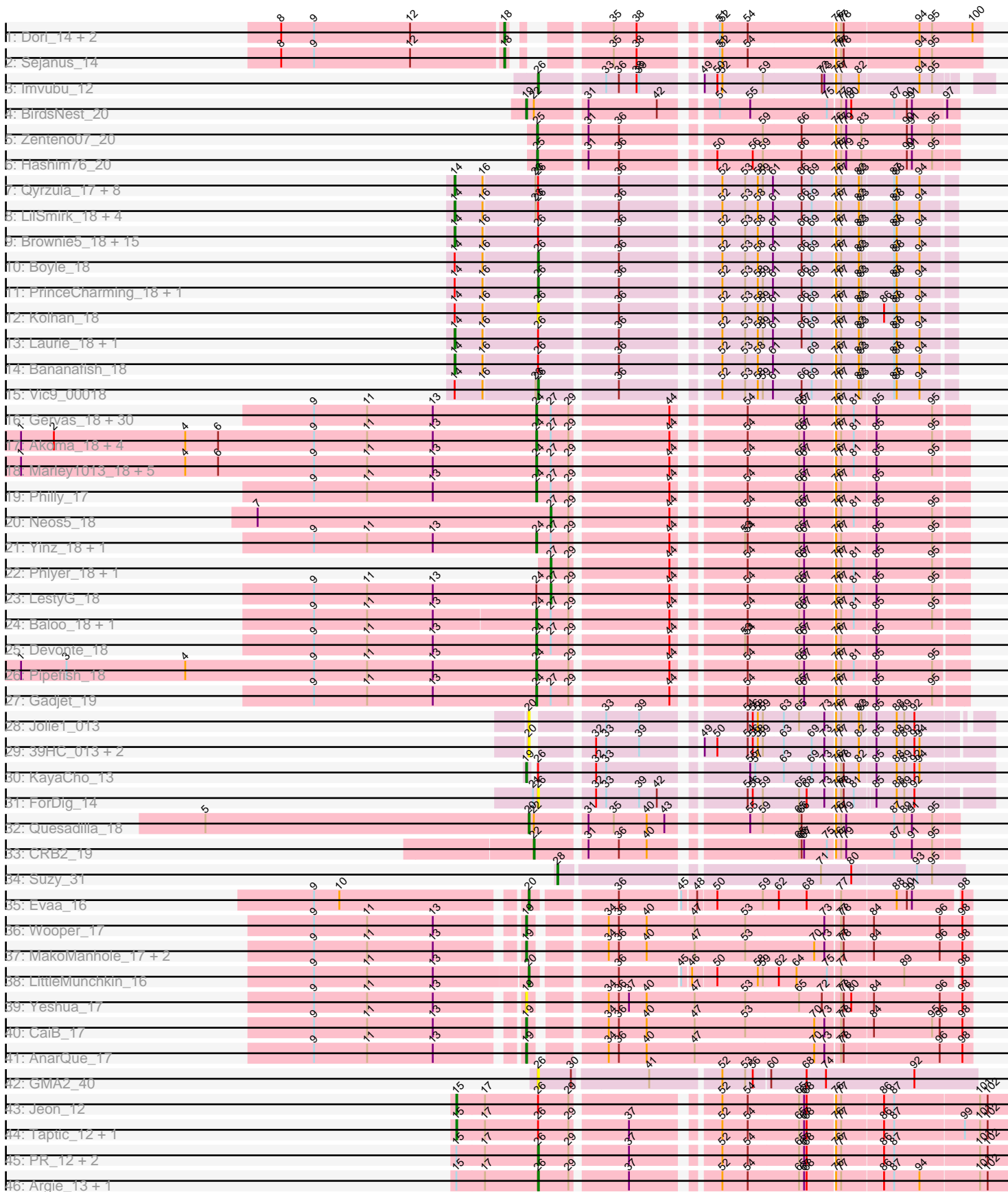


Pham 215960



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 215960 Report

This analysis was run 02/22/25 on database version 588.

Pham number 215960 has 127 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Dori_14, Mask_14, Mao1_13
- Track 2 : Sejanus_14
- Track 3 : Imvubu_12
- Track 4 : BirdsNest_20
- Track 5 : Zenteno07_20
- Track 6 : Hashim76_20
- Track 7 : Qyrzula_17, Godines_18, LizLemon_18, Arbiter_18, Kheth_18, Glass_18, Allegro_18, Calamitous_18, Holeinone_18
- Track 8 : LilSmirk_18, MasterPo_18, Kaleb_18, TA17A_18, Coffee_18
- Track 9 : Brownie5_18, Rhinoforte_18, Ares_18, Opia_18, Tres_18, Rosebush_18, Eaglehorse_18, ItsyBitsy1_18, Sabella_18, Lephleur_18, FrenchFry_18, West99_18, Blocker23_18, Tinciduntolum_19, Lars_18, Hedgerow_18
- Track 10 : Boyle_18
- Track 11 : PrinceCharming_18, Faze9_18
- Track 12 : Kolhan_18
- Track 13 : Laurie_18, Phantasmagoria_18
- Track 14 : Bananafish_18
- Track 15 : Vic9_00018
- Track 16 : Gervas_18, OrangeOswald_18, HarveySr_18, Jackstina_17, Ben11_17, SynergyX_18, Tydolla_18, Briakila_18, Corofin_18, Rita1961_18, Olivio_17, RagingRooster_18, Chandler_18, Abinghost_18, SlippinJimmy_18, SwainyDoc_18, Chentzyk_17, Audrey_18, Deenasa_18, Kronus_17, Daisy_18, MmasiCarm_18, Obutu_18, Phaedrus_17, Athena_19, Shenandoah_18, Casbah_17, Kamiyu_18, Halfpint_17, Compostia_19, TinyTerror_18
- Track 17 : Akoma_18, Marlia_18, Bernardo_18, Yahalom_18, Phayeta_18
- Track 18 : Marley1013_18, GlenHope_19, Chalmers_18, Morty007_18, Mortcellus_17, ChaChing_18
- Track 19 : Philly_17
- Track 20 : Neos5_18
- Track 21 : Yinz_18, Heathcliff_18
- Track 22 : Phlyer_18, RomaT_18
- Track 23 : LestyG_18
- Track 24 : Baloo_18, Nozo_18
- Track 25 : Devonte_18
- Track 26 : Pipefish_18
- Track 27 : Gadjet_19
- Track 28 : Jolie1_013

- Track 29 : 39HC_013, Hosp_011, 40BC_013
- Track 30 : KayaCho_13
- Track 31 : ForDig_14
- Track 32 : Quesadilla_18
- Track 33 : CRB2_19
- Track 34 : Suzy_31
- Track 35 : Evaa_16
- Track 36 : Wooper_17
- Track 37 : MakoManhole_17, CloverMinnie_17, MossRose_17
- Track 38 : LittleMunchkin_16
- Track 39 : Yeshua_17
- Track 40 : CaiB_17
- Track 41 : AnarQue_17
- Track 42 : GMA2_40
- Track 43 : Jeon_12
- Track 44 : Taptic_12, Megabear_12
- Track 45 : PR_12, Cepens_12, D12_12
- Track 46 : Argie_13, GodPhather_13

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

The start number called the most often in the published annotations is 24, it was called in 41 of the 107 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost_18, Akoma_18, Athena_19, Audrey_18, Baloo_18, Ben11_17, Bernardo_18, Briakila_18, Casbah_17, ChaChing_18, Chalmers_18, Chandler_18, Chentzyk_17, Compostia_19, Corofin_18, Daisy_18, Deenasa_18, Devonte_18, Gadget_19, Gervas_18, GlenHope_19, Halfpint_17, HarveySr_18, Heathcliff_18, Jackstina_17, Kamiyu_18, Kronus_17, Marley1013_18, Marlia_18, MmasiCarm_18, Mortcellus_17, Morty007_18, Nozo_18, Obutu_18, Olivio_17, OrangeOswald_18, Phaedrus_17, Phayeta_18, Philly_17, Pipefish_18, RagingRooster_18, Rita1961_18, Shenandoah_18, SlippinJimmy_18, SwainyDoc_18, SynergyX_18, TinyTerror_18, Tydolla_18, Yahalom_18, Yinz_18,

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

- LestyG_18,

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

- 39HC_013, 40BC_013, Allegro_18, AnarQue_17, Arbiter_18, Ares_18, Argie_13, Bananafish_18, BirdsNest_20, Blocker23_18, Boyle_18, Brownie5_18, CRB2_19, CaiB_17, Calamitous_18, Cepens_12, CloverMinnie_17, Coffee_18, D12_12, Dori_14, Eaglehorse_18, Evaa_16, Faze9_18, ForDig_14, FrenchFry_18, GMA2_40, Glass_18, GodPhather_13, Godines_18, Hashim76_20, Hedgerow_18, Holeinone_18, Hosp_011, Imvubu_12, ItsyBitsy1_18, Jeon_12, Jolie1_013, Kaleb_18, KayaCho_13, Kheth_18, Kolhan_18, Lars_18, Laurie_18, Lephleur_18, LilSmirk_18, LittleMunchkin_16, LizLemon_18, MakoManhole_17, Mao1_13, Mask_14, MasterPo_18, Megabear_12, MossRose_17, Neos5_18, Opia_18, PR_12, Phantasmagoria_18, Phlyer_18, PrinceCharming_18, Quesadilla_18, Qyrzula_17, Rhinoforte_18, RomaT_18, Rosebush_18, Sabella_18, Sejanus_14, Suzy_31,

TA17A_18, Taptic_12, Tinciduntolum_19, Tres_18, Vic9_00018, West99_18, Wooper_17, Yeshua_17, Zenteno07_20,

Summary by start number:

Start 14:

- Found in 38 of 127 (29.9%) of genes in pham
- Manual Annotations of this start: 31 of 107
- Called 86.8% of time when present
- Phage (with cluster) where this start called: Allegro_18 (B2), Arbiter_18 (B2), Ares_18 (B2), Bananafish_18 (B2), Blocker23_18 (B2), Brownie5_18 (B2), Calamitous_18 (B2), Coffee_18 (B2), Eaglehorse_18 (B2), FrenchFry_18 (B2), Glass_18 (B2), Godines_18 (B2), Hedgerow_18 (B2), Holeinone_18 (B2), ItsyBitsy1_18 (B2), Kaleb_18 (B2), Kheth_18 (B2), Lars_18 (B2), Laurie_18 (B2), Lephleur_18 (B2), LilSmirk_18 (B2), LizLemon_18 (B2), MasterPo_18 (B2), Opia_18 (B2), Phantasmagoria_18 (B2), Qyrzula_17 (B2), Rhinoforte_18 (B2), Rosebush_18 (B2), Sabella_18 (B2), TA17A_18 (B2), Tinciduntolum_19 (B2), Tres_18 (B2), West99_18 (B2),

Start 15:

- Found in 8 of 127 (6.3%) of genes in pham
- Manual Annotations of this start: 3 of 107
- Called 37.5% of time when present
- Phage (with cluster) where this start called: Jeon_12 (W), Megabear_12 (W), Taptic_12 (W),

Start 18:

- Found in 4 of 127 (3.1%) of genes in pham
- Manual Annotations of this start: 4 of 107
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Dori_14 (AD), Mao1_13 (AD), Mask_14 (AD), Sejanus_14 (AD),

Start 19:

- Found in 9 of 127 (7.1%) of genes in pham
- Manual Annotations of this start: 8 of 107
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnarQue_17 (DR), BirdsNest_20 (B13), CaiB_17 (DR), CloverMinnie_17 (DR), KayaCho_13 (B6), MakoManhole_17 (DR), MossRose_17 (DR), Wooper_17 (DR), Yeshua_17 (DR),

Start 20:

- Found in 7 of 127 (5.5%) of genes in pham
- Manual Annotations of this start: 3 of 107
- Called 100.0% of time when present
- Phage (with cluster) where this start called: 39HC_013 (B6), 40BC_013 (B6), Evaa_16 (DR), Hosp_011 (B6), Jolie1_013 (B6), LittleMunchkin_16 (DR), Quesadilla_18 (B9),

Start 22:

- Found in 3 of 127 (2.4%) of genes in pham
- Manual Annotations of this start: 1 of 107
- Called 33.3% of time when present

- Phage (with cluster) where this start called: CRB2_19 (B9),

Start 24:

- Found in 51 of 127 (40.2%) of genes in pham
- Manual Annotations of this start: 41 of 107
- Called 98.0% of time when present
- Phage (with cluster) where this start called: Abinghost_18 (B3), Akoma_18 (B3), Athena_19 (B3), Audrey_18 (B3), Baloo_18 (B3), Ben11_17 (B3), Bernardo_18 (B3), Briakila_18 (B3), Casbah_17 (B3), ChaChing_18 (B3), Chalmers_18 (B3), Chandler_18 (B3), Chentzyk_17 (B3), Compostia_19 (B3), Corofin_18 (B3), Daisy_18 (B3), Deenasa_18 (B3), Devonte_18 (B3), Gadget_19 (B3), Gervas_18 (B3), GlenHope_19 (B3), Halfpint_17 (B3), HarveySr_18 (B3), Heathcliff_18 (B3), Jackstina_17 (B3), Kamiyu_18 (B3), Kronus_17 (B3), Marley1013_18 (B3), Marlia_18 (B3), MmasiCarm_18 (B3), Mortcellus_17 (B3), Morty007_18 (B3), Nozo_18 (B3), Obutu_18 (B3), Olivio_17 (B3), OrangeOswald_18 (B3), Phaedrus_17 (B3), Phayeta_18 (B3), Philly_17 (B3), Pipefish_18 (B3), RagingRooster_18 (B3), Rita1961_18 (B3), Shenandoah_18 (B3), SlippinJimmy_18 (B3), SwainyDoc_18 (B3), SynergyX_18 (B3), TinyTerror_18 (B3), Tydolla_18 (B3), Yahalom_18 (B3), Yinz_18 (B3),

Start 25:

- Found in 2 of 127 (1.6%) of genes in pham
- Manual Annotations of this start: 2 of 107
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Hashim76_20 (B13), Zenteno07_20 (B13),

Start 26:

- Found in 50 of 127 (39.4%) of genes in pham
- Manual Annotations of this start: 9 of 107
- Called 26.0% of time when present
- Phage (with cluster) where this start called: Argie_13 (W), Boyle_18 (B2), Cepens_12 (W), D12_12 (W), Faze9_18 (B2), ForDig_14 (B6), GMA2_40 (DS), GodPhather_13 (W), Imvubu_12 (B10), Kolhan_18 (B2), PR_12 (W), PrinceCharming_18 (B2), Vic9_00018 (B2),

Start 27:

- Found in 53 of 127 (41.7%) of genes in pham
- Manual Annotations of this start: 4 of 107
- Called 7.5% of time when present
- Phage (with cluster) where this start called: LestyG_18 (B3), Neos5_18 (B3), Phlyer_18 (B3), RomaT_18 (B3),

Start 28:

- Found in 1 of 127 (0.8%) of genes in pham
- Manual Annotations of this start: 1 of 107
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Suzy_31 (DG1),

Summary by clusters:

There are 11 clusters represented in this pham: AD, B2, DS, W, B6, DG1, B13, B10, B3, DR, B9,

Info for manual annotations of cluster AD:

- Start number 18 was manually annotated 4 times for cluster AD.

Info for manual annotations of cluster B10:

- Start number 26 was manually annotated 1 time for cluster B10.

Info for manual annotations of cluster B13:

- Start number 19 was manually annotated 1 time for cluster B13.
- Start number 25 was manually annotated 2 times for cluster B13.

Info for manual annotations of cluster B2:

- Start number 14 was manually annotated 31 times for cluster B2.
- Start number 26 was manually annotated 3 times for cluster B2.

Info for manual annotations of cluster B3:

- Start number 24 was manually annotated 41 times for cluster B3.
- Start number 27 was manually annotated 4 times for cluster B3.

Info for manual annotations of cluster B6:

- Start number 19 was manually annotated 1 time for cluster B6.

Info for manual annotations of cluster B9:

- Start number 20 was manually annotated 1 time for cluster B9.
- Start number 22 was manually annotated 1 time for cluster B9.

Info for manual annotations of cluster DG1:

- Start number 28 was manually annotated 1 time for cluster DG1.

Info for manual annotations of cluster DR:

- Start number 19 was manually annotated 6 times for cluster DR.
- Start number 20 was manually annotated 2 times for cluster DR.

Info for manual annotations of cluster W:

- Start number 15 was manually annotated 3 times for cluster W.
- Start number 26 was manually annotated 5 times for cluster W.

Gene Information:

Gene: 39HC_013 Start: 13570, Stop: 14058, Start Num: 20

Candidate Starts for 39HC_013:

(Start: 20 @13570 has 3 MA's), (32, 13627), (33, 13639), (39, 13678), (49, 13732), (50, 13747), (54, 13783), (56, 13789), (58, 13795), (59, 13801), (63, 13825), (69, 13858), (73, 13873), (76, 13882), (77, 13888), (82, 13909), (85, 13927), (88, 13951), (89, 13960), (92, 13972), (94, 13978),

Gene: 40BC_013 Start: 13570, Stop: 14058, Start Num: 20

Candidate Starts for 40BC_013:

(Start: 20 @13570 has 3 MA's), (32, 13627), (33, 13639), (39, 13678), (49, 13732), (50, 13747), (54, 13783), (56, 13789), (58, 13795), (59, 13801), (63, 13825), (69, 13858), (73, 13873), (76, 13882), (77, 13888), (82, 13909), (85, 13927), (88, 13951), (89, 13960), (92, 13972), (94, 13978),

Gene: Abinghost_18 Start: 15003, Stop: 15464, Start Num: 24

Candidate Starts for Abinghost_18:

(9, 14739), (11, 14802), (13, 14880), (Start: 24 @15003 has 41 MA's), (Start: 27 @15018 has 4 MA's), (29, 15039), (44, 15147), (54, 15216), (65, 15276), (67, 15282), (76, 15315), (77, 15321), (81, 15336), (85, 15360), (95, 15426),

Gene: Akoma_18 Start: 15003, Stop: 15464, Start Num: 24

Candidate Starts for Akoma_18:

(1, 14391), (2, 14430), (4, 14586), (6, 14625), (9, 14739), (11, 14802), (13, 14880), (Start: 24 @15003 has 41 MA's), (Start: 27 @15018 has 4 MA's), (29, 15039), (44, 15147), (54, 15216), (65, 15276), (67, 15282), (76, 15315), (77, 15321), (81, 15336), (85, 15360), (95, 15426),

Gene: Allegro_18 Start: 16139, Stop: 16681, Start Num: 14

Candidate Starts for Allegro_18:

(Start: 14 @16139 has 31 MA's), (16, 16172), (23, 16232), (Start: 26 @16235 has 9 MA's), (36, 16319), (52, 16418), (53, 16445), (58, 16460), (59, 16466), (61, 16478), (66, 16511), (69, 16523), (76, 16547), (77, 16553), (82, 16574), (83, 16577), (87, 16613), (88, 16616), (94, 16643),

Gene: AnarQue_17 Start: 14776, Stop: 15270, Start Num: 19

Candidate Starts for AnarQue_17:

(9, 14545), (11, 14608), (13, 14686), (Start: 19 @14776 has 8 MA's), (34, 14848), (36, 14860), (40, 14893), (47, 14950), (70, 15091), (73, 15103), (77, 15118), (78, 15121), (96, 15232), (98, 15259),

Gene: Arbiter_18 Start: 16226, Stop: 16768, Start Num: 14

Candidate Starts for Arbiter_18:

(Start: 14 @16226 has 31 MA's), (16, 16259), (23, 16319), (Start: 26 @16322 has 9 MA's), (36, 16406), (52, 16505), (53, 16532), (58, 16547), (59, 16553), (61, 16565), (66, 16598), (69, 16610), (76, 16634), (77, 16640), (82, 16661), (83, 16664), (87, 16700), (88, 16703), (94, 16730),

Gene: Ares_18 Start: 16139, Stop: 16681, Start Num: 14

Candidate Starts for Ares_18:

(Start: 14 @16139 has 31 MA's), (16, 16172), (Start: 26 @16235 has 9 MA's), (36, 16319), (52, 16418), (53, 16445), (58, 16460), (61, 16478), (66, 16511), (69, 16523), (76, 16547), (77, 16553), (82, 16574), (83, 16577), (87, 16613), (88, 16616), (94, 16643),

Gene: Argie_13 Start: 14276, Stop: 14797, Start Num: 26

Candidate Starts for Argie_13:

(Start: 15 @14180 has 3 MA's), (17, 14213), (Start: 26 @14276 has 9 MA's), (29, 14312), (37, 14372), (52, 14459), (54, 14489), (65, 14549), (67, 14555), (68, 14558), (76, 14588), (77, 14594), (86, 14642), (87, 14654), (94, 14684), (101, 14753), (102, 14762),

Gene: Athena_19 Start: 15766, Stop: 16227, Start Num: 24

Candidate Starts for Athena_19:

(9, 15502), (11, 15565), (13, 15643), (Start: 24 @15766 has 41 MA's), (Start: 27 @15781 has 4 MA's), (29, 15802), (44, 15910), (54, 15979), (65, 16039), (67, 16045), (76, 16078), (77, 16084), (81, 16099), (85, 16123), (95, 16189),

Gene: Audrey_18 Start: 15003, Stop: 15464, Start Num: 24

Candidate Starts for Audrey_18:

(9, 14739), (11, 14802), (13, 14880), (Start: 24 @15003 has 41 MA's), (Start: 27 @15018 has 4 MA's), (29, 15039), (44, 15147), (54, 15216), (65, 15276), (67, 15282), (76, 15315), (77, 15321), (81, 15336), (85, 15360), (95, 15426),

Gene: Baloo_18 Start: 15000, Stop: 15461, Start Num: 24

Candidate Starts for Baloo_18:

(9, 14739), (11, 14802), (13, 14880), (Start: 24 @15000 has 41 MA's), (Start: 27 @15015 has 4 MA's), (29, 15036), (44, 15144), (54, 15213), (65, 15273), (67, 15279), (76, 15312), (77, 15318), (81, 15333), (85, 15357), (95, 15423),

Gene: Bananafish_18 Start: 16136, Stop: 16678, Start Num: 14

Candidate Starts for Bananafish_18:

(Start: 14 @16136 has 31 MA's), (16, 16169), (Start: 26 @16232 has 9 MA's), (36, 16316), (52, 16415), (53, 16442), (58, 16457), (61, 16475), (69, 16520), (76, 16544), (77, 16550), (82, 16571), (83, 16574), (87, 16610), (88, 16613), (94, 16640),

Gene: Ben11_17 Start: 14827, Stop: 15288, Start Num: 24

Candidate Starts for Ben11_17:

(9, 14563), (11, 14626), (13, 14704), (Start: 24 @14827 has 41 MA's), (Start: 27 @14842 has 4 MA's), (29, 14863), (44, 14971), (54, 15040), (65, 15100), (67, 15106), (76, 15139), (77, 15145), (81, 15160), (85, 15184), (95, 15250),

Gene: Bernardo_18 Start: 15002, Stop: 15463, Start Num: 24

Candidate Starts for Bernardo_18:

(1, 14390), (2, 14429), (4, 14585), (6, 14624), (9, 14738), (11, 14801), (13, 14879), (Start: 24 @15002 has 41 MA's), (Start: 27 @15017 has 4 MA's), (29, 15038), (44, 15146), (54, 15215), (65, 15275), (67, 15281), (76, 15314), (77, 15320), (81, 15335), (85, 15359), (95, 15425),

Gene: BirdsNest_20 Start: 14291, Stop: 14755, Start Num: 19

Candidate Starts for BirdsNest_20:

(Start: 19 @14291 has 8 MA's), (Start: 22 @14300 has 1 MA's), (31, 14348), (42, 14429), (51, 14480), (55, 14516), (75, 14606), (77, 14618), (79, 14624), (80, 14630), (87, 14681), (90, 14696), (91, 14702), (97, 14741),

Gene: Blocker23_18 Start: 16256, Stop: 16798, Start Num: 14

Candidate Starts for Blocker23_18:

(Start: 14 @16256 has 31 MA's), (16, 16289), (Start: 26 @16352 has 9 MA's), (36, 16436), (52, 16535), (53, 16562), (58, 16577), (61, 16595), (66, 16628), (69, 16640), (76, 16664), (77, 16670), (82, 16691), (83, 16694), (87, 16730), (88, 16733), (94, 16760),

Gene: Boyle_18 Start: 16353, Stop: 16799, Start Num: 26

Candidate Starts for Boyle_18:

(Start: 14 @16257 has 31 MA's), (16, 16290), (Start: 26 @16353 has 9 MA's), (36, 16437), (52, 16536), (53, 16563), (58, 16578), (61, 16596), (66, 16629), (69, 16641), (76, 16665), (77, 16671), (82, 16692), (83, 16695), (87, 16731), (88, 16734), (94, 16761),

Gene: Briakila_18 Start: 15768, Stop: 16229, Start Num: 24

Candidate Starts for Briakila_18:

(9, 15504), (11, 15567), (13, 15645), (Start: 24 @15768 has 41 MA's), (Start: 27 @15783 has 4 MA's), (29, 15804), (44, 15912), (54, 15981), (65, 16041), (67, 16047), (76, 16080), (77, 16086), (81, 16101), (85, 16125), (95, 16191),

Gene: Brownie5_18 Start: 16256, Stop: 16798, Start Num: 14

Candidate Starts for Brownie5_18:

(Start: 14 @16256 has 31 MA's), (16, 16289), (Start: 26 @16352 has 9 MA's), (36, 16436), (52, 16535), (53, 16562), (58, 16577), (61, 16595), (66, 16628), (69, 16640), (76, 16664), (77, 16670), (82, 16691),

(83, 16694), (87, 16730), (88, 16733), (94, 16760),

Gene: CRB2_19 Start: 16553, Stop: 17008, Start Num: 22

Candidate Starts for CRB2_19:

(Start: 22 @16553 has 1 MA's), (31, 16601), (36, 16637), (40, 16670), (65, 16826), (66, 16829), (67, 16832), (75, 16859), (76, 16865), (77, 16871), (79, 16877), (87, 16934), (91, 16955), (95, 16979),

Gene: CaiB_17 Start: 14761, Stop: 15255, Start Num: 19

Candidate Starts for CaiB_17:

(9, 14530), (11, 14593), (13, 14671), (Start: 19 @14761 has 8 MA's), (34, 14833), (36, 14845), (40, 14878), (47, 14935), (53, 14995), (70, 15076), (73, 15088), (77, 15103), (78, 15106), (84, 15139), (95, 15208), (96, 15217), (98, 15244),

Gene: Calamitous_18 Start: 16136, Stop: 16678, Start Num: 14

Candidate Starts for Calamitous_18:

(Start: 14 @16136 has 31 MA's), (16, 16169), (23, 16229), (Start: 26 @16232 has 9 MA's), (36, 16316), (52, 16415), (53, 16442), (58, 16457), (59, 16463), (61, 16475), (66, 16508), (69, 16520), (76, 16544), (77, 16550), (82, 16571), (83, 16574), (87, 16610), (88, 16613), (94, 16640),

Gene: Casbah_17 Start: 14855, Stop: 15316, Start Num: 24

Candidate Starts for Casbah_17:

(9, 14591), (11, 14654), (13, 14732), (Start: 24 @14855 has 41 MA's), (Start: 27 @14870 has 4 MA's), (29, 14891), (44, 14999), (54, 15068), (65, 15128), (67, 15134), (76, 15167), (77, 15173), (81, 15188), (85, 15212), (95, 15278),

Gene: Cepens_12 Start: 14000, Stop: 14521, Start Num: 26

Candidate Starts for Cepens_12:

(Start: 15 @13904 has 3 MA's), (17, 13937), (Start: 26 @14000 has 9 MA's), (29, 14036), (37, 14096), (52, 14183), (54, 14213), (65, 14273), (67, 14279), (68, 14282), (76, 14312), (77, 14318), (86, 14366), (87, 14378), (101, 14477), (102, 14486),

Gene: ChaChing_18 Start: 15018, Stop: 15479, Start Num: 24

Candidate Starts for ChaChing_18:

(1, 14406), (4, 14601), (6, 14640), (9, 14754), (11, 14817), (13, 14895), (Start: 24 @15018 has 41 MA's), (Start: 27 @15033 has 4 MA's), (29, 15054), (44, 15162), (54, 15231), (65, 15291), (67, 15297), (76, 15330), (77, 15336), (81, 15351), (85, 15375), (95, 15441),

Gene: Chalmers_18 Start: 15811, Stop: 16272, Start Num: 24

Candidate Starts for Chalmers_18:

(1, 15199), (4, 15394), (6, 15433), (9, 15547), (11, 15610), (13, 15688), (Start: 24 @15811 has 41 MA's), (Start: 27 @15826 has 4 MA's), (29, 15847), (44, 15955), (54, 16024), (65, 16084), (67, 16090), (76, 16123), (77, 16129), (81, 16144), (85, 16168), (95, 16234),

Gene: Chandler_18 Start: 15777, Stop: 16238, Start Num: 24

Candidate Starts for Chandler_18:

(9, 15513), (11, 15576), (13, 15654), (Start: 24 @15777 has 41 MA's), (Start: 27 @15792 has 4 MA's), (29, 15813), (44, 15921), (54, 15990), (65, 16050), (67, 16056), (76, 16089), (77, 16095), (81, 16110), (85, 16134), (95, 16200),

Gene: Chentzyk_17 Start: 14873, Stop: 15334, Start Num: 24

Candidate Starts for Chentzyk_17:

(9, 14609), (11, 14672), (13, 14750), (Start: 24 @14873 has 41 MA's), (Start: 27 @14888 has 4 MA's), (29, 14909), (44, 15017), (54, 15086), (65, 15146), (67, 15152), (76, 15185), (77, 15191), (81, 15206),

(85, 15230), (95, 15296),

Gene: CloverMinnie_17 Start: 14701, Stop: 15195, Start Num: 19

Candidate Starts for CloverMinnie_17:

(9, 14470), (11, 14533), (13, 14611), (Start: 19 @14701 has 8 MA's), (34, 14773), (36, 14785), (40, 14818), (47, 14875), (53, 14935), (70, 15016), (73, 15028), (77, 15043), (78, 15046), (84, 15079), (96, 15157), (98, 15184),

Gene: Coffee_18 Start: 16253, Stop: 16795, Start Num: 14

Candidate Starts for Coffee_18:

(Start: 14 @16253 has 31 MA's), (16, 16286), (23, 16346), (Start: 26 @16349 has 9 MA's), (36, 16433), (52, 16532), (53, 16559), (58, 16574), (61, 16592), (66, 16625), (69, 16637), (76, 16661), (77, 16667), (82, 16688), (83, 16691), (87, 16727), (88, 16730), (94, 16757),

Gene: Compostia_19 Start: 15436, Stop: 15897, Start Num: 24

Candidate Starts for Compostia_19:

(9, 15172), (11, 15235), (13, 15313), (Start: 24 @15436 has 41 MA's), (Start: 27 @15451 has 4 MA's), (29, 15472), (44, 15580), (54, 15649), (65, 15709), (67, 15715), (76, 15748), (77, 15754), (81, 15769), (85, 15793), (95, 15859),

Gene: Corofin_18 Start: 15028, Stop: 15489, Start Num: 24

Candidate Starts for Corofin_18:

(9, 14764), (11, 14827), (13, 14905), (Start: 24 @15028 has 41 MA's), (Start: 27 @15043 has 4 MA's), (29, 15064), (44, 15172), (54, 15241), (65, 15301), (67, 15307), (76, 15340), (77, 15346), (81, 15361), (85, 15385), (95, 15451),

Gene: D12_12 Start: 13993, Stop: 14514, Start Num: 26

Candidate Starts for D12_12:

(Start: 15 @13897 has 3 MA's), (17, 13930), (Start: 26 @13993 has 9 MA's), (29, 14029), (37, 14089), (52, 14176), (54, 14206), (65, 14266), (67, 14272), (68, 14275), (76, 14305), (77, 14311), (86, 14359), (87, 14371), (101, 14470), (102, 14479),

Gene: Daisy_18 Start: 15024, Stop: 15485, Start Num: 24

Candidate Starts for Daisy_18:

(9, 14760), (11, 14823), (13, 14901), (Start: 24 @15024 has 41 MA's), (Start: 27 @15039 has 4 MA's), (29, 15060), (44, 15168), (54, 15237), (65, 15297), (67, 15303), (76, 15336), (77, 15342), (81, 15357), (85, 15381), (95, 15447),

Gene: Deenasa_18 Start: 15766, Stop: 16227, Start Num: 24

Candidate Starts for Deenasa_18:

(9, 15502), (11, 15565), (13, 15643), (Start: 24 @15766 has 41 MA's), (Start: 27 @15781 has 4 MA's), (29, 15802), (44, 15910), (54, 15979), (65, 16039), (67, 16045), (76, 16078), (77, 16084), (81, 16099), (85, 16123), (95, 16189),

Gene: Devonte_18 Start: 15003, Stop: 15464, Start Num: 24

Candidate Starts for Devonte_18:

(9, 14739), (11, 14802), (13, 14880), (Start: 24 @15003 has 41 MA's), (Start: 27 @15018 has 4 MA's), (29, 15039), (44, 15147), (53, 15213), (54, 15216), (65, 15276), (67, 15282), (76, 15315), (77, 15321), (85, 15360),

Gene: Dori_14 Start: 11980, Stop: 12462, Start Num: 18

Candidate Starts for Dori_14:

(8, 11722), (9, 11761), (12, 11875), (Start: 18 @11980 has 4 MA's), (35, 12058), (38, 12085), (51, 12160), (52, 12163), (54, 12193), (76, 12292), (77, 12298), (78, 12301), (94, 12388), (95, 12403), (100, 12451),

Gene: Eaglehorse_18 Start: 16160, Stop: 16702, Start Num: 14

Candidate Starts for Eaglehorse_18:

(Start: 14 @16160 has 31 MA's), (16, 16193), (Start: 26 @16256 has 9 MA's), (36, 16340), (52, 16439), (53, 16466), (58, 16481), (61, 16499), (66, 16532), (69, 16544), (76, 16568), (77, 16574), (82, 16595), (83, 16598), (87, 16634), (88, 16637), (94, 16664),

Gene: Evaa_16 Start: 14619, Stop: 15095, Start Num: 20

Candidate Starts for Evaa_16:

(9, 14385), (10, 14415), (Start: 20 @14619 has 3 MA's), (36, 14706), (45, 14775), (48, 14790), (50, 14811), (59, 14865), (62, 14883), (68, 14916), (77, 14952), (88, 15015), (90, 15027), (91, 15033), (98, 15084),

Gene: Faze9_18 Start: 16349, Stop: 16795, Start Num: 26

Candidate Starts for Faze9_18:

(Start: 14 @16253 has 31 MA's), (16, 16286), (Start: 26 @16349 has 9 MA's), (36, 16433), (52, 16532), (53, 16559), (58, 16574), (59, 16580), (61, 16592), (66, 16625), (69, 16637), (76, 16661), (77, 16667), (82, 16688), (83, 16691), (87, 16727), (88, 16730), (94, 16757),

Gene: ForDig_14 Start: 13572, Stop: 14057, Start Num: 26

Candidate Starts for ForDig_14:

(21, 13566), (Start: 26 @13572 has 9 MA's), (32, 13629), (33, 13641), (39, 13680), (42, 13701), (54, 13785), (56, 13791), (59, 13803), (65, 13845), (68, 13854), (73, 13875), (76, 13884), (77, 13890), (78, 13893), (81, 13905), (85, 13926), (88, 13950), (89, 13959), (92, 13971),

Gene: FrenchFry_18 Start: 16256, Stop: 16798, Start Num: 14

Candidate Starts for FrenchFry_18:

(Start: 14 @16256 has 31 MA's), (16, 16289), (Start: 26 @16352 has 9 MA's), (36, 16436), (52, 16535), (53, 16562), (58, 16577), (61, 16595), (66, 16628), (69, 16640), (76, 16664), (77, 16670), (82, 16691), (83, 16694), (87, 16730), (88, 16733), (94, 16760),

Gene: GMA2_40 Start: 42184, Stop: 42681, Start Num: 26

Candidate Starts for GMA2_40:

(Start: 26 @42184 has 9 MA's), (30, 42223), (41, 42307), (52, 42385), (53, 42412), (56, 42421), (60, 42439), (68, 42481), (74, 42502), (92, 42607),

Gene: Gadget_19 Start: 15007, Stop: 15468, Start Num: 24

Candidate Starts for Gadget_19:

(9, 14743), (11, 14806), (13, 14884), (Start: 24 @15007 has 41 MA's), (Start: 27 @15022 has 4 MA's), (29, 15043), (44, 15151), (54, 15220), (65, 15280), (67, 15286), (76, 15319), (77, 15325), (85, 15364), (95, 15430),

Gene: Gervas_18 Start: 14986, Stop: 15447, Start Num: 24

Candidate Starts for Gervas_18:

(9, 14722), (11, 14785), (13, 14863), (Start: 24 @14986 has 41 MA's), (Start: 27 @15001 has 4 MA's), (29, 15022), (44, 15130), (54, 15199), (65, 15259), (67, 15265), (76, 15298), (77, 15304), (81, 15319), (85, 15343), (95, 15409),

Gene: Glass_18 Start: 16256, Stop: 16798, Start Num: 14

Candidate Starts for Glass_18:

(Start: 14 @16256 has 31 MA's), (16, 16289), (23, 16349), (Start: 26 @16352 has 9 MA's), (36, 16436), (52, 16535), (53, 16562), (58, 16577), (59, 16583), (61, 16595), (66, 16628), (69, 16640), (76, 16664), (77, 16670), (82, 16691), (83, 16694), (87, 16730), (88, 16733), (94, 16760),

Gene: GlenHope_19 Start: 14993, Stop: 15454, Start Num: 24

Candidate Starts for GlenHope_19:

(1, 14381), (4, 14576), (6, 14615), (9, 14729), (11, 14792), (13, 14870), (Start: 24 @14993 has 41 MA's), (Start: 27 @15008 has 4 MA's), (29, 15029), (44, 15137), (54, 15206), (65, 15266), (67, 15272), (76, 15305), (77, 15311), (81, 15326), (85, 15350), (95, 15416),

Gene: GodPhather_13 Start: 14258, Stop: 14779, Start Num: 26

Candidate Starts for GodPhather_13:

(Start: 15 @14162 has 3 MA's), (17, 14195), (Start: 26 @14258 has 9 MA's), (29, 14294), (37, 14354), (52, 14441), (54, 14471), (65, 14531), (67, 14537), (68, 14540), (76, 14570), (77, 14576), (86, 14624), (87, 14636), (94, 14666), (101, 14735), (102, 14744),

Gene: Godines_18 Start: 16139, Stop: 16693, Start Num: 14

Candidate Starts for Godines_18:

(Start: 14 @16139 has 31 MA's), (16, 16172), (23, 16232), (Start: 26 @16235 has 9 MA's), (36, 16331), (52, 16430), (53, 16457), (58, 16472), (59, 16478), (61, 16490), (66, 16523), (69, 16535), (76, 16559), (77, 16565), (82, 16586), (83, 16589), (87, 16625), (88, 16628), (94, 16655),

Gene: Halfpint_17 Start: 14828, Stop: 15289, Start Num: 24

Candidate Starts for Halfpint_17:

(9, 14564), (11, 14627), (13, 14705), (Start: 24 @14828 has 41 MA's), (Start: 27 @14843 has 4 MA's), (29, 14864), (44, 14972), (54, 15041), (65, 15101), (67, 15107), (76, 15140), (77, 15146), (81, 15161), (85, 15185), (95, 15251),

Gene: HarveySr_18 Start: 14980, Stop: 15441, Start Num: 24

Candidate Starts for HarveySr_18:

(9, 14716), (11, 14779), (13, 14857), (Start: 24 @14980 has 41 MA's), (Start: 27 @14995 has 4 MA's), (29, 15016), (44, 15124), (54, 15193), (65, 15253), (67, 15259), (76, 15292), (77, 15298), (81, 15313), (85, 15337), (95, 15403),

Gene: Hashim76_20 Start: 14543, Stop: 14998, Start Num: 25

Candidate Starts for Hashim76_20:

(Start: 25 @14543 has 2 MA's), (31, 14591), (36, 14627), (50, 14720), (56, 14762), (59, 14774), (66, 14819), (76, 14855), (77, 14861), (79, 14867), (83, 14885), (90, 14939), (91, 14945), (95, 14969),

Gene: Heathcliff_18 Start: 14965, Stop: 15426, Start Num: 24

Candidate Starts for Heathcliff_18:

(9, 14701), (11, 14764), (13, 14842), (Start: 24 @14965 has 41 MA's), (Start: 27 @14980 has 4 MA's), (29, 15001), (44, 15109), (53, 15175), (54, 15178), (65, 15238), (67, 15244), (76, 15277), (77, 15283), (85, 15322), (95, 15388),

Gene: Hedgerow_18 Start: 16238, Stop: 16780, Start Num: 14

Candidate Starts for Hedgerow_18:

(Start: 14 @16238 has 31 MA's), (16, 16271), (Start: 26 @16334 has 9 MA's), (36, 16418), (52, 16517), (53, 16544), (58, 16559), (61, 16577), (66, 16610), (69, 16622), (76, 16646), (77, 16652), (82, 16673), (83, 16676), (87, 16712), (88, 16715), (94, 16742),

Gene: Holeinone_18 Start: 16138, Stop: 16680, Start Num: 14

Candidate Starts for Holeinone_18:

(Start: 14 @16138 has 31 MA's), (16, 16171), (23, 16231), (Start: 26 @16234 has 9 MA's), (36, 16318), (52, 16417), (53, 16444), (58, 16459), (59, 16465), (61, 16477), (66, 16510), (69, 16522), (76, 16546), (77, 16552), (82, 16573), (83, 16576), (87, 16612), (88, 16615), (94, 16642),

Gene: Hosp_011 Start: 11772, Stop: 12260, Start Num: 20

Candidate Starts for Hosp_011:

(Start: 20 @11772 has 3 MA's), (32, 11829), (33, 11841), (39, 11880), (49, 11934), (50, 11949), (54, 11985), (56, 11991), (58, 11997), (59, 12003), (63, 12027), (69, 12060), (73, 12075), (76, 12084), (77, 12090), (82, 12111), (85, 12129), (88, 12153), (89, 12162), (92, 12174), (94, 12180),

Gene: Imvubu_12 Start: 12561, Stop: 13034, Start Num: 26

Candidate Starts for Imvubu_12:

(Start: 26 @12561 has 9 MA's), (33, 12630), (36, 12645), (38, 12666), (39, 12669), (49, 12723), (50, 12738), (52, 12744), (59, 12792), (72, 12861), (73, 12864), (76, 12873), (77, 12879), (82, 12900), (94, 12969), (95, 12984),

Gene: ItsyBitsy1_18 Start: 16130, Stop: 16672, Start Num: 14

Candidate Starts for ItsyBitsy1_18:

(Start: 14 @16130 has 31 MA's), (16, 16163), (Start: 26 @16226 has 9 MA's), (36, 16310), (52, 16409), (53, 16436), (58, 16451), (61, 16469), (66, 16502), (69, 16514), (76, 16538), (77, 16544), (82, 16565), (83, 16568), (87, 16604), (88, 16607), (94, 16634),

Gene: Jackstina_17 Start: 14929, Stop: 15390, Start Num: 24

Candidate Starts for Jackstina_17:

(9, 14665), (11, 14728), (13, 14806), (Start: 24 @14929 has 41 MA's), (Start: 27 @14944 has 4 MA's), (29, 14965), (44, 15073), (54, 15142), (65, 15202), (67, 15208), (76, 15241), (77, 15247), (81, 15262), (85, 15286), (95, 15352),

Gene: Jeon_12 Start: 13904, Stop: 14521, Start Num: 15

Candidate Starts for Jeon_12:

(Start: 15 @13904 has 3 MA's), (17, 13937), (Start: 26 @14000 has 9 MA's), (29, 14036), (52, 14183), (54, 14213), (65, 14273), (67, 14279), (68, 14282), (76, 14312), (77, 14318), (86, 14366), (87, 14378), (101, 14477), (102, 14486),

Gene: Jolie1_013 Start: 13551, Stop: 14030, Start Num: 20

Candidate Starts for Jolie1_013:

(Start: 20 @13551 has 3 MA's), (33, 13620), (39, 13659), (54, 13764), (56, 13770), (58, 13776), (59, 13782), (63, 13806), (65, 13824), (73, 13854), (76, 13863), (77, 13869), (82, 13890), (83, 13893), (85, 13908), (88, 13932), (89, 13941), (92, 13953),

Gene: Kaleb_18 Start: 16256, Stop: 16798, Start Num: 14

Candidate Starts for Kaleb_18:

(Start: 14 @16256 has 31 MA's), (16, 16289), (23, 16349), (Start: 26 @16352 has 9 MA's), (36, 16436), (52, 16535), (53, 16562), (58, 16577), (61, 16595), (66, 16628), (69, 16640), (76, 16664), (77, 16670), (82, 16691), (83, 16694), (87, 16730), (88, 16733), (94, 16760),

Gene: Kamiyu_18 Start: 14974, Stop: 15435, Start Num: 24

Candidate Starts for Kamiyu_18:

(9, 14710), (11, 14773), (13, 14851), (Start: 24 @14974 has 41 MA's), (Start: 27 @14989 has 4 MA's), (29, 15010), (44, 15118), (54, 15187), (65, 15247), (67, 15253), (76, 15286), (77, 15292), (81, 15307), (85, 15331), (95, 15397),

Gene: KayaCho_13 Start: 13548, Stop: 14048, Start Num: 19

Candidate Starts for KayaCho_13:

(Start: 19 @13548 has 8 MA's), (Start: 26 @13554 has 9 MA's), (32, 13611), (33, 13623), (55, 13770), (57, 13776), (63, 13809), (69, 13842), (73, 13857), (76, 13866), (77, 13872), (78, 13875), (82, 13893), (85, 13911), (88, 13935), (89, 13944), (92, 13956), (94, 13962),

Gene: Kheth_18 Start: 16139, Stop: 16681, Start Num: 14

Candidate Starts for Kheth_18:

(Start: 14 @16139 has 31 MA's), (16, 16172), (23, 16232), (Start: 26 @16235 has 9 MA's), (36, 16319), (52, 16418), (53, 16445), (58, 16460), (59, 16466), (61, 16478), (66, 16511), (69, 16523), (76, 16547), (77, 16553), (82, 16574), (83, 16577), (87, 16613), (88, 16616), (94, 16643),

Gene: Kolhan_18 Start: 16232, Stop: 16678, Start Num: 26

Candidate Starts for Kolhan_18:

(Start: 14 @16136 has 31 MA's), (16, 16169), (Start: 26 @16232 has 9 MA's), (36, 16316), (52, 16415), (53, 16442), (58, 16457), (59, 16463), (61, 16475), (66, 16508), (69, 16520), (76, 16544), (77, 16550), (82, 16571), (83, 16574), (86, 16598), (87, 16610), (88, 16613), (94, 16640),

Gene: Kronus_17 Start: 15586, Stop: 16047, Start Num: 24

Candidate Starts for Kronus_17:

(9, 15322), (11, 15385), (13, 15463), (Start: 24 @15586 has 41 MA's), (Start: 27 @15601 has 4 MA's), (29, 15622), (44, 15730), (54, 15799), (65, 15859), (67, 15865), (76, 15898), (77, 15904), (81, 15919), (85, 15943), (95, 16009),

Gene: Lars_18 Start: 16256, Stop: 16798, Start Num: 14

Candidate Starts for Lars_18:

(Start: 14 @16256 has 31 MA's), (16, 16289), (Start: 26 @16352 has 9 MA's), (36, 16436), (52, 16535), (53, 16562), (58, 16577), (61, 16595), (66, 16628), (69, 16640), (76, 16664), (77, 16670), (82, 16691), (83, 16694), (87, 16730), (88, 16733), (94, 16760),

Gene: Laurie_18 Start: 16134, Stop: 16676, Start Num: 14

Candidate Starts for Laurie_18:

(Start: 14 @16134 has 31 MA's), (16, 16167), (Start: 26 @16230 has 9 MA's), (36, 16314), (52, 16413), (53, 16440), (58, 16455), (59, 16461), (61, 16473), (66, 16506), (69, 16518), (76, 16542), (77, 16548), (82, 16569), (83, 16572), (87, 16608), (88, 16611), (94, 16638),

Gene: Lephleur_18 Start: 16136, Stop: 16678, Start Num: 14

Candidate Starts for Lephleur_18:

(Start: 14 @16136 has 31 MA's), (16, 16169), (Start: 26 @16232 has 9 MA's), (36, 16316), (52, 16415), (53, 16442), (58, 16457), (61, 16475), (66, 16508), (69, 16520), (76, 16544), (77, 16550), (82, 16571), (83, 16574), (87, 16610), (88, 16613), (94, 16640),

Gene: LestyG_18 Start: 15022, Stop: 15468, Start Num: 27

Candidate Starts for LestyG_18:

(9, 14743), (11, 14806), (13, 14884), (Start: 24 @15007 has 41 MA's), (Start: 27 @15022 has 4 MA's), (29, 15043), (44, 15151), (54, 15220), (65, 15280), (67, 15286), (76, 15319), (77, 15325), (81, 15340), (85, 15364), (95, 15430),

Gene: LilSmirk_18 Start: 16136, Stop: 16678, Start Num: 14

Candidate Starts for LilSmirk_18:

(Start: 14 @16136 has 31 MA's), (16, 16169), (23, 16229), (Start: 26 @16232 has 9 MA's), (36, 16316), (52, 16415), (53, 16442), (58, 16457), (61, 16475), (66, 16508), (69, 16520), (76, 16544), (77, 16550), (82, 16571), (83, 16574), (87, 16610), (88, 16613), (94, 16640),

Gene: LittleMunchkin_16 Start: 14770, Stop: 15246, Start Num: 20

Candidate Starts for LittleMunchkin_16:

(9, 14521), (11, 14584), (13, 14662), (Start: 20 @14770 has 3 MA's), (36, 14857), (45, 14926), (46, 14935), (50, 14962), (58, 15010), (59, 15016), (62, 15034), (64, 15055), (75, 15091), (77, 15103), (89, 15175), (98, 15235),

Gene: LizLemon_18 Start: 16256, Stop: 16798, Start Num: 14

Candidate Starts for LizLemon_18:

(Start: 14 @16256 has 31 MA's), (16, 16289), (23, 16349), (Start: 26 @16352 has 9 MA's), (36, 16436), (52, 16535), (53, 16562), (58, 16577), (59, 16583), (61, 16595), (66, 16628), (69, 16640), (76, 16664), (77, 16670), (82, 16691), (83, 16694), (87, 16730), (88, 16733), (94, 16760),

Gene: MakoManhole_17 Start: 14779, Stop: 15273, Start Num: 19

Candidate Starts for MakoManhole_17:

(9, 14548), (11, 14611), (13, 14689), (Start: 19 @14779 has 8 MA's), (34, 14851), (36, 14863), (40, 14896), (47, 14953), (53, 15013), (70, 15094), (73, 15106), (77, 15121), (78, 15124), (84, 15157), (96, 15235), (98, 15262),

Gene: Mao1_13 Start: 12376, Stop: 12858, Start Num: 18

Candidate Starts for Mao1_13:

(8, 12118), (9, 12157), (12, 12271), (Start: 18 @12376 has 4 MA's), (35, 12454), (38, 12481), (51, 12556), (52, 12559), (54, 12589), (76, 12688), (77, 12694), (78, 12697), (94, 12784), (95, 12799), (100, 12847),

Gene: Marley1013_18 Start: 15787, Stop: 16248, Start Num: 24

Candidate Starts for Marley1013_18:

(1, 15175), (4, 15370), (6, 15409), (9, 15523), (11, 15586), (13, 15664), (Start: 24 @15787 has 41 MA's), (Start: 27 @15802 has 4 MA's), (29, 15823), (44, 15931), (54, 16000), (65, 16060), (67, 16066), (76, 16099), (77, 16105), (81, 16120), (85, 16144), (95, 16210),

Gene: Marlia_18 Start: 14989, Stop: 15450, Start Num: 24

Candidate Starts for Marlia_18:

(1, 14377), (2, 14416), (4, 14572), (6, 14611), (9, 14725), (11, 14788), (13, 14866), (Start: 24 @14989 has 41 MA's), (Start: 27 @15004 has 4 MA's), (29, 15025), (44, 15133), (54, 15202), (65, 15262), (67, 15268), (76, 15301), (77, 15307), (81, 15322), (85, 15346), (95, 15412),

Gene: Mask_14 Start: 12377, Stop: 12859, Start Num: 18

Candidate Starts for Mask_14:

(8, 12119), (9, 12158), (12, 12272), (Start: 18 @12377 has 4 MA's), (35, 12455), (38, 12482), (51, 12557), (52, 12560), (54, 12590), (76, 12689), (77, 12695), (78, 12698), (94, 12785), (95, 12800), (100, 12848),

Gene: MasterPo_18 Start: 16136, Stop: 16678, Start Num: 14

Candidate Starts for MasterPo_18:

(Start: 14 @16136 has 31 MA's), (16, 16169), (23, 16229), (Start: 26 @16232 has 9 MA's), (36, 16316), (52, 16415), (53, 16442), (58, 16457), (61, 16475), (66, 16508), (69, 16520), (76, 16544), (77, 16550), (82, 16571), (83, 16574), (87, 16610), (88, 16613), (94, 16640),

Gene: Megabear_12 Start: 13847, Stop: 14464, Start Num: 15

Candidate Starts for Megabear_12:

(Start: 15 @13847 has 3 MA's), (17, 13880), (Start: 26 @13943 has 9 MA's), (29, 13979), (37, 14039), (52, 14126), (54, 14156), (65, 14216), (67, 14222), (68, 14225), (76, 14255), (77, 14261), (86, 14309), (87, 14321), (99, 14402), (101, 14420), (102, 14429),

Gene: MmasiCarm_18 Start: 15000, Stop: 15461, Start Num: 24

Candidate Starts for MmasiCarm_18:

(9, 14736), (11, 14799), (13, 14877), (Start: 24 @15000 has 41 MA's), (Start: 27 @15015 has 4 MA's), (29, 15036), (44, 15144), (54, 15213), (65, 15273), (67, 15279), (76, 15312), (77, 15318), (81, 15333), (85, 15357), (95, 15423),

Gene: Mortcellus_17 Start: 15641, Stop: 16102, Start Num: 24

Candidate Starts for Mortcellus_17:

(1, 15029), (4, 15224), (6, 15263), (9, 15377), (11, 15440), (13, 15518), (Start: 24 @15641 has 41 MA's), (Start: 27 @15656 has 4 MA's), (29, 15677), (44, 15785), (54, 15854), (65, 15914), (67, 15920), (76, 15953), (77, 15959), (81, 15974), (85, 15998), (95, 16064),

Gene: Morty007_18 Start: 15787, Stop: 16248, Start Num: 24

Candidate Starts for Morty007_18:

(1, 15175), (4, 15370), (6, 15409), (9, 15523), (11, 15586), (13, 15664), (Start: 24 @15787 has 41 MA's), (Start: 27 @15802 has 4 MA's), (29, 15823), (44, 15931), (54, 16000), (65, 16060), (67, 16066), (76, 16099), (77, 16105), (81, 16120), (85, 16144), (95, 16210),

Gene: MossRose_17 Start: 14758, Stop: 15252, Start Num: 19

Candidate Starts for MossRose_17:

(9, 14527), (11, 14590), (13, 14668), (Start: 19 @14758 has 8 MA's), (34, 14830), (36, 14842), (40, 14875), (47, 14932), (53, 14992), (70, 15073), (73, 15085), (77, 15100), (78, 15103), (84, 15136), (96, 15214), (98, 15241),

Gene: Neos5_18 Start: 15810, Stop: 16256, Start Num: 27

Candidate Starts for Neos5_18:

(7, 15462), (Start: 27 @15810 has 4 MA's), (29, 15831), (44, 15939), (54, 16008), (65, 16068), (67, 16074), (76, 16107), (77, 16113), (81, 16128), (85, 16152), (95, 16218),

Gene: Nozo_18 Start: 15765, Stop: 16226, Start Num: 24

Candidate Starts for Nozo_18:

(9, 15504), (11, 15567), (13, 15645), (Start: 24 @15765 has 41 MA's), (Start: 27 @15780 has 4 MA's), (29, 15801), (44, 15909), (54, 15978), (65, 16038), (67, 16044), (76, 16077), (77, 16083), (81, 16098), (85, 16122), (95, 16188),

Gene: Obutu_18 Start: 14998, Stop: 15459, Start Num: 24

Candidate Starts for Obutu_18:

(9, 14734), (11, 14797), (13, 14875), (Start: 24 @14998 has 41 MA's), (Start: 27 @15013 has 4 MA's), (29, 15034), (44, 15142), (54, 15211), (65, 15271), (67, 15277), (76, 15310), (77, 15316), (81, 15331), (85, 15355), (95, 15421),

Gene: Olivio_17 Start: 14852, Stop: 15313, Start Num: 24

Candidate Starts for Olivio_17:

(9, 14588), (11, 14651), (13, 14729), (Start: 24 @14852 has 41 MA's), (Start: 27 @14867 has 4 MA's), (29, 14888), (44, 14996), (54, 15065), (65, 15125), (67, 15131), (76, 15164), (77, 15170), (81, 15185), (85, 15209), (95, 15275),

Gene: Opia_18 Start: 16136, Stop: 16678, Start Num: 14

Candidate Starts for Opia_18:

(Start: 14 @16136 has 31 MA's), (16, 16169), (Start: 26 @16232 has 9 MA's), (36, 16316), (52, 16415), (53, 16442), (58, 16457), (61, 16475), (66, 16508), (69, 16520), (76, 16544), (77, 16550), (82, 16571), (83, 16574), (87, 16610), (88, 16613), (94, 16640),

Gene: OrangeOswald_18 Start: 15003, Stop: 15464, Start Num: 24

Candidate Starts for OrangeOswald_18:

(9, 14739), (11, 14802), (13, 14880), (Start: 24 @15003 has 41 MA's), (Start: 27 @15018 has 4 MA's), (29, 15039), (44, 15147), (54, 15216), (65, 15276), (67, 15282), (76, 15315), (77, 15321), (81, 15336), (85, 15360), (95, 15426),

Gene: PR_12 Start: 13970, Stop: 14491, Start Num: 26

Candidate Starts for PR_12:

(Start: 15 @13874 has 3 MA's), (17, 13907), (Start: 26 @13970 has 9 MA's), (29, 14006), (37, 14066), (52, 14153), (54, 14183), (65, 14243), (67, 14249), (68, 14252), (76, 14282), (77, 14288), (86, 14336), (87, 14348), (101, 14447), (102, 14456),

Gene: Phaedrus_17 Start: 14921, Stop: 15382, Start Num: 24

Candidate Starts for Phaedrus_17:

(9, 14657), (11, 14720), (13, 14798), (Start: 24 @14921 has 41 MA's), (Start: 27 @14936 has 4 MA's), (29, 14957), (44, 15065), (54, 15134), (65, 15194), (67, 15200), (76, 15233), (77, 15239), (81, 15254), (85, 15278), (95, 15344),

Gene: Phantasmagoria_18 Start: 16136, Stop: 16678, Start Num: 14

Candidate Starts for Phantasmagoria_18:

(Start: 14 @16136 has 31 MA's), (16, 16169), (Start: 26 @16232 has 9 MA's), (36, 16316), (52, 16415), (53, 16442), (58, 16457), (59, 16463), (61, 16475), (66, 16508), (69, 16520), (76, 16544), (77, 16550), (82, 16571), (83, 16574), (87, 16610), (88, 16613), (94, 16640),

Gene: Phayeta_18 Start: 14879, Stop: 15340, Start Num: 24

Candidate Starts for Phayeta_18:

(1, 14267), (2, 14306), (4, 14462), (6, 14501), (9, 14615), (11, 14678), (13, 14756), (Start: 24 @14879 has 41 MA's), (Start: 27 @14894 has 4 MA's), (29, 14915), (44, 15023), (54, 15092), (65, 15152), (67, 15158), (76, 15191), (77, 15197), (81, 15212), (85, 15236), (95, 15302),

Gene: Philly_17 Start: 14869, Stop: 15330, Start Num: 24

Candidate Starts for Philly_17:

(9, 14605), (11, 14668), (13, 14746), (Start: 24 @14869 has 41 MA's), (Start: 27 @14884 has 4 MA's), (29, 14905), (44, 15013), (54, 15082), (65, 15142), (67, 15148), (76, 15181), (77, 15187), (85, 15226),

Gene: Phlyer_18 Start: 15753, Stop: 16199, Start Num: 27

Candidate Starts for Phlyer_18:

(Start: 27 @15753 has 4 MA's), (29, 15774), (44, 15882), (54, 15951), (65, 16011), (67, 16017), (76, 16050), (77, 16056), (81, 16071), (85, 16095), (95, 16161),

Gene: Pipefish_18 Start: 15887, Stop: 16348, Start Num: 24

Candidate Starts for Pipefish_18:

(1, 15275), (3, 15329), (4, 15470), (9, 15623), (11, 15686), (13, 15764), (Start: 24 @15887 has 41 MA's), (29, 15923), (44, 16031), (54, 16100), (65, 16160), (67, 16166), (76, 16199), (77, 16205), (81, 16220), (85, 16244), (95, 16310),

Gene: PrinceCharming_18 Start: 16352, Stop: 16798, Start Num: 26

Candidate Starts for PrinceCharming_18:

(Start: 14 @16256 has 31 MA's), (16, 16289), (Start: 26 @16352 has 9 MA's), (36, 16436), (52, 16535), (53, 16562), (58, 16577), (59, 16583), (61, 16595), (66, 16628), (69, 16640), (76, 16664), (77, 16670), (82, 16691), (83, 16694), (87, 16730), (88, 16733), (94, 16760),

Gene: Quesadilla_18 Start: 16370, Stop: 16834, Start Num: 20

Candidate Starts for Quesadilla_18:

(5, 15986), (Start: 20 @16370 has 3 MA's), (Start: 22 @16376 has 1 MA's), (31, 16427), (35, 16457), (40, 16496), (43, 16517), (55, 16595), (59, 16610), (65, 16652), (66, 16655), (76, 16691), (77, 16697), (79, 16703), (87, 16760), (89, 16772), (91, 16781), (95, 16805),

Gene: Qyrzula_17 Start: 16226, Stop: 16768, Start Num: 14

Candidate Starts for Qyrzula_17:

(Start: 14 @16226 has 31 MA's), (16, 16259), (23, 16319), (Start: 26 @16322 has 9 MA's), (36, 16406), (52, 16505), (53, 16532), (58, 16547), (59, 16553), (61, 16565), (66, 16598), (69, 16610), (76, 16634), (77, 16640), (82, 16661), (83, 16664), (87, 16700), (88, 16703), (94, 16730),

Gene: RagingRooster_18 Start: 15004, Stop: 15465, Start Num: 24

Candidate Starts for RagingRooster_18:

(9, 14740), (11, 14803), (13, 14881), (Start: 24 @15004 has 41 MA's), (Start: 27 @15019 has 4 MA's), (29, 15040), (44, 15148), (54, 15217), (65, 15277), (67, 15283), (76, 15316), (77, 15322), (81, 15337), (85, 15361), (95, 15427),

Gene: Rhinoforte_18 Start: 16253, Stop: 16795, Start Num: 14

Candidate Starts for Rhinoforte_18:

(Start: 14 @16253 has 31 MA's), (16, 16286), (Start: 26 @16349 has 9 MA's), (36, 16433), (52, 16532), (53, 16559), (58, 16574), (61, 16592), (66, 16625), (69, 16637), (76, 16661), (77, 16667), (82, 16688), (83, 16691), (87, 16727), (88, 16730), (94, 16757),

Gene: Rita1961_18 Start: 14999, Stop: 15460, Start Num: 24

Candidate Starts for Rita1961_18:

(9, 14735), (11, 14798), (13, 14876), (Start: 24 @14999 has 41 MA's), (Start: 27 @15014 has 4 MA's), (29, 15035), (44, 15143), (54, 15212), (65, 15272), (67, 15278), (76, 15311), (77, 15317), (81, 15332), (85, 15356), (95, 15422),

Gene: RomaT_18 Start: 15800, Stop: 16246, Start Num: 27

Candidate Starts for RomaT_18:

(Start: 27 @15800 has 4 MA's), (29, 15821), (44, 15929), (54, 15998), (65, 16058), (67, 16064), (76, 16097), (77, 16103), (81, 16118), (85, 16142), (95, 16208),

Gene: Rosebush_18 Start: 16253, Stop: 16795, Start Num: 14

Candidate Starts for Rosebush_18:

(Start: 14 @16253 has 31 MA's), (16, 16286), (Start: 26 @16349 has 9 MA's), (36, 16433), (52, 16532), (53, 16559), (58, 16574), (61, 16592), (66, 16625), (69, 16637), (76, 16661), (77, 16667), (82, 16688), (83, 16691), (87, 16727), (88, 16730), (94, 16757),

Gene: Sabella_18 Start: 16139, Stop: 16681, Start Num: 14

Candidate Starts for Sabella_18:

(Start: 14 @16139 has 31 MA's), (16, 16172), (Start: 26 @16235 has 9 MA's), (36, 16319), (52, 16418), (53, 16445), (58, 16460), (61, 16478), (66, 16511), (69, 16523), (76, 16547), (77, 16553), (82, 16574), (83, 16577), (87, 16613), (88, 16616), (94, 16643),

Gene: Sejanus_14 Start: 13310, Stop: 13792, Start Num: 18

Candidate Starts for Sejanus_14:

(8, 13052), (9, 13091), (12, 13205), (Start: 18 @13310 has 4 MA's), (35, 13388), (38, 13415), (51, 13490), (52, 13493), (54, 13523), (76, 13622), (77, 13628), (78, 13631), (94, 13718), (95, 13733),

Gene: Shenandoah_18 Start: 14982, Stop: 15443, Start Num: 24

Candidate Starts for Shenandoah_18:

(9, 14718), (11, 14781), (13, 14859), (Start: 24 @14982 has 41 MA's), (Start: 27 @14997 has 4 MA's), (29, 15018), (44, 15126), (54, 15195), (65, 15255), (67, 15261), (76, 15294), (77, 15300), (81, 15315), (85, 15339), (95, 15405),

Gene: SlippinJimmy_18 Start: 15768, Stop: 16229, Start Num: 24

Candidate Starts for SlippinJimmy_18:

(9, 15504), (11, 15567), (13, 15645), (Start: 24 @15768 has 41 MA's), (Start: 27 @15783 has 4 MA's), (29, 15804), (44, 15912), (54, 15981), (65, 16041), (67, 16047), (76, 16080), (77, 16086), (81, 16101), (85, 16125), (95, 16191),

Gene: Suzy_31 Start: 28673, Stop: 29122, Start Num: 28

Candidate Starts for Suzy_31:

(Start: 28 @28673 has 1 MA's), (71, 28955), (80, 28991), (93, 29066), (95, 29084),

Gene: SwainyDoc_18 Start: 15001, Stop: 15462, Start Num: 24

Candidate Starts for SwainyDoc_18:

(9, 14737), (11, 14800), (13, 14878), (Start: 24 @15001 has 41 MA's), (Start: 27 @15016 has 4 MA's), (29, 15037), (44, 15145), (54, 15214), (65, 15274), (67, 15280), (76, 15313), (77, 15319), (81, 15334), (85, 15358), (95, 15424),

Gene: SynergyX_18 Start: 15004, Stop: 15465, Start Num: 24

Candidate Starts for SynergyX_18:

(9, 14740), (11, 14803), (13, 14881), (Start: 24 @15004 has 41 MA's), (Start: 27 @15019 has 4 MA's), (29, 15040), (44, 15148), (54, 15217), (65, 15277), (67, 15283), (76, 15316), (77, 15322), (81, 15337), (85, 15361), (95, 15427),

Gene: TA17A_18 Start: 16136, Stop: 16678, Start Num: 14

Candidate Starts for TA17A_18:

(Start: 14 @16136 has 31 MA's), (16, 16169), (23, 16229), (Start: 26 @16232 has 9 MA's), (36, 16316), (52, 16415), (53, 16442), (58, 16457), (61, 16475), (66, 16508), (69, 16520), (76, 16544), (77, 16550), (82, 16571), (83, 16574), (87, 16610), (88, 16613), (94, 16640),

Gene: Taptic_12 Start: 13847, Stop: 14464, Start Num: 15

Candidate Starts for Taptic_12:

(Start: 15 @13847 has 3 MA's), (17, 13880), (Start: 26 @13943 has 9 MA's), (29, 13979), (37, 14039), (52, 14126), (54, 14156), (65, 14216), (67, 14222), (68, 14225), (76, 14255), (77, 14261), (86, 14309), (87, 14321), (99, 14402), (101, 14420), (102, 14429),

Gene: Tinciduntolum_19 Start: 16255, Stop: 16797, Start Num: 14

Candidate Starts for Tinciduntolum_19:

(Start: 14 @16255 has 31 MA's), (16, 16288), (Start: 26 @16351 has 9 MA's), (36, 16435), (52, 16534), (53, 16561), (58, 16576), (61, 16594), (66, 16627), (69, 16639), (76, 16663), (77, 16669), (82, 16690), (83, 16693), (87, 16729), (88, 16732), (94, 16759),

Gene: TinyTerror_18 Start: 15003, Stop: 15464, Start Num: 24

Candidate Starts for TinyTerror_18:

(9, 14739), (11, 14802), (13, 14880), (Start: 24 @15003 has 41 MA's), (Start: 27 @15018 has 4 MA's), (29, 15039), (44, 15147), (54, 15216), (65, 15276), (67, 15282), (76, 15315), (77, 15321), (81, 15336), (85, 15360), (95, 15426),

Gene: Tres_18 Start: 16136, Stop: 16678, Start Num: 14

Candidate Starts for Tres_18:

(Start: 14 @16136 has 31 MA's), (16, 16169), (Start: 26 @16232 has 9 MA's), (36, 16316), (52, 16415), (53, 16442), (58, 16457), (61, 16475), (66, 16508), (69, 16520), (76, 16544), (77, 16550), (82, 16571), (83, 16574), (87, 16610), (88, 16613), (94, 16640),

Gene: Tydolla_18 Start: 15741, Stop: 16202, Start Num: 24

Candidate Starts for Tydolla_18:

(9, 15477), (11, 15540), (13, 15618), (Start: 24 @15741 has 41 MA's), (Start: 27 @15756 has 4 MA's), (29, 15777), (44, 15885), (54, 15954), (65, 16014), (67, 16020), (76, 16053), (77, 16059), (81, 16074), (85, 16098), (95, 16164),

Gene: Vic9_00018 Start: 16672, Stop: 17118, Start Num: 26

Candidate Starts for Vic9_00018:

(Start: 14 @16576 has 31 MA's), (16, 16609), (23, 16669), (Start: 26 @16672 has 9 MA's), (36, 16756), (52, 16855), (53, 16882), (58, 16897), (59, 16903), (61, 16915), (66, 16948), (69, 16960), (76, 16984), (77, 16990), (82, 17011), (83, 17014), (87, 17050), (88, 17053), (94, 17080),

Gene: West99_18 Start: 16256, Stop: 16798, Start Num: 14

Candidate Starts for West99_18:

(Start: 14 @16256 has 31 MA's), (16, 16289), (Start: 26 @16352 has 9 MA's), (36, 16436), (52, 16535), (53, 16562), (58, 16577), (61, 16595), (66, 16628), (69, 16640), (76, 16664), (77, 16670), (82, 16691), (83, 16694), (87, 16730), (88, 16733), (94, 16760),

Gene: Wooper_17 Start: 14767, Stop: 15261, Start Num: 19

Candidate Starts for Wooper_17:

(9, 14536), (11, 14599), (13, 14677), (Start: 19 @14767 has 8 MA's), (34, 14839), (36, 14851), (40, 14884), (47, 14941), (53, 15001), (73, 15094), (77, 15109), (78, 15112), (84, 15145), (96, 15223), (98, 15250),

Gene: Yahalom_18 Start: 15015, Stop: 15476, Start Num: 24

Candidate Starts for Yahalom_18:

(1, 14403), (2, 14442), (4, 14598), (6, 14637), (9, 14751), (11, 14814), (13, 14892), (Start: 24 @15015 has 41 MA's), (Start: 27 @15030 has 4 MA's), (29, 15051), (44, 15159), (54, 15228), (65, 15288), (67, 15294), (76, 15327), (77, 15333), (81, 15348), (85, 15372), (95, 15438),

Gene: Yeshua_17 Start: 14744, Stop: 15238, Start Num: 19

Candidate Starts for Yeshua_17:

(9, 14513), (11, 14576), (13, 14654), (Start: 19 @14744 has 8 MA's), (34, 14816), (36, 14828), (37, 14840), (40, 14861), (47, 14918), (53, 14978), (65, 15041), (72, 15068), (77, 15086), (78, 15089), (80, 15098), (84, 15122), (96, 15200), (98, 15227),

Gene: Yinz_18 Start: 15042, Stop: 15503, Start Num: 24

Candidate Starts for Yinz_18:

(9, 14778), (11, 14841), (13, 14919), (Start: 24 @15042 has 41 MA's), (Start: 27 @15057 has 4 MA's), (29, 15078), (44, 15186), (53, 15252), (54, 15255), (65, 15315), (67, 15321), (76, 15354), (77, 15360), (85, 15399), (95, 15465),

Gene: Zenteno07_20 Start: 14497, Stop: 14952, Start Num: 25

Candidate Starts for Zenteno07_20:

(Start: 25 @14497 has 2 MA's), (31, 14545), (36, 14581), (59, 14728), (66, 14773), (76, 14809), (77, 14815), (79, 14821), (83, 14839), (90, 14893), (91, 14899), (95, 14923),