Num: 14

Candidate Starts for Pigu_56:

(Start: 14 @30796 has 1 MA's), (29, 30886),

Gene: ProMouse_61 Start: 41373, Stop: 41077, Start Num: 12

Candidate Starts for ProMouse_61:

(5, 41430), (Start: 12 @41373 has 24 MA's), (Start: 14 @41361 has 1 MA's), (21, 41328), (27, 41310), (32, 41244), (34, 41223), (35, 41193), (38, 41163), (48, 41088),

Gene: Reptar3000_67 Start: 41997, Stop: 42260, Start Num: 20

Candidate Starts for Reptar3000_67:

(Start: 20 @41997 has 19 MA's), (33, 42099), (42, 42195), (47, 42249),

Gene: Rohr_64 Start: 42615, Stop: 42316, Start Num: 11

Candidate Starts for Rohr_64:

(Start: 11 @42615 has 15 MA's), (Start: 12 @42612 has 24 MA's), (Start: 14 @42600 has 1 MA's), (21, 42567), (27, 42549), (31, 42498), (32, 42483), (34, 42462), (35, 42432), (38, 42402), (48, 42327),

Gene: Ruthiejr_71 Start: 43418, Stop: 43732, Start Num: 20

Candidate Starts for Ruthiejr_71:

(Start: 20 @43418 has 19 MA's), (26, 43433), (28, 43463), (33, 43520),

Gene: SamScheppers_68 Start: 43849, Stop: 44112, Start Num: 20

Candidate Starts for SamScheppers_68:

(Start: 20 @43849 has 19 MA's), (26, 43864), (33, 43951), (42, 44047), (47, 44101),

Gene: Seabiscuit_65 Start: 40723, Stop: 40424, Start Num: 11

Candidate Starts for Seabiscuit_65:

(Start: 11 @40723 has 15 MA's), (Start: 12 @40720 has 24 MA's), (Start: 14 @40708 has 1 MA's), (21, 40675), (27, 40657), (31, 40606), (32, 40591), (34, 40570), (35, 40540), (38, 40510),

Gene: Seanderson_64 Start: 43120, Stop: 42836, Start Num: 14

Candidate Starts for Seanderson_64:

(Start: 14 @43120 has 1 MA's), (17, 43102), (19, 43090), (25, 43075), (27, 43069), (31, 43018), (32, 43003), (34, 42982), (35, 42952), (38, 42922), (44, 42877), (48, 42847),

Gene: Sibs6_64 Start: 39832, Stop: 39533, Start Num: 11

Candidate Starts for Sibs6_64:

(Start: 11 @39832 has 15 MA's), (Start: 12 @39829 has 24 MA's), (Start: 14 @39817 has 1 MA's), (21, 39784), (27, 39766), (31, 39715), (32, 39700), (34, 39679), (35, 39649), (38, 39619),

Gene: SkiPole_70 Start: 42720, Stop: 42421, Start Num: 11

Candidate Starts for SkiPole_70:

(Start: 11 @42720 has 15 MA's), (Start: 12 @42717 has 24 MA's), (Start: 14 @42705 has 1 MA's), (21, 42672), (27, 42654), (32, 42588), (35, 42537), (38, 42507), (48, 42432),

Gene: Slarp_70 Start: 43377, Stop: 43640, Start Num: 20

Candidate Starts for Slarp_70:

(Start: 20 @43377 has 19 MA's), (26, 43392), (33, 43479), (42, 43575), (47, 43629),

Gene: SwissCheese_65 Start: 41123, Stop: 40827, Start Num: 12

Candidate Starts for SwissCheese_65:

(Start: 11 @41126 has 15 MA's), (Start: 12 @41123 has 24 MA's), (Start: 14 @41111 has 1 MA's), (21, 41078), (27, 41060), (31, 41009), (32, 40994), (34, 40973), (35, 40943), (38, 40913), (48, 40838),

Gene: Switzer_63 Start: 42783, Stop: 42412, Start Num: 2

Candidate Starts for Switzer_63:

(Start: 2 @42783 has 1 MA's), (4, 42780), (7, 42735), (10, 42717), (Start: 15 @42681 has 1 MA's), (16, 42678), (18, 42666), (27, 42645), (31, 42594), (32, 42579), (34, 42558), (35, 42528), (38, 42498), (48, 42423),

Gene: Taquito_69 Start: 43582, Stop: 43845, Start Num: 20

Candidate Starts for Taquito_69:

(Start: 20 @43582 has 19 MA's), (26, 43597), (33, 43684), (42, 43780), (47, 43834),

Gene: Tasp14_66 Start: 43218, Stop: 42919, Start Num: 11

Candidate Starts for Tasp14_66:

(Start: 11 @43218 has 15 MA's), (Start: 12 @43215 has 24 MA's), (Start: 14 @43203 has 1 MA's), (21, 43170), (27, 43152), (31, 43101), (32, 43086), (34, 43065), (35, 43035), (38, 43005), (48, 42930),

Gene: Topgun_60 Start: 40325, Stop: 40029, Start Num: 12

Candidate Starts for Topgun_60:

(Start: 11 @40328 has 15 MA's), (Start: 12 @40325 has 24 MA's), (Start: 14 @40313 has 1 MA's), (21, 40280), (27, 40262), (32, 40196), (34, 40175), (35, 40145), (38, 40115),

Gene: U2_60 Start: 41888, Stop: 41592, Start Num: 12

Candidate Starts for U2_60:

(Start: 11 @41891 has 15 MA's), (Start: 12 @41888 has 24 MA's), (Start: 14 @41876 has 1 MA's), (21, 41843), (27, 41825), (31, 41774), (32, 41759), (34, 41738), (35, 41708), (38, 41678), (48, 41603),

Gene: Watermelon_62 Start: 40661, Stop: 40362, Start Num: 11

Candidate Starts for Watermelon_62:

(Start: 11 @40661 has 15 MA's), (Start: 12 @40658 has 24 MA's), (Start: 14 @40646 has 1 MA's), (21, 40613), (27, 40595), (31, 40544), (32, 40529), (34, 40508), (35, 40478), (38, 40448),

Gene: Wilkins_61 Start: 40255, Stop: 39959, Start Num: 12

Candidate Starts for Wilkins_61:

(Start: 11 @40258 has 15 MA's), (Start: 12 @40255 has 24 MA's), (Start: 14 @40243 has 1 MA's), (21, 40210), (27, 40192), (32, 40126), (34, 40105), (35, 40075), (38, 40045),

Gene: Wintermute_70 Start: 43607, Stop: 43870, Start Num: 20

Candidate Starts for Wintermute_70:

(Start: 20 @43607 has 19 MA's), (26, 43622), (33, 43709), (42, 43805), (47, 43859),

Gene: Y10_67 Start: 43533, Stop: 43847, Start Num: 20

Candidate Starts for Y10_67:

(Start: 20 @43533 has 19 MA's), (26, 43548), (28, 43578), (33, 43635),

Gene: Y2_67 Start: 43533, Stop: 43847, Start Num: 20

Candidate Starts for Y2_67:

(Start: 20 @43533 has 19 MA's), (26, 43548), (28, 43578), (33, 43635),

Gene: Zeeculate_59 Start: 41408, Stop: 41112, Start Num: 12

Candidate Starts for Zeeculate_59:

(5, 41465), (Start: 12 @41408 has 24 MA's), (Start: 14 @41396 has 1 MA's), (21, 41363), (27, 41345), (31, 41294), (32, 41279), (34, 41258), (35, 41228), (38, 41198),

Gene: Zephyr_63 Start: 40825, Stop: 40529, Start Num: 12

Candidate Starts for Zephyr_63:

(Start: 11 @40828 has 15 MA's), (Start: 12 @40825 has 24 MA's), (Start: 14 @40813 has 1 MA's), (21, 40780), (27, 40762), (31, 40711), (32, 40696), (34, 40675), (35, 40645), (38, 40615),