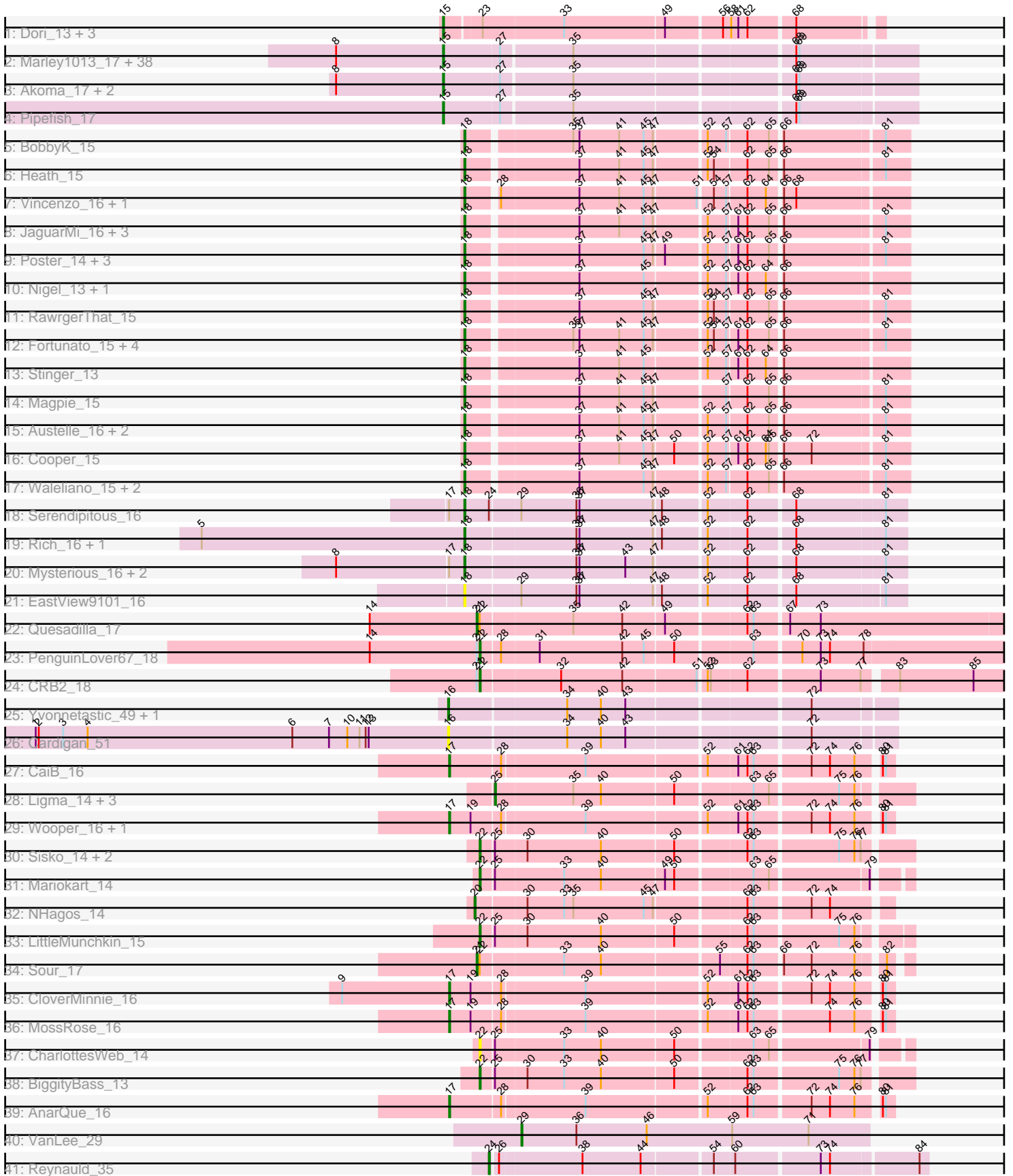


Pham 171326



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 171326 Report

This analysis was run 07/10/24 on database version 566.

Pham number 171326 has 110 members, 12 are drafts.

Phages represented in each track:

- Track 1 : Dori_13, Mask_13, Sejanus_13, Mao1_12
- Track 2 : Marley1013_17, OrangeOswald_17, Gervas_17, Philly_16, MmasiCarm_17, Jackstina_16, Neos5_17, Phlyer_17, Yinz_17, Phayeta_17, SynergyX_17, LestyG_17, Corofin_17, Briakila_17, Compostia_18, Heathcliff_17, Rita1961_17, GlenHope_18, Chandler_17, RagingRooster_17, Baloo_17, Abinghost_17, Gadjet_18, Morty007_17, Deenasa_17, Audrey_17, Kronus_16, Devonte_17, Mortcellus_16, Halfpint_16, Obutu_17, Daisy_17, Athena_18, Casbah_16, RomaT_17, Kamiyu_17, Nozo_17, Tydolla_17, ChaChing_17
- Track 3 : Akoma_17, Yahalom_17, Bernardo_17
- Track 4 : Pipefish_17
- Track 5 : BobbyK_15
- Track 6 : Heath_15
- Track 7 : Vincenzo_16, AlanGrant_16
- Track 8 : JaguarMi_16, Mithril_15, Lolalove_15, BrownCNA_16
- Track 9 : Poster_14, ChrisnMich_14, Nanao_14, Ahwei_14
- Track 10 : Nigel_13, JAMaL_15
- Track 11 : RawrgerThat_15
- Track 12 : Fortunato_15, Apex_15, Prince_16, Mudslide_15, Frederick_15
- Track 13 : Stinger_13
- Track 14 : Magpie_15
- Track 15 : Austelle_16, Hydro_15, Hangman_15
- Track 16 : Cooper_15
- Track 17 : Waleliano_15, Zemanar_16, VioletZ_15
- Track 18 : Serendipitous_16
- Track 19 : Rich_16, Bae_16
- Track 20 : Mysterious_16, Phelemich_16, Reprobate_16
- Track 21 : EastView9101_16
- Track 22 : Quesadilla_17
- Track 23 : PenguinLover67_18
- Track 24 : CRB2_18
- Track 25 : Yvonnetastic_49, JonJames_51
- Track 26 : Cardigan_51
- Track 27 : CaiB_16
- Track 28 : Ligma_14, Axumite_14, Shatter_14, Fresco_14
- Track 29 : Wooper_16, MakoManhole_16
- Track 30 : Sisko_14, Yago84_14, AnClar_14
- Track 31 : Mariokart_14

- Track 32 : NHagos_14
- Track 33 : LittleMunchkin_15
- Track 34 : Sour_17
- Track 35 : CloverMinnie_16
- Track 36 : MossRose_16
- Track 37 : CharlottesWeb_14
- Track 38 : BiggityBass_13
- Track 39 : AnarQue_16
- Track 40 : VanLee_29
- Track 41 : Reynauld_35

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

The start number called the most often in the published annotations is 15, it was called in 46 of the 98 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abinghost_17, Akoma_17, Athena_18, Audrey_17, Baloo_17, Bernardo_17, Briakila_17, Casbah_16, ChaChing_17, Chandler_17, Compostia_18, Corofin_17, Daisy_17, Deenasa_17, Devonte_17, Dori_13, Gadget_18, Gervas_17, GlenHope_18, Halfpint_16, Heathcliff_17, Jackstina_16, Kamiyu_17, Kronus_16, LestyG_17, Mao1_12, Marley1013_17, Mask_13, MmasiCarm_17, Mortcellus_16, Morty007_17, Neos5_17, Nozo_17, Obutu_17, OrangeOswald_17, Phayeta_17, Philly_16, Phlyer_17, Pipefish_17, RagingRooster_17, Rita1961_17, RomaT_17, Sejanus_13, SynergyX_17, Tydolla_17, Yahalom_17, Yinz_17,

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

-

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

- Ahwei_14, AlanGrant_16, AnClar_14, AnarQue_16, Apex_15, Austelle_16, Axumite_14, Bae_16, BiggityBass_13, BobbyK_15, BrownCNA_16, CRB2_18, CaiB_16, Cardigan_51, CharlottesWeb_14, ChrisnMich_14, CloverMinnie_16, Cooper_15, EastView9101_16, Fortunato_15, Frederick_15, Fresco_14, Hangman_15, Heath_15, Hydro_15, JAMaL_15, JaguarMi_16, JonJames_51, Ligma_14, LittleMunchkin_15, Lolalove_15, Magpie_15, MakoManhole_16, Mariokart_14, Mithril_15, MossRose_16, Mudslide_15, Mysterious_16, NHagos_14, Nanao_14, Nigel_13, PenguinLover67_18, Phelemich_16, Poster_14, Prince_16, Quesadilla_17, RawrgerThat_15, Reprobate_16, Reynauld_35, Rich_16, Serendipitous_16, Shatter_14, Sisko_14, Sour_17, Stinger_13, VanLee_29, Vincenzo_16, VioletZ_15, Waleliano_15, Wooper_16, Yago84_14, Yvonnetastic_49, Zemanar_16,

Summary by start number:

Start 15:

- Found in 47 of 110 (42.7%) of genes in pham
- Manual Annotations of this start: 46 of 98
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Abinghost_17 (B3), Akoma_17 (B3), Athena_18 (B3), Audrey_17 (B3), Baloo_17 (B3), Bernardo_17 (B3), Briakila_17 (B3), Casbah_16 (B3), ChaChing_17 (B3), Chandler_17 (B3), Compostia_18 (B3), Corofin_17 (B3), Daisy_17 (B3), Deenasa_17 (B3), Devonte_17 (B3), Dori_13 (AD), Gadget_18 (B3), Gervas_17 (B3), GlenHope_18 (B3), Halfpint_16 (B3), Heathcliff_17 (B3), Jackstina_16 (B3), Kamiyu_17 (B3), Kronus_16 (B3), LestyG_17 (B3), Mao1_12 (AD), Marley1013_17 (B3), Mask_13 (AD), MmasiCarm_17 (B3), Mortcellus_16 (B3), Morty007_17 (B3), Neos5_17 (B3), Nozo_17 (B3), Obutu_17 (B3), OrangeOswald_17 (B3), Phayeta_17 (B3), Philly_16 (B3), Phlyer_17 (B3), Pipefish_17 (B3), RagingRooster_17 (B3), Rita1961_17 (B3), RomaT_17 (B3), Sejanus_13 (AD), SynergyX_17 (B3), Tydolla_17 (B3), Yahalom_17 (B3), Yinz_17 (B3),

Start 16:

- Found in 3 of 110 (2.7%) of genes in pham
- Manual Annotations of this start: 2 of 98
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cardigan_51 (DD), JonJames_51 (DD), Yvonnestic_49 (DD),

Start 17:

- Found in 10 of 110 (9.1%) of genes in pham
- Manual Annotations of this start: 5 of 98
- Called 60.0% of time when present
- Phage (with cluster) where this start called: AnarQue_16 (DR), CaiB_16 (DR), CloverMinnie_16 (DR), MakoManhole_16 (DR), MossRose_16 (DR), Wooper_16 (DR),

Start 18:

- Found in 36 of 110 (32.7%) of genes in pham
- Manual Annotations of this start: 28 of 98
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ahwei_14 (B4), AlanGrant_16 (B4), Apex_15 (B4), Austelle_16 (B4), Bae_16 (B5), BobbyK_15 (B4), BrownCNA_16 (B4), ChrisMich_14 (B4), Cooper_15 (B4), EastView9101_16 (B5), Fortunato_15 (B4), Frederick_15 (B4), Hangman_15 (B4), Heath_15 (B4), Hydro_15 (B4), JAMaL_15 (B4), JaguarMi_16 (B4), Lolalove_15 (B4), Maggie_15 (B4), Mithril_15 (B4), Mudslide_15 (B4), Mysterious_16 (B5), Nanao_14 (B4), Nigel_13 (B4), Phelemich_16 (B5), Poster_14 (B4), Prince_16 (B4), RawrgerThat_15 (B4), Reprobate_16 (B5), Rich_16 (B5), Serendipitous_16 (B5), Stinger_13 (B4), Vincenzo_16 (B4), VioletZ_15 (B4), Waleliano_15 (B4), Zemanar_16 (B4),

Start 20:

- Found in 1 of 110 (0.9%) of genes in pham
- Manual Annotations of this start: 1 of 98
- Called 100.0% of time when present
- Phage (with cluster) where this start called: NHagos_14 (DR),

Start 21:

- Found in 4 of 110 (3.6%) of genes in pham
- Manual Annotations of this start: 2 of 98
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Quesadilla_17 (B9), Sour_17 (DR),

Start 22:

- Found in 11 of 110 (10.0%) of genes in pham
- Manual Annotations of this start: 8 of 98
- Called 81.8% of time when present
- Phage (with cluster) where this start called: AnClar_14 (DR), BiggityBass_13 (DR), CRB2_18 (B9), CharlottesWeb_14 (DR), LittleMunchkin_15 (DR), Mariokart_14 (DR), PenguinLover67_18 (B9), Sisko_14 (DR), Yago84_14 (DR),

Start 24:

- Found in 2 of 110 (1.8%) of genes in pham
- Manual Annotations of this start: 1 of 98
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Reynauld_35 (singleton),

Start 25:

- Found in 11 of 110 (10.0%) of genes in pham
- Manual Annotations of this start: 4 of 98
- Called 36.4% of time when present
- Phage (with cluster) where this start called: Axumite_14 (DR), Fresco_14 (DR), Ligma_14 (DR), Shatter_14 (DR),

Start 29:

- Found in 3 of 110 (2.7%) of genes in pham
- Manual Annotations of this start: 1 of 98
- Called 33.3% of time when present
- Phage (with cluster) where this start called: VanLee_29 (singleton),

Summary by clusters:

There are 8 clusters represented in this pham: singleton, AD, DD, B4, B5, B3, DR, B9,

Info for manual annotations of cluster AD:

- Start number 15 was manually annotated 4 times for cluster AD.

Info for manual annotations of cluster B3:

- Start number 15 was manually annotated 42 times for cluster B3.

Info for manual annotations of cluster B4:

- Start number 18 was manually annotated 23 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 18 was manually annotated 5 times for cluster B5.

Info for manual annotations of cluster B9:

- Start number 21 was manually annotated 1 time for cluster B9.
- Start number 22 was manually annotated 2 times for cluster B9.

Info for manual annotations of cluster DD:

- Start number 16 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DR:

- Start number 17 was manually annotated 5 times for cluster DR.
- Start number 20 was manually annotated 1 time for cluster DR.
- Start number 21 was manually annotated 1 time for cluster DR.
- Start number 22 was manually annotated 6 times for cluster DR.
- Start number 25 was manually annotated 4 times for cluster DR.

Gene Information:

Gene: Abinghost_17 Start: 14566, Stop: 15000, Start Num: 15

Candidate Starts for Abinghost_17:

(8, 14461), (Start: 15 @14566 has 46 MA's), (27, 14620), (35, 14686), (68, 14887), (69, 14890),

Gene: Ahwei_14 Start: 13912, Stop: 14313, Start Num: 18

Candidate Starts for Ahwei_14:

(Start: 18 @13912 has 28 MA's), (37, 14014), (45, 14077), (47, 14086), (49, 14095), (52, 14131), (57, 14149), (61, 14158), (62, 14167), (65, 14188), (66, 14197), (81, 14290),

Gene: Akoma_17 Start: 14566, Stop: 15000, Start Num: 15

Candidate Starts for Akoma_17:

(8, 14461), (Start: 15 @14566 has 46 MA's), (27, 14620), (35, 14686), (68, 14887), (69, 14890),

Gene: AlanGrant_16 Start: 15755, Stop: 16156, Start Num: 18

Candidate Starts for AlanGrant_16:

(Start: 18 @15755 has 28 MA's), (28, 15782), (37, 15857), (41, 15896), (45, 15920), (47, 15929), (51, 15968), (54, 15980), (57, 15992), (62, 16010), (64, 16028), (66, 16040), (68, 16052),

Gene: AnClar_14 Start: 13769, Stop: 14164, Start Num: 22

Candidate Starts for AnClar_14:

(Start: 22 @13769 has 8 MA's), (Start: 25 @13781 has 4 MA's), (30, 13811), (40, 13883), (50, 13952), (62, 14015), (63, 14021), (75, 14099), (76, 14114), (77, 14120),

Gene: AnarQue_16 Start: 14378, Stop: 14779, Start Num: 17

Candidate Starts for AnarQue_16:

(Start: 17 @14378 has 5 MA's), (28, 14426), (39, 14504), (52, 14615), (62, 14651), (63, 14657), (72, 14708), (74, 14726), (76, 14750), (80, 14768), (81, 14771),

Gene: Apex_15 Start: 15157, Stop: 15558, Start Num: 18

Candidate Starts for Apex_15:

(Start: 18 @15157 has 28 MA's), (35, 15253), (37, 15259), (41, 15298), (45, 15322), (47, 15331), (52, 15376), (54, 15382), (57, 15394), (61, 15403), (62, 15412), (65, 15433), (66, 15442), (81, 15535),

Gene: Athena_18 Start: 15329, Stop: 15763, Start Num: 15

Candidate Starts for Athena_18:

(8, 15224), (Start: 15 @15329 has 46 MA's), (27, 15383), (35, 15449), (68, 15650), (69, 15653),

Gene: Audrey_17 Start: 14566, Stop: 15000, Start Num: 15

Candidate Starts for Audrey_17:

(8, 14461), (Start: 15 @14566 has 46 MA's), (27, 14620), (35, 14686), (68, 14887), (69, 14890),

Gene: Austelle_16 Start: 15613, Stop: 16014, Start Num: 18

Candidate Starts for Austelle_16:

(Start: 18 @15613 has 28 MA's), (37, 15715), (41, 15754), (45, 15778), (47, 15787), (52, 15832), (57, 15850), (62, 15868), (65, 15889), (66, 15898), (81, 15991),

Gene: Axumite_14 Start: 12949, Stop: 13329, Start Num: 25

Candidate Starts for Axumite_14:

(Start: 25 @12949 has 4 MA's), (35, 13024), (40, 13051), (50, 13120), (63, 13189), (65, 13204), (75, 13267), (76, 13282),

Gene: Bae_16 Start: 14990, Stop: 15397, Start Num: 18

Candidate Starts for Bae_16:

(5, 14732), (Start: 18 @14990 has 28 MA's), (36, 15095), (37, 15098), (47, 15170), (48, 15176), (52, 15215), (62, 15251), (68, 15293), (81, 15377),

Gene: Baloo_17 Start: 14566, Stop: 14997, Start Num: 15

Candidate Starts for Baloo_17:

(8, 14461), (Start: 15 @14566 has 46 MA's), (27, 14620), (35, 14686), (68, 14887), (69, 14890),

Gene: Bernardo_17 Start: 14565, Stop: 14999, Start Num: 15

Candidate Starts for Bernardo_17:

(8, 14460), (Start: 15 @14565 has 46 MA's), (27, 14619), (35, 14685), (68, 14886), (69, 14889),

Gene: BiggityBass_13 Start: 12863, Stop: 13258, Start Num: 22

Candidate Starts for BiggityBass_13:

(Start: 22 @12863 has 8 MA's), (Start: 25 @12875 has 4 MA's), (30, 12905), (33, 12941), (40, 12977), (50, 13046), (62, 13109), (63, 13115), (75, 13193), (76, 13208), (77, 13214),

Gene: BobbyK_15 Start: 14976, Stop: 15377, Start Num: 18

Candidate Starts for BobbyK_15:

(Start: 18 @14976 has 28 MA's), (35, 15072), (37, 15078), (41, 15117), (45, 15141), (47, 15150), (52, 15195), (57, 15213), (62, 15231), (65, 15252), (66, 15261), (81, 15354),

Gene: Briakila_17 Start: 15331, Stop: 15765, Start Num: 15

Candidate Starts for Briakila_17:

(8, 15226), (Start: 15 @15331 has 46 MA's), (27, 15385), (35, 15451), (68, 15652), (69, 15655),

Gene: BrownCNA_16 Start: 15230, Stop: 15631, Start Num: 18

Candidate Starts for BrownCNA_16:

(Start: 18 @15230 has 28 MA's), (37, 15332), (41, 15371), (45, 15395), (47, 15404), (52, 15449), (57, 15467), (61, 15476), (62, 15485), (65, 15506), (66, 15515), (81, 15608),

Gene: CRB2_18 Start: 16038, Stop: 16547, Start Num: 22

Candidate Starts for CRB2_18:

(Start: 21 @16035 has 2 MA's), (Start: 22 @16038 has 8 MA's), (32, 16113), (42, 16173), (51, 16242), (52, 16248), (53, 16251), (62, 16284), (73, 16350), (77, 16389), (83, 16416), (85, 16488),

Gene: CaiB_16 Start: 14363, Stop: 14764, Start Num: 17

Candidate Starts for CaiB_16:

(Start: 17 @14363 has 5 MA's), (28, 14411), (39, 14489), (52, 14600), (61, 14627), (62, 14636), (63, 14642), (72, 14693), (74, 14711), (76, 14735), (80, 14753), (81, 14756),

Gene: Cardigan_51 Start: 36197, Stop: 36607, Start Num: 16

Candidate Starts for Cardigan_51:

(1, 35792), (2, 35795), (3, 35819), (4, 35843), (6, 36044), (7, 36080), (10, 36098), (11, 36110), (12, 36116), (13, 36119), (Start: 16 @36197 has 2 MA's), (34, 36308), (40, 36341), (43, 36365), (72, 36530),

Gene: Casbah_16 Start: 14418, Stop: 14852, Start Num: 15

Candidate Starts for Casbah_16:

(8, 14313), (Start: 15 @14418 has 46 MA's), (27, 14472), (35, 14538), (68, 14739), (69, 14742),

Gene: ChaChing_17 Start: 14581, Stop: 14964, Start Num: 15

Candidate Starts for ChaChing_17:

(8, 14476), (Start: 15 @14581 has 46 MA's), (27, 14635), (35, 14701), (68, 14902), (69, 14905),

Gene: Chandler_17 Start: 15340, Stop: 15774, Start Num: 15

Candidate Starts for Chandler_17:

(8, 15235), (Start: 15 @15340 has 46 MA's), (27, 15394), (35, 15460), (68, 15661), (69, 15664),

Gene: CharlottesWeb_14 Start: 12853, Stop: 13239, Start Num: 22

Candidate Starts for CharlottesWeb_14:

(Start: 22 @12853 has 8 MA's), (Start: 25 @12865 has 4 MA's), (33, 12931), (40, 12967), (50, 13036), (63, 13105), (65, 13120), (79, 13210),

Gene: ChrisnMich_14 Start: 13912, Stop: 14313, Start Num: 18

Candidate Starts for ChrisnMich_14:

(Start: 18 @13912 has 28 MA's), (37, 14014), (45, 14077), (47, 14086), (49, 14095), (52, 14131), (57, 14149), (61, 14158), (62, 14167), (65, 14188), (66, 14197), (81, 14290),

Gene: CloverMinnie_16 Start: 14303, Stop: 14704, Start Num: 17

Candidate Starts for CloverMinnie_16:

(9, 14198), (Start: 17 @14303 has 5 MA's), (19, 14324), (28, 14351), (39, 14429), (52, 14540), (61, 14567), (62, 14576), (63, 14582), (72, 14633), (74, 14651), (76, 14675), (80, 14693), (81, 14696),

Gene: Compostia_18 Start: 14999, Stop: 15433, Start Num: 15

Candidate Starts for Compostia_18:

(8, 14894), (Start: 15 @14999 has 46 MA's), (27, 15053), (35, 15119), (68, 15320), (69, 15323),

Gene: Cooper_15 Start: 14020, Stop: 14421, Start Num: 18

Candidate Starts for Cooper_15:

(Start: 18 @14020 has 28 MA's), (37, 14122), (41, 14161), (45, 14185), (47, 14194), (50, 14212), (52, 14239), (57, 14257), (61, 14266), (62, 14275), (64, 14293), (65, 14296), (66, 14305), (72, 14332), (81, 14398),

Gene: Corofin_17 Start: 14591, Stop: 15025, Start Num: 15

Candidate Starts for Corofin_17:

(8, 14486), (Start: 15 @14591 has 46 MA's), (27, 14645), (35, 14711), (68, 14912), (69, 14915),

Gene: Daisy_17 Start: 14587, Stop: 15021, Start Num: 15

Candidate Starts for Daisy_17:

(8, 14482), (Start: 15 @14587 has 46 MA's), (27, 14641), (35, 14707), (68, 14908), (69, 14911),

Gene: Deenasa_17 Start: 15329, Stop: 15763, Start Num: 15

Candidate Starts for Deenasa_17:

(8, 15224), (Start: 15 @15329 has 46 MA's), (27, 15383), (35, 15449), (68, 15650), (69, 15653),

Gene: Devonte_17 Start: 14566, Stop: 15000, Start Num: 15

Candidate Starts for Devonte_17:

(8, 14461), (Start: 15 @14566 has 46 MA's), (27, 14620), (35, 14686), (68, 14887), (69, 14890),

Gene: Dori_13 Start: 11588, Stop: 11983, Start Num: 15

Candidate Starts for Dori_13:

(Start: 15 @11588 has 46 MA's), (23, 11621), (33, 11699), (49, 11795), (56, 11846), (58, 11852), (61, 11858), (62, 11867), (68, 11909),

Gene: EastView9101_16 Start: 14852, Stop: 15256, Start Num: 18

Candidate Starts for EastView9101_16:

(Start: 18 @14852 has 28 MA's), (Start: 29 @14903 has 1 MA's), (36, 14957), (37, 14960), (47, 15032), (48, 15038), (52, 15077), (62, 15113), (68, 15155), (81, 15236),

Gene: Fortunato_15 Start: 14970, Stop: 15371, Start Num: 18

Candidate Starts for Fortunato_15:

(Start: 18 @14970 has 28 MA's), (35, 15066), (37, 15072), (41, 15111), (45, 15135), (47, 15144), (52, 15189), (54, 15195), (57, 15207), (61, 15216), (62, 15225), (65, 15246), (66, 15255), (81, 15348),

Gene: Frederick_15 Start: 14979, Stop: 15380, Start Num: 18

Candidate Starts for Frederick_15:

(Start: 18 @14979 has 28 MA's), (35, 15075), (37, 15081), (41, 15120), (45, 15144), (47, 15153), (52, 15198), (54, 15204), (57, 15216), (61, 15225), (62, 15234), (65, 15255), (66, 15264), (81, 15357),

Gene: Fresco_14 Start: 12949, Stop: 13329, Start Num: 25

Candidate Starts for Fresco_14:

(Start: 25 @12949 has 4 MA's), (35, 13024), (40, 13051), (50, 13120), (63, 13189), (65, 13204), (75, 13267), (76, 13282),

Gene: Gadget_18 Start: 14570, Stop: 15004, Start Num: 15

Candidate Starts for Gadget_18:

(8, 14465), (Start: 15 @14570 has 46 MA's), (27, 14624), (35, 14690), (68, 14891), (69, 14894),

Gene: Gervas_17 Start: 14549, Stop: 14983, Start Num: 15

Candidate Starts for Gervas_17:

(8, 14444), (Start: 15 @14549 has 46 MA's), (27, 14603), (35, 14669), (68, 14870), (69, 14873),

Gene: GlenHope_18 Start: 14556, Stop: 14990, Start Num: 15

Candidate Starts for GlenHope_18:

(8, 14451), (Start: 15 @14556 has 46 MA's), (27, 14610), (35, 14676), (68, 14877), (69, 14880),

Gene: Halfpint_16 Start: 14391, Stop: 14825, Start Num: 15

Candidate Starts for Halfpint_16:

(8, 14286), (Start: 15 @14391 has 46 MA's), (27, 14445), (35, 14511), (68, 14712), (69, 14715),

Gene: Hangman_15 Start: 14979, Stop: 15380, Start Num: 18

Candidate Starts for Hangman_15:

(Start: 18 @14979 has 28 MA's), (37, 15081), (41, 15120), (45, 15144), (47, 15153), (52, 15198), (57, 15216), (62, 15234), (65, 15255), (66, 15264), (81, 15357),

Gene: Heath_15 Start: 14976, Stop: 15377, Start Num: 18

Candidate Starts for Heath_15:

(Start: 18 @14976 has 28 MA's), (37, 15078), (41, 15117), (45, 15141), (47, 15150), (52, 15195), (54, 15201), (62, 15231), (65, 15252), (66, 15261), (81, 15354),

Gene: Heathcliff_17 Start: 14528, Stop: 14962, Start Num: 15

Candidate Starts for Heathcliff_17:

(8, 14423), (Start: 15 @14528 has 46 MA's), (27, 14582), (35, 14648), (68, 14849), (69, 14852),

Gene: Hydro_15 Start: 14976, Stop: 15377, Start Num: 18

Candidate Starts for Hydro_15:

(Start: 18 @14976 has 28 MA's), (37, 15078), (41, 15117), (45, 15141), (47, 15150), (52, 15195), (57, 15213), (62, 15231), (65, 15252), (66, 15261), (81, 15354),

Gene: JAMaL_15 Start: 15160, Stop: 15561, Start Num: 18

Candidate Starts for JAMaL_15:

(Start: 18 @15160 has 28 MA's), (37, 15262), (45, 15325), (52, 15379), (57, 15397), (61, 15406), (62, 15415), (64, 15433), (66, 15445),

Gene: Jackstina_16 Start: 14492, Stop: 14926, Start Num: 15

Candidate Starts for Jackstina_16:

(8, 14387), (Start: 15 @14492 has 46 MA's), (27, 14546), (35, 14612), (68, 14813), (69, 14816),

Gene: JaguarMi_16 Start: 14806, Stop: 15207, Start Num: 18

Candidate Starts for JaguarMi_16:

(Start: 18 @14806 has 28 MA's), (37, 14908), (41, 14947), (45, 14971), (47, 14980), (52, 15025), (57, 15043), (61, 15052), (62, 15061), (65, 15082), (66, 15091), (81, 15184),

Gene: JonJames_51 Start: 37099, Stop: 37509, Start Num: 16

Candidate Starts for JonJames_51:

(Start: 16 @37099 has 2 MA's), (34, 37210), (40, 37243), (43, 37267), (72, 37432),

Gene: Kamiyu_17 Start: 14537, Stop: 14971, Start Num: 15

Candidate Starts for Kamiyu_17:

(8, 14432), (Start: 15 @14537 has 46 MA's), (27, 14591), (35, 14657), (68, 14858), (69, 14861),

Gene: Kronus_16 Start: 15149, Stop: 15583, Start Num: 15

Candidate Starts for Kronus_16:

(8, 15044), (Start: 15 @15149 has 46 MA's), (27, 15203), (35, 15269), (68, 15470), (69, 15473),

Gene: LestyG_17 Start: 14570, Stop: 15004, Start Num: 15

Candidate Starts for LestyG_17:

(8, 14465), (Start: 15 @14570 has 46 MA's), (27, 14624), (35, 14690), (68, 14891), (69, 14894),

Gene: Ligma_14 Start: 12949, Stop: 13329, Start Num: 25

Candidate Starts for Ligma_14:

(Start: 25 @12949 has 4 MA's), (35, 13024), (40, 13051), (50, 13120), (63, 13189), (65, 13204), (75, 13267), (76, 13282),

Gene: LittleMunchkin_15 Start: 14381, Stop: 14770, Start Num: 22

Candidate Starts for LittleMunchkin_15:

(Start: 22 @14381 has 8 MA's), (Start: 25 @14393 has 4 MA's), (30, 14423), (40, 14495), (50, 14564), (62, 14627), (63, 14633), (75, 14711), (76, 14726),

Gene: Lolalove_15 Start: 14976, Stop: 15377, Start Num: 18

Candidate Starts for Lolalove_15:

(Start: 18 @14976 has 28 MA's), (37, 15078), (41, 15117), (45, 15141), (47, 15150), (52, 15195), (57, 15213), (61, 15222), (62, 15231), (65, 15252), (66, 15261), (81, 15354),

Gene: Magpie_15 Start: 15161, Stop: 15562, Start Num: 18

Candidate Starts for Magpie_15:

(Start: 18 @15161 has 28 MA's), (37, 15263), (41, 15302), (45, 15326), (47, 15335), (57, 15398), (62, 15416), (65, 15437), (66, 15446), (81, 15539),

Gene: MakoManhole_16 Start: 14381, Stop: 14782, Start Num: 17

Candidate Starts for MakoManhole_16:

(Start: 17 @14381 has 5 MA's), (19, 14402), (28, 14429), (39, 14507), (52, 14618), (61, 14645), (62, 14654), (63, 14660), (72, 14711), (74, 14729), (76, 14753), (80, 14771), (81, 14774),

Gene: Mao1_12 Start: 11984, Stop: 12379, Start Num: 15

Candidate Starts for Mao1_12:

(Start: 15 @11984 has 46 MA's), (23, 12017), (33, 12095), (49, 12191), (56, 12242), (58, 12248), (61, 12254), (62, 12263), (68, 12305),

Gene: Mariokart_14 Start: 12852, Stop: 13238, Start Num: 22

Candidate Starts for Mariokart_14:

(Start: 22 @12852 has 8 MA's), (Start: 25 @12864 has 4 MA's), (33, 12930), (40, 12966), (49, 13026), (50, 13035), (63, 13104), (65, 13119), (79, 13209),

Gene: Marley1013_17 Start: 15350, Stop: 15784, Start Num: 15

Candidate Starts for Marley1013_17:

(8, 15245), (Start: 15 @15350 has 46 MA's), (27, 15404), (35, 15470), (68, 15671), (69, 15674),

Gene: Mask_13 Start: 11985, Stop: 12380, Start Num: 15

Candidate Starts for Mask_13:

(Start: 15 @11985 has 46 MA's), (23, 12018), (33, 12096), (49, 12192), (56, 12243), (58, 12249), (61, 12255), (62, 12264), (68, 12306),

Gene: Mithril_15 Start: 14979, Stop: 15380, Start Num: 18

Candidate Starts for Mithril_15:

(Start: 18 @14979 has 28 MA's), (37, 15081), (41, 15120), (45, 15144), (47, 15153), (52, 15198), (57, 15216), (61, 15225), (62, 15234), (65, 15255), (66, 15264), (81, 15357),

Gene: MmasiCarm_17 Start: 14563, Stop: 14997, Start Num: 15

Candidate Starts for MmasiCarm_17:

(8, 14458), (Start: 15 @14563 has 46 MA's), (27, 14617), (35, 14683), (68, 14884), (69, 14887),

Gene: Mortcellus_16 Start: 15204, Stop: 15638, Start Num: 15

Candidate Starts for Mortcellus_16:

(8, 15099), (Start: 15 @15204 has 46 MA's), (27, 15258), (35, 15324), (68, 15525), (69, 15528),

Gene: Morty007_17 Start: 15350, Stop: 15784, Start Num: 15

Candidate Starts for Morty007_17:

(8, 15245), (Start: 15 @15350 has 46 MA's), (27, 15404), (35, 15470), (68, 15671), (69, 15674),

Gene: MossRose_16 Start: 14360, Stop: 14761, Start Num: 17

Candidate Starts for MossRose_16:

(Start: 17 @14360 has 5 MA's), (19, 14381), (28, 14408), (39, 14486), (52, 14597), (61, 14624), (62, 14633), (63, 14639), (74, 14708), (76, 14732), (80, 14750), (81, 14753),

Gene: Mudslide_15 Start: 15224, Stop: 15625, Start Num: 18

Candidate Starts for Mudslide_15:

(Start: 18 @15224 has 28 MA's), (35, 15320), (37, 15326), (41, 15365), (45, 15389), (47, 15398), (52, 15443), (54, 15449), (57, 15461), (61, 15470), (62, 15479), (65, 15500), (66, 15509), (81, 15602),

Gene: Mysterious_16 Start: 15087, Stop: 15494, Start Num: 18

Candidate Starts for Mysterious_16:

(8, 14964), (Start: 17 @15072 has 5 MA's), (Start: 18 @15087 has 28 MA's), (36, 15192), (37, 15195), (43, 15240), (47, 15267), (52, 15312), (62, 15348), (68, 15390), (81, 15474),

Gene: NHagos_14 Start: 12851, Stop: 13228, Start Num: 20

Candidate Starts for NHagos_14:

(Start: 20 @12851 has 1 MA's), (30, 12896), (33, 12932), (35, 12941), (45, 13010), (47, 13019), (62, 13100), (63, 13106), (72, 13157), (74, 13175),

Gene: Nanao_14 Start: 13912, Stop: 14313, Start Num: 18

Candidate Starts for Nanao_14:

(Start: 18 @13912 has 28 MA's), (37, 14014), (45, 14077), (47, 14086), (49, 14095), (52, 14131), (57, 14149), (61, 14158), (62, 14167), (65, 14188), (66, 14197), (81, 14290),

Gene: Neos5_17 Start: 15356, Stop: 15790, Start Num: 15

Candidate Starts for Neos5_17:

(8, 15251), (Start: 15 @15356 has 46 MA's), (27, 15410), (35, 15476), (68, 15677), (69, 15680),

Gene: Nigel_13 Start: 13828, Stop: 14229, Start Num: 18

Candidate Starts for Nigel_13:

(Start: 18 @13828 has 28 MA's), (37, 13930), (45, 13993), (52, 14047), (57, 14065), (61, 14074), (62, 14083), (64, 14101), (66, 14113),

Gene: Nozo_17 Start: 15331, Stop: 15762, Start Num: 15

Candidate Starts for Nozo_17:

(8, 15226), (Start: 15 @15331 has 46 MA's), (27, 15385), (35, 15451), (68, 15652), (69, 15655),

Gene: Obutu_17 Start: 14561, Stop: 14995, Start Num: 15

Candidate Starts for Obutu_17:

(8, 14456), (Start: 15 @14561 has 46 MA's), (27, 14615), (35, 14681), (68, 14882), (69, 14885),

Gene: OrangeOswald_17 Start: 14566, Stop: 15000, Start Num: 15

Candidate Starts for OrangeOswald_17:

(8, 14461), (Start: 15 @14566 has 46 MA's), (27, 14620), (35, 14686), (68, 14887), (69, 14890),

Gene: PenguinLover67_18 Start: 16012, Stop: 16536, Start Num: 22

Candidate Starts for PenguinLover67_18:

(14, 15904), (Start: 21 @16009 has 2 MA's), (Start: 22 @16012 has 8 MA's), (28, 16030), (31, 16066), (42, 16147), (45, 16168), (50, 16195), (63, 16264), (70, 16306), (73, 16324), (74, 16333), (78, 16366),

Gene: Phayeta_17 Start: 14442, Stop: 14876, Start Num: 15

Candidate Starts for Phayeta_17:

(8, 14337), (Start: 15 @14442 has 46 MA's), (27, 14496), (35, 14562), (68, 14763), (69, 14766),

Gene: Phelemich_16 Start: 15091, Stop: 15498, Start Num: 18

Candidate Starts for Phelemich_16:

(8, 14968), (Start: 17 @15076 has 5 MA's), (Start: 18 @15091 has 28 MA's), (36, 15196), (37, 15199), (43, 15244), (47, 15271), (52, 15316), (62, 15352), (68, 15394), (81, 15478),

Gene: Philly_16 Start: 14432, Stop: 14866, Start Num: 15

Candidate Starts for Philly_16:

(8, 14327), (Start: 15 @14432 has 46 MA's), (27, 14486), (35, 14552), (68, 14753), (69, 14756),

Gene: Phlyer_17 Start: 15300, Stop: 15734, Start Num: 15

Candidate Starts for Phlyer_17:

(8, 15195), (Start: 15 @15300 has 46 MA's), (27, 15354), (35, 15420), (68, 15621), (69, 15624),

Gene: Pipefish_17 Start: 15450, Stop: 15884, Start Num: 15

Candidate Starts for Pipefish_17:

(Start: 15 @15450 has 46 MA's), (27, 15504), (35, 15570), (68, 15771), (69, 15774),

Gene: Poster_14 Start: 13912, Stop: 14313, Start Num: 18

Candidate Starts for Poster_14:

(Start: 18 @13912 has 28 MA's), (37, 14014), (45, 14077), (47, 14086), (49, 14095), (52, 14131), (57, 14149), (61, 14158), (62, 14167), (65, 14188), (66, 14197), (81, 14290),

Gene: Prince_16 Start: 15136, Stop: 15537, Start Num: 18

Candidate Starts for Prince_16:

(Start: 18 @15136 has 28 MA's), (35, 15232), (37, 15238), (41, 15277), (45, 15301), (47, 15310), (52, 15355), (54, 15361), (57, 15373), (61, 15382), (62, 15391), (65, 15412), (66, 15421), (81, 15514),

Gene: Quesadilla_17 Start: 15843, Stop: 16370, Start Num: 21

Candidate Starts for Quesadilla_17:

(14, 15738), (Start: 21 @15843 has 2 MA's), (Start: 22 @15846 has 8 MA's), (35, 15933), (42, 15981), (49, 16020), (62, 16092), (63, 16098), (67, 16128), (73, 16158),

Gene: RagingRooster_17 Start: 14567, Stop: 15001, Start Num: 15

Candidate Starts for RagingRooster_17:

(8, 14462), (Start: 15 @14567 has 46 MA's), (27, 14621), (35, 14687), (68, 14888), (69, 14891),

Gene: RawrgerThat_15 Start: 14973, Stop: 15374, Start Num: 18

Candidate Starts for RawrgerThat_15:

(Start: 18 @14973 has 28 MA's), (37, 15075), (45, 15138), (47, 15147), (52, 15192), (54, 15198), (57, 15210), (62, 15228), (65, 15249), (66, 15258), (81, 15351),

Gene: Reprobate_16 Start: 15088, Stop: 15495, Start Num: 18

Candidate Starts for Reprobate_16:

(8, 14965), (Start: 17 @15073 has 5 MA's), (Start: 18 @15088 has 28 MA's), (36, 15193), (37, 15196), (43, 15241), (47, 15268), (52, 15313), (62, 15349), (68, 15391), (81, 15475),

Gene: Reynauld_35 Start: 36999, Stop: 37397, Start Num: 24

Candidate Starts for Reynauld_35:

(Start: 24 @36999 has 1 MA's), (26, 37005), (38, 37083), (44, 37140), (54, 37203), (60, 37221), (73, 37299), (74, 37308), (84, 37389),

Gene: Rich_16 Start: 14987, Stop: 15394, Start Num: 18

Candidate Starts for Rich_16:

(5, 14729), (Start: 18 @14987 has 28 MA's), (36, 15092), (37, 15095), (47, 15167), (48, 15173), (52, 15212), (62, 15248), (68, 15290), (81, 15374),

Gene: Rita1961_17 Start: 14562, Stop: 14996, Start Num: 15

Candidate Starts for Rita1961_17:

(8, 14457), (Start: 15 @14562 has 46 MA's), (27, 14616), (35, 14682), (68, 14883), (69, 14886),

Gene: RomaT_17 Start: 15347, Stop: 15781, Start Num: 15

Candidate Starts for RomaT_17:

(8, 15242), (Start: 15 @15347 has 46 MA's), (27, 15401), (35, 15467), (68, 15668), (69, 15671),

Gene: Sejanus_13 Start: 12918, Stop: 13313, Start Num: 15

Candidate Starts for Sejanus_13:

(Start: 15 @12918 has 46 MA's), (23, 12951), (33, 13029), (49, 13125), (56, 13176), (58, 13182), (61, 13188), (62, 13197), (68, 13239),

Gene: Serendipitous_16 Start: 15034, Stop: 15441, Start Num: 18

Candidate Starts for Serendipitous_16:

(Start: 17 @15019 has 5 MA's), (Start: 18 @15034 has 28 MA's), (Start: 24 @15058 has 1 MA's), (Start: 29 @15085 has 1 MA's), (36, 15139), (37, 15142), (47, 15214), (48, 15220), (52, 15259), (62, 15295), (68, 15337), (81, 15421),

Gene: Shatter_14 Start: 12949, Stop: 13329, Start Num: 25

Candidate Starts for Shatter_14:

(Start: 25 @12949 has 4 MA's), (35, 13024), (40, 13051), (50, 13120), (63, 13189), (65, 13204), (75, 13267), (76, 13282),

Gene: Sisko_14 Start: 13277, Stop: 13672, Start Num: 22

Candidate Starts for Sisko_14:

(Start: 22 @13277 has 8 MA's), (Start: 25 @13289 has 4 MA's), (30, 13319), (40, 13391), (50, 13460), (62, 13523), (63, 13529), (75, 13607), (76, 13622), (77, 13628),

Gene: Sour_17 Start: 14711, Stop: 15097, Start Num: 21

Candidate Starts for Sour_17:

(Start: 21 @14711 has 2 MA's), (Start: 22 @14714 has 8 MA's), (33, 14792), (40, 14828), (55, 14936), (62, 14960), (63, 14966), (66, 14990), (72, 15017), (76, 15059), (82, 15080),

Gene: Stinger_13 Start: 13475, Stop: 13876, Start Num: 18

Candidate Starts for Stinger_13:

(Start: 18 @13475 has 28 MA's), (37, 13577), (41, 13616), (45, 13640), (52, 13694), (57, 13712), (61, 13721), (62, 13730), (64, 13748), (66, 13760),

Gene: SynergyX_17 Start: 14567, Stop: 15001, Start Num: 15

Candidate Starts for SynergyX_17:

(8, 14462), (Start: 15 @14567 has 46 MA's), (27, 14621), (35, 14687), (68, 14888), (69, 14891),

Gene: Tydolla_17 Start: 15304, Stop: 15738, Start Num: 15

Candidate Starts for Tydolla_17:

(8, 15199), (Start: 15 @15304 has 46 MA's), (27, 15358), (35, 15424), (68, 15625), (69, 15628),

Gene: VanLee_29 Start: 25243, Stop: 25584, Start Num: 29

Candidate Starts for VanLee_29:

(Start: 29 @25243 has 1 MA's), (36, 25297), (46, 25366), (59, 25450), (71, 25525),

Gene: Vincenzo_16 Start: 15755, Stop: 16156, Start Num: 18

Candidate Starts for Vincenzo_16:

(Start: 18 @15755 has 28 MA's), (28, 15782), (37, 15857), (41, 15896), (45, 15920), (47, 15929), (51, 15968), (54, 15980), (57, 15992), (62, 16010), (64, 16028), (66, 16040), (68, 16052),

Gene: VioletZ_15 Start: 15009, Stop: 15410, Start Num: 18

Candidate Starts for VioletZ_15:

(Start: 18 @15009 has 28 MA's), (37, 15111), (45, 15174), (47, 15183), (52, 15228), (57, 15246), (62, 15264), (65, 15285), (66, 15294), (81, 15387),

Gene: Waleliano_15 Start: 14979, Stop: 15380, Start Num: 18

Candidate Starts for Waleliano_15:

(Start: 18 @14979 has 28 MA's), (37, 15081), (45, 15144), (47, 15153), (52, 15198), (57, 15216), (62, 15234), (65, 15255), (66, 15264), (81, 15357),

Gene: Wooper_16 Start: 14369, Stop: 14770, Start Num: 17

Candidate Starts for Wooper_16:

(Start: 17 @14369 has 5 MA's), (19, 14390), (28, 14417), (39, 14495), (52, 14606), (61, 14633), (62, 14642), (63, 14648), (72, 14699), (74, 14717), (76, 14741), (80, 14759), (81, 14762),

Gene: Yago84_14 Start: 13286, Stop: 13681, Start Num: 22

Candidate Starts for Yago84_14:

(Start: 22 @13286 has 8 MA's), (Start: 25 @13298 has 4 MA's), (30, 13328), (40, 13400), (50, 13469), (62, 13532), (63, 13538), (75, 13616), (76, 13631), (77, 13637),

Gene: Yahalom_17 Start: 14578, Stop: 15012, Start Num: 15

Candidate Starts for Yahalom_17:

(8, 14473), (Start: 15 @14578 has 46 MA's), (27, 14632), (35, 14698), (68, 14899), (69, 14902),

Gene: Yinz_17 Start: 14605, Stop: 15039, Start Num: 15

Candidate Starts for Yinz_17:

(8, 14500), (Start: 15 @14605 has 46 MA's), (27, 14659), (35, 14725), (68, 14926), (69, 14929),

Gene: Yvonnetastic_49 Start: 34634, Stop: 35044, Start Num: 16

Candidate Starts for Yvonnetastic_49:

(Start: 16 @34634 has 2 MA's), (34, 34745), (40, 34778), (43, 34802), (72, 34967),

Gene: Zemanar_16 Start: 14979, Stop: 15380, Start Num: 18

Candidate Starts for Zemanar_16:

(Start: 18 @14979 has 28 MA's), (37, 15081), (45, 15144), (47, 15153), (52, 15198), (57, 15216), (62, 15234), (65, 15255), (66, 15264), (81, 15357),