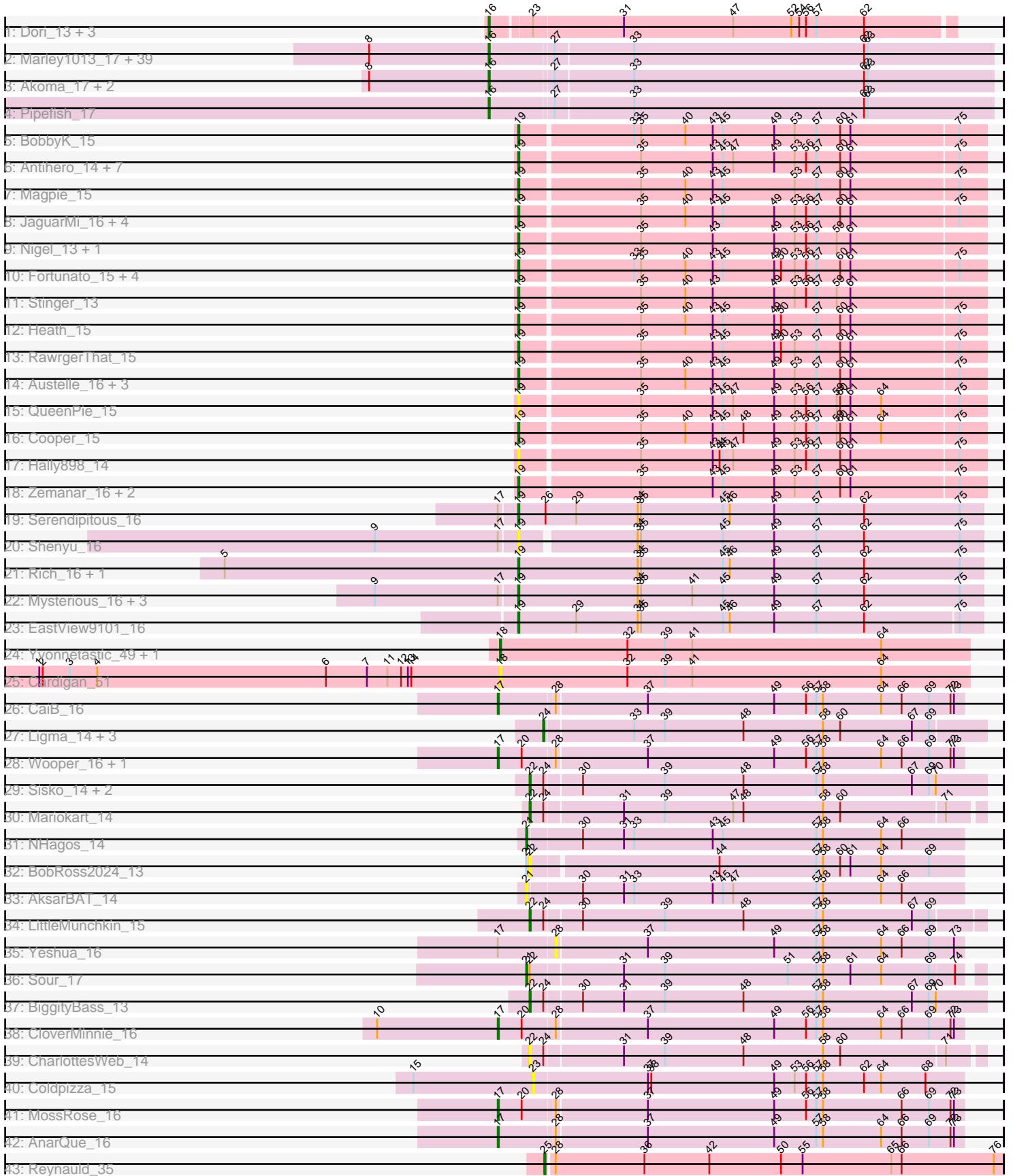


Pham 224413



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 224413 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224413 has 119 members, 22 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, Chalmers\_17, Yinz\_17, Tydolla\_17, SynergyX\_17, LestyG\_17, Corofin\_17, Briakila\_17, Morty007\_17, Compostia\_18, Heathcliff\_17, Rita1961\_17, GlenHope\_18, Chandler\_17, Baloo\_17, Abinghost\_17, Gadget\_18, Deenasa\_17, Audrey\_17, Kronus\_16, Devonte\_17, Mortcellus\_16, Halfpint\_16, Obutu\_17, Phayeta\_17, Daisy\_17, Athena\_18, Casbah\_16, RomaT\_17, RagingRooster\_17, Phlyer\_17, Kamiyu\_17, Nozo\_17, ChaChing\_17
- Track 3 : Akoma\_17, Bernardo\_17, Yahalom\_17
- Track 4 : Pipefish\_17
- Track 5 : BobbyK\_15
- Track 6 : Antihero\_14, Poster\_14, Lambano\_14, ChrisnMich\_14, Epah\_14, GinPorsche\_14, Nanao\_14, Ahwei\_14
- Track 7 : Magpie\_15
- Track 8 : JaguarMi\_16, Xincheng\_15, Mithril\_15, Lolalove\_15, BrownCNA\_16
- Track 9 : Nigel\_13, JAMaL\_15
- Track 10 : Fortunato\_15, Apex\_15, Prince\_15, Mudslide\_15, Frederick\_15
- Track 11 : Stinger\_13
- Track 12 : Heath\_15
- Track 13 : RawrgerThat\_15
- Track 14 : Austelle\_16, Hydro\_15, Hangman\_15, Fanaw\_15
- Track 15 : QueenPie\_15
- Track 16 : Cooper\_15
- Track 17 : Hally898\_14
- Track 18 : Zemanar\_16, Waleliano\_15, VioletZ\_15
- Track 19 : Serendipitous\_16
- Track 20 : Shenyu\_16
- Track 21 : Rich\_16, Bae\_16
- Track 22 : Mysterious\_16, Phelemich\_16, Nehemiah\_15, Reprobate\_16
- Track 23 : EastView9101\_16
- Track 24 : Yvonnetastic\_49, JonJames\_51
- Track 25 : Cardigan\_51
- Track 26 : CaiB\_16
- Track 27 : Ligma\_14, Shatter\_14, Fresco\_14, Axumite\_14
- Track 28 : Wooper\_16, MakoManhole\_16
- Track 29 : Sisko\_14, Yago84\_14, AnClar\_14
- Track 30 : Mariokart\_14

- Track 31 : NHagos\_14
- Track 32 : BobRoss2024\_13
- Track 33 : AksarBAT\_14
- Track 34 : LittleMunchkin\_15
- Track 35 : Yeshua\_16
- Track 36 : Sour\_17
- Track 37 : BiggityBass\_13
- Track 38 : CloverMinnie\_16
- Track 39 : CharlottesWeb\_14
- Track 40 : Coldpizza\_15
- Track 41 : MossRose\_16
- Track 42 : AnarQue\_16
- Track 43 : 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 16, it was called in 47 of the 97 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, Chalmers\_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, AksarBAT\_14, AnClar\_14, AnarQue\_16, Antihero\_14, Apex\_15, Austelle\_16, Axumite\_14, Bae\_16, BiggityBass\_13, BobRoss2024\_13, BobbyK\_15, BrownCNA\_16, CaiB\_16, Cardigan\_51, CharlottesWeb\_14, ChrisnMich\_14, CloverMinnie\_16, Coldpizza\_15, Cooper\_15, EastView9101\_16, Epah\_14, Fanaw\_15, Fortunato\_15, Frederick\_15, Fresco\_14, GinPorsche\_14, Hally898\_14, Hangman\_15, Heath\_15, Hydro\_15, JAMaL\_15, JaguarMi\_16, JonJames\_51, Lambano\_14, Ligma\_14, LittleMunchkin\_15, Lolalove\_15, Magpie\_15, MakoManhole\_16, Mariokart\_14, Mithril\_15, MossRose\_16, Mudslide\_15, Mysterious\_16, NHagos\_14, Nanao\_14, Nehemiah\_15, Nigel\_13, Phelemich\_16, Poster\_14, Prince\_15, QueenPie\_15, RawrgerThat\_15, Reprobate\_16, Reynauld\_35, Rich\_16, Serendipitous\_16, Shatter\_14, Shenyu\_16, Sisko\_14, Sour\_17, Stinger\_13, VioletZ\_15, Waleliano\_15, Wooper\_16, Xincheng\_15, Yago84\_14, Yeshua\_16, Yvonnestic\_49, Zemanar\_16,

**Summary by start number:**

Start 16:

- Found in 48 of 119 ( 40.3% ) of genes in pham
- Manual Annotations of this start: 47 of 97
- 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), Chalmers\_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 17:

- Found in 13 of 119 ( 10.9% ) of genes in pham
- Manual Annotations of this start: 6 of 97
- Called 46.2% 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 3 of 119 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 2 of 97
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cardigan\_51 (DD), JonJames\_51 (DD), Yvonnestic\_49 (DD),

#### Start 19:

- Found in 44 of 119 ( 37.0% ) of genes in pham
- Manual Annotations of this start: 29 of 97
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ahwei\_14 (B4), Antihero\_14 (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), Epah\_14 (B4), Fanaw\_15 (B4), Fortunato\_15 (B4), Frederick\_15 (B4), GinPorsche\_14 (B4), Hally898\_14 (B4), Hangman\_15 (B4), Heath\_15 (B4), Hydro\_15 (B4), JAMaL\_15 (B4), JaguarMi\_16 (B4), Lambano\_14 (B4), Lolalove\_15 (B4), Magpie\_15 (B4), Mithril\_15 (B4), Mudslide\_15 (B4), Mysterious\_16 (B5), Nanao\_14 (B4), Nehemiah\_15 (B5), Nigel\_13 (B4), Phelemich\_16 (B5), Poster\_14 (B4), Prince\_15 (B4), QueenPie\_15 (B4), RawrgerThat\_15 (B4), Reprobate\_16 (B5), Rich\_16 (B5), Serendipitous\_16 (B5), Shenyu\_16 (B5), Stinger\_13 (B4), VioletZ\_15 (B4), Waleliano\_15 (B4), Xincheng\_15 (B4), Zemanar\_16 (B4),

#### Start 21:

- Found in 4 of 119 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 2 of 97
- Called 75.0% of time when present
- Phage (with cluster) where this start called: AksarBAT\_14 (DR), NHagos\_14 (DR), Sour\_17 (DR),

Start 22:

- Found in 9 of 119 ( 7.6% ) of genes in pham
- Manual Annotations of this start: 6 of 97
- Called 88.9% of time when present
- Phage (with cluster) where this start called: AnClar\_14 (DR), BiggityBass\_13 (DR), BobRoss2024\_13 (DR), CharlottesWeb\_14 (DR), LittleMunchkin\_15 (DR), Mariokart\_14 (DR), Sisko\_14 (DR), Yago84\_14 (DR),

Start 23:

- Found in 5 of 119 ( 4.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Coldpizza\_15 (DR),

Start 24:

- Found in 11 of 119 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 4 of 97
- 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 25:

- Found in 1 of 119 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 97
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Reynauld\_35 (singleton),

Start 28:

- Found in 8 of 119 ( 6.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Yeshua\_16 (DR),

**Summary by clusters:**

There are 7 clusters represented in this pham: singleton, AD, DD, B4, B5, B3, DR,

Info for manual annotations of cluster AD:

- Start number 16 was manually annotated 4 times for cluster AD.

Info for manual annotations of cluster B3:

- Start number 16 was manually annotated 43 times for cluster B3.

Info for manual annotations of cluster B4:

- Start number 19 was manually annotated 23 times for cluster B4.

Info for manual annotations of cluster B5:

- Start number 19 was manually annotated 6 times for cluster B5.

Info for manual annotations of cluster DD:

- Start number 18 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DR:

- Start number 17 was manually annotated 6 times for cluster DR.
- Start number 21 was manually annotated 2 times for cluster DR.
- Start number 22 was manually annotated 6 times for cluster DR.
- Start number 24 was manually annotated 4 times for cluster DR.

**Gene Information:**

Gene: Abinghost\_17 Start: 14566, Stop: 15000, Start Num: 16

Candidate Starts for Abinghost\_17:

(8, 14461), (Start: 16 @14566 has 47 MA's), (27, 14620), (33, 14686), (62, 14887), (63, 14890),

Gene: Ahwei\_14 Start: 13912, Stop: 14313, Start Num: 19

Candidate Starts for Ahwei\_14:

(Start: 19 @13912 has 29 MA's), (35, 14014), (43, 14077), (45, 14086), (47, 14095), (49, 14131), (53, 14149), (56, 14158), (57, 14167), (60, 14188), (61, 14197), (75, 14290),

Gene: Akoma\_17 Start: 14566, Stop: 15000, Start Num: 16

Candidate Starts for Akoma\_17:

(8, 14461), (Start: 16 @14566 has 47 MA's), (27, 14620), (33, 14686), (62, 14887), (63, 14890),

Gene: AksarBAT\_14 Start: 12848, Stop: 13225, Start Num: 21

Candidate Starts for AksarBAT\_14:

(Start: 21 @12848 has 2 MA's), (30, 12893), (31, 12929), (33, 12938), (43, 13007), (45, 13016), (47, 13025), (57, 13097), (58, 13103), (64, 13154), (66, 13172),

Gene: AnClar\_14 Start: 13769, Stop: 14164, Start Num: 22

Candidate Starts for AnClar\_14:

(Start: 22 @13769 has 6 MA's), (Start: 24 @13781 has 4 MA's), (30, 13811), (39, 13883), (48, 13952), (57, 14015), (58, 14021), (67, 14099), (69, 14114), (70, 14120),

Gene: AnarQue\_16 Start: 14378, Stop: 14779, Start Num: 17

Candidate Starts for AnarQue\_16:

(Start: 17 @14378 has 6 MA's), (28, 14426), (37, 14504), (49, 14615), (57, 14651), (58, 14657), (64, 14708), (66, 14726), (69, 14750), (72, 14768), (73, 14771),

Gene: Antihero\_14 Start: 13912, Stop: 14313, Start Num: 19

Candidate Starts for Antihero\_14:

(Start: 19 @13912 has 29 MA's), (35, 14014), (43, 14077), (45, 14086), (47, 14095), (49, 14131), (53, 14149), (56, 14158), (57, 14167), (60, 14188), (61, 14197), (75, 14290),

Gene: Apex\_15 Start: 15157, Stop: 15558, Start Num: 19

Candidate Starts for Apex\_15:

(Start: 19 @15157 has 29 MA's), (33, 15253), (35, 15259), (40, 15298), (43, 15322), (45, 15331), (49, 15376), (50, 15382), (53, 15394), (56, 15403), (57, 15412), (60, 15433), (61, 15442), (75, 15535),

Gene: Athena\_18 Start: 15329, Stop: 15763, Start Num: 16

Candidate Starts for Athena\_18:

(8, 15224), (Start: 16 @15329 has 47 MA's), (27, 15383), (33, 15449), (62, 15650), (63, 15653),

Gene: Audrey\_17 Start: 14566, Stop: 15000, Start Num: 16

Candidate Starts for Audrey\_17:

(8, 14461), (Start: 16 @14566 has 47 MA's), (27, 14620), (33, 14686), (62, 14887), (63, 14890),

Gene: Austelle\_16 Start: 15613, Stop: 16014, Start Num: 19

Candidate Starts for Austelle\_16:

(Start: 19 @15613 has 29 MA's), (35, 15715), (40, 15754), (43, 15778), (45, 15787), (49, 15832), (53, 15850), (57, 15868), (60, 15889), (61, 15898), (75, 15991),

Gene: Axumite\_14 Start: 12949, Stop: 13329, Start Num: 24

Candidate Starts for Axumite\_14:

(Start: 24 @12949 has 4 MA's), (33, 13024), (39, 13051), (48, 13120), (58, 13189), (60, 13204), (67, 13267), (69, 13282),

Gene: Bae\_16 Start: 14990, Stop: 15397, Start Num: 19

Candidate Starts for Bae\_16:

(5, 14732), (Start: 19 @14990 has 29 MA's), (34, 15095), (35, 15098), (45, 15170), (46, 15176), (49, 15215), (57, 15251), (62, 15293), (75, 15377),

Gene: Baloo\_17 Start: 14566, Stop: 14997, Start Num: 16

Candidate Starts for Baloo\_17:

(8, 14461), (Start: 16 @14566 has 47 MA's), (27, 14620), (33, 14686), (62, 14887), (63, 14890),

Gene: Bernardo\_17 Start: 14565, Stop: 14999, Start Num: 16

Candidate Starts for Bernardo\_17:

(8, 14460), (Start: 16 @14565 has 47 MA's), (27, 14619), (33, 14685), (62, 14886), (63, 14889),

Gene: BiggityBass\_13 Start: 12863, Stop: 13258, Start Num: 22

Candidate Starts for BiggityBass\_13:

(Start: 22 @12863 has 6 MA's), (Start: 24 @12875 has 4 MA's), (30, 12905), (31, 12941), (39, 12977), (48, 13046), (57, 13109), (58, 13115), (67, 13193), (69, 13208), (70, 13214),

Gene: BobRoss2024\_13 Start: 12784, Stop: 13155, Start Num: 22

Candidate Starts for BobRoss2024\_13:

(Start: 21 @12781 has 2 MA's), (Start: 22 @12784 has 6 MA's), (44, 12943), (57, 13027), (58, 13033), (60, 13048), (61, 13057), (64, 13084), (69, 13126),

Gene: BobbyK\_15 Start: 14976, Stop: 15377, Start Num: 19

Candidate Starts for BobbyK\_15:

(Start: 19 @14976 has 29 MA's), (33, 15072), (35, 15078), (40, 15117), (43, 15141), (45, 15150), (49, 15195), (53, 15213), (57, 15231), (60, 15252), (61, 15261), (75, 15354),

Gene: Briakila\_17 Start: 15331, Stop: 15765, Start Num: 16

Candidate Starts for Briakila\_17:

(8, 15226), (Start: 16 @15331 has 47 MA's), (27, 15385), (33, 15451), (62, 15652), (63, 15655),

Gene: BrownCNA\_16 Start: 15230, Stop: 15631, Start Num: 19

Candidate Starts for BrownCNA\_16:

(Start: 19 @15230 has 29 MA's), (35, 15332), (40, 15371), (43, 15395), (45, 15404), (49, 15449), (53, 15467), (56, 15476), (57, 15485), (60, 15506), (61, 15515), (75, 15608),

Gene: CaiB\_16 Start: 14363, Stop: 14764, Start Num: 17

Candidate Starts for CaiB\_16:

(Start: 17 @14363 has 6 MA's), (28, 14411), (37, 14489), (49, 14600), (56, 14627), (57, 14636), (58, 14642), (64, 14693), (66, 14711), (69, 14735), (72, 14753), (73, 14756),

Gene: Cardigan\_51 Start: 36197, Stop: 36607, Start Num: 18

Candidate Starts for Cardigan\_51:

(1, 35792), (2, 35795), (3, 35819), (4, 35843), (6, 36044), (7, 36080), (11, 36098), (12, 36110), (13, 36116), (14, 36119), (Start: 18 @36197 has 2 MA's), (32, 36308), (39, 36341), (41, 36365), (64, 36530),

Gene: Casbah\_16 Start: 14418, Stop: 14852, Start Num: 16

Candidate Starts for Casbah\_16:

(8, 14313), (Start: 16 @14418 has 47 MA's), (27, 14472), (33, 14538), (62, 14739), (63, 14742),

Gene: ChaChing\_17 Start: 14581, Stop: 14964, Start Num: 16

Candidate Starts for ChaChing\_17:

(8, 14476), (Start: 16 @14581 has 47 MA's), (27, 14635), (33, 14701), (62, 14902), (63, 14905),

Gene: Chalmers\_17 Start: 15374, Stop: 15808, Start Num: 16

Candidate Starts for Chalmers\_17:

(8, 15269), (Start: 16 @15374 has 47 MA's), (27, 15428), (33, 15494), (62, 15695), (63, 15698),

Gene: Chandler\_17 Start: 15340, Stop: 15774, Start Num: 16

Candidate Starts for Chandler\_17:

(8, 15235), (Start: 16 @15340 has 47 MA's), (27, 15394), (33, 15460), (62, 15661), (63, 15664),

Gene: CharlottesWeb\_14 Start: 12853, Stop: 13239, Start Num: 22

Candidate Starts for CharlottesWeb\_14:

(Start: 22 @12853 has 6 MA's), (Start: 24 @12865 has 4 MA's), (31, 12931), (39, 12967), (48, 13036), (58, 13105), (60, 13120), (71, 13210),

Gene: ChrisnMich\_14 Start: 13912, Stop: 14313, Start Num: 19

Candidate Starts for ChrisnMich\_14:

(Start: 19 @13912 has 29 MA's), (35, 14014), (43, 14077), (45, 14086), (47, 14095), (49, 14131), (53, 14149), (56, 14158), (57, 14167), (60, 14188), (61, 14197), (75, 14290),

Gene: CloverMinnie\_16 Start: 14303, Stop: 14704, Start Num: 17

Candidate Starts for CloverMinnie\_16:

(10, 14198), (Start: 17 @14303 has 6 MA's), (20, 14324), (28, 14351), (37, 14429), (49, 14540), (56, 14567), (57, 14576), (58, 14582), (64, 14633), (66, 14651), (69, 14675), (72, 14693), (73, 14696),

Gene: Coldpizza\_15 Start: 14928, Stop: 15302, Start Num: 23

Candidate Starts for Coldpizza\_15:

(15, 14823), (23, 14928), (37, 15027), (38, 15030), (49, 15138), (53, 15156), (56, 15165), (57, 15174), (58, 15180), (62, 15216), (64, 15231), (68, 15270),

Gene: Compostia\_18 Start: 14999, Stop: 15433, Start Num: 16

Candidate Starts for Compostia\_18:

(8, 14894), (Start: 16 @14999 has 47 MA's), (27, 15053), (33, 15119), (62, 15320), (63, 15323),

Gene: Cooper\_15 Start: 14020, Stop: 14421, Start Num: 19

Candidate Starts for Cooper\_15:

(Start: 19 @14020 has 29 MA's), (35, 14122), (40, 14161), (43, 14185), (45, 14194), (48, 14212), (49, 14239), (53, 14257), (56, 14266), (57, 14275), (59, 14293), (60, 14296), (61, 14305), (64, 14332), (75,



14398),

Gene: Corofin\_17 Start: 14591, Stop: 15025, Start Num: 16

Candidate Starts for Corofin\_17:

(8, 14486), (Start: 16 @14591 has 47 MA's), (27, 14645), (33, 14711), (62, 14912), (63, 14915),

Gene: Daisy\_17 Start: 14587, Stop: 15021, Start Num: 16

Candidate Starts for Daisy\_17:

(8, 14482), (Start: 16 @14587 has 47 MA's), (27, 14641), (33, 14707), (62, 14908), (63, 14911),

Gene: Deenasa\_17 Start: 15329, Stop: 15763, Start Num: 16

Candidate Starts for Deenasa\_17:

(8, 15224), (Start: 16 @15329 has 47 MA's), (27, 15383), (33, 15449), (62, 15650), (63, 15653),

Gene: Devonte\_17 Start: 14566, Stop: 15000, Start Num: 16

Candidate Starts for Devonte\_17:

(8, 14461), (Start: 16 @14566 has 47 MA's), (27, 14620), (33, 14686), (62, 14887), (63, 14890),

Gene: Dori\_13 Start: 11588, Stop: 11983, Start Num: 16

Candidate Starts for Dori\_13:

(Start: 16 @11588 has 47 MA's), (23, 11621), (31, 11699), (47, 11795), (52, 11846), (54, 11852), (56, 11858), (57, 11867), (62, 11909),

Gene: EastView9101\_16 Start: 14852, Stop: 15256, Start Num: 19

Candidate Starts for EastView9101\_16:

(Start: 19 @14852 has 29 MA's), (29, 14903), (34, 14957), (35, 14960), (45, 15032), (46, 15038), (49, 15077), (57, 15113), (62, 15155), (75, 15236),

Gene: Epah\_14 Start: 13912, Stop: 14313, Start Num: 19

Candidate Starts for Epah\_14:

(Start: 19 @13912 has 29 MA's), (35, 14014), (43, 14077), (45, 14086), (47, 14095), (49, 14131), (53, 14149), (56, 14158), (57, 14167), (60, 14188), (61, 14197), (75, 14290),

Gene: Fanaw\_15 Start: 15006, Stop: 15407, Start Num: 19

Candidate Starts for Fanaw\_15:

(Start: 19 @15006 has 29 MA's), (35, 15108), (40, 15147), (43, 15171), (45, 15180), (49, 15225), (53, 15243), (57, 15261), (60, 15282), (61, 15291), (75, 15384),

Gene: Fortunato\_15 Start: 14970, Stop: 15371, Start Num: 19

Candidate Starts for Fortunato\_15:

(Start: 19 @14970 has 29 MA's), (33, 15066), (35, 15072), (40, 15111), (43, 15135), (45, 15144), (49, 15189), (50, 15195), (53, 15207), (56, 15216), (57, 15225), (60, 15246), (61, 15255), (75, 15348),

Gene: Frederick\_15 Start: 14979, Stop: 15380, Start Num: 19

Candidate Starts for Frederick\_15:

(Start: 19 @14979 has 29 MA's), (33, 15075), (35, 15081), (40, 15120), (43, 15144), (45, 15153), (49, 15198), (50, 15204), (53, 15216), (56, 15225), (57, 15234), (60, 15255), (61, 15264), (75, 15357),

Gene: Fresco\_14 Start: 12949, Stop: 13329, Start Num: 24

Candidate Starts for Fresco\_14:

(Start: 24 @12949 has 4 MA's), (33, 13024), (39, 13051), (48, 13120), (58, 13189), (60, 13204), (67, 13267), (69, 13282),

Gene: Gadget\_18 Start: 14570, Stop: 15004, Start Num: 16  
Candidate Starts for Gadget\_18:  
(8, 14465), (Start: 16 @14570 has 47 MA's), (27, 14624), (33, 14690), (62, 14891), (63, 14894),

Gene: Gervas\_17 Start: 14549, Stop: 14983, Start Num: 16  
Candidate Starts for Gervas\_17:  
(8, 14444), (Start: 16 @14549 has 47 MA's), (27, 14603), (33, 14669), (62, 14870), (63, 14873),

Gene: GinPorsche\_14 Start: 13912, Stop: 14313, Start Num: 19  
Candidate Starts for GinPorsche\_14:  
(Start: 19 @13912 has 29 MA's), (35, 14014), (43, 14077), (45, 14086), (47, 14095), (49, 14131), (53, 14149), (56, 14158), (57, 14167), (60, 14188), (61, 14197), (75, 14290),

Gene: GlenHope\_18 Start: 14556, Stop: 14990, Start Num: 16  
Candidate Starts for GlenHope\_18:  
(8, 14451), (Start: 16 @14556 has 47 MA's), (27, 14610), (33, 14676), (62, 14877), (63, 14880),

Gene: Halfpint\_16 Start: 14391, Stop: 14825, Start Num: 16  
Candidate Starts for Halfpint\_16:  
(8, 14286), (Start: 16 @14391 has 47 MA's), (27, 14445), (33, 14511), (62, 14712), (63, 14715),

Gene: Hally898\_14 Start: 13912, Stop: 14313, Start Num: 19  
Candidate Starts for Hally898\_14:  
(Start: 19 @13912 has 29 MA's), (35, 14014), (43, 14077), (44, 14083), (45, 14086), (47, 14095), (49, 14131), (53, 14149), (56, 14158), (57, 14167), (60, 14188), (61, 14197), (75, 14290),

Gene: Hangman\_15 Start: 14979, Stop: 15380, Start Num: 19  
Candidate Starts for Hangman\_15:  
(Start: 19 @14979 has 29 MA's), (35, 15081), (40, 15120), (43, 15144), (45, 15153), (49, 15198), (53, 15216), (57, 15234), (60, 15255), (61, 15264), (75, 15357),

Gene: Heath\_15 Start: 14976, Stop: 15377, Start Num: 19  
Candidate Starts for Heath\_15:  
(Start: 19 @14976 has 29 MA's), (35, 15078), (40, 15117), (43, 15141), (45, 15150), (49, 15195), (50, 15201), (57, 15231), (60, 15252), (61, 15261), (75, 15354),

Gene: Heathcliff\_17 Start: 14528, Stop: 14962, Start Num: 16  
Candidate Starts for Heathcliff\_17:  
(8, 14423), (Start: 16 @14528 has 47 MA's), (27, 14582), (33, 14648), (62, 14849), (63, 14852),

Gene: Hydro\_15 Start: 14976, Stop: 15377, Start Num: 19  
Candidate Starts for Hydro\_15:  
(Start: 19 @14976 has 29 MA's), (35, 15078), (40, 15117), (43, 15141), (45, 15150), (49, 15195), (53, 15213), (57, 15231), (60, 15252), (61, 15261), (75, 15354),

Gene: JAMaL\_15 Start: 15160, Stop: 15561, Start Num: 19  
Candidate Starts for JAMaL\_15:  
(Start: 19 @15160 has 29 MA's), (35, 15262), (43, 15325), (49, 15379), (53, 15397), (56, 15406), (57, 15415), (59, 15433), (61, 15445),

Gene: Jackstina\_16 Start: 14492, Stop: 14926, Start Num: 16  
Candidate Starts for Jackstina\_16:  
(8, 14387), (Start: 16 @14492 has 47 MA's), (27, 14546), (33, 14612), (62, 14813), (63, 14816),

Gene: JaguarMi\_16 Start: 14806, Stop: 15207, Start Num: 19

Candidate Starts for JaguarMi\_16:

(Start: 19 @14806 has 29 MA's), (35, 14908), (40, 14947), (43, 14971), (45, 14980), (49, 15025), (53, 15043), (56, 15052), (57, 15061), (60, 15082), (61, 15091), (75, 15184),

Gene: JonJames\_51 Start: 37099, Stop: 37509, Start Num: 18

Candidate Starts for JonJames\_51:

(Start: 18 @37099 has 2 MA's), (32, 37210), (39, 37243), (41, 37267), (64, 37432),

Gene: Kamiyu\_17 Start: 14537, Stop: 14971, Start Num: 16

Candidate Starts for Kamiyu\_17:

(8, 14432), (Start: 16 @14537 has 47 MA's), (27, 14591), (33, 14657), (62, 14858), (63, 14861),

Gene: Kronus\_16 Start: 15149, Stop: 15583, Start Num: 16

Candidate Starts for Kronus\_16:

(8, 15044), (Start: 16 @15149 has 47 MA's), (27, 15203), (33, 15269), (62, 15470), (63, 15473),

Gene: Lambano\_14 Start: 13912, Stop: 14313, Start Num: 19

Candidate Starts for Lambano\_14:

(Start: 19 @13912 has 29 MA's), (35, 14014), (43, 14077), (45, 14086), (47, 14095), (49, 14131), (53, 14149), (56, 14158), (57, 14167), (60, 14188), (61, 14197), (75, 14290),

Gene: LestyG\_17 Start: 14570, Stop: 15004, Start Num: 16

Candidate Starts for LestyG\_17:

(8, 14465), (Start: 16 @14570 has 47 MA's), (27, 14624), (33, 14690), (62, 14891), (63, 14894),

Gene: Ligma\_14 Start: 12949, Stop: 13329, Start Num: 24

Candidate Starts for Ligma\_14:

(Start: 24 @12949 has 4 MA's), (33, 13024), (39, 13051), (48, 13120), (58, 13189), (60, 13204), (67, 13267), (69, 13282),

Gene: LittleMunchkin\_15 Start: 14381, Stop: 14770, Start Num: 22

Candidate Starts for LittleMunchkin\_15:

(Start: 22 @14381 has 6 MA's), (Start: 24 @14393 has 4 MA's), (30, 14423), (39, 14495), (48, 14564), (57, 14627), (58, 14633), (67, 14711), (69, 14726),

Gene: Lolalove\_15 Start: 14976, Stop: 15377, Start Num: 19

Candidate Starts for Lolalove\_15:

(Start: 19 @14976 has 29 MA's), (35, 15078), (40, 15117), (43, 15141), (45, 15150), (49, 15195), (53, 15213), (56, 15222), (57, 15231), (60, 15252), (61, 15261), (75, 15354),

Gene: Magpie\_15 Start: 15161, Stop: 15562, Start Num: 19

Candidate Starts for Magpie\_15:

(Start: 19 @15161 has 29 MA's), (35, 15263), (40, 15302), (43, 15326), (45, 15335), (53, 15398), (57, 15416), (60, 15437), (61, 15446), (75, 15539),

Gene: MakoManhole\_16 Start: 14381, Stop: 14782, Start Num: 17

Candidate Starts for MakoManhole\_16:

(Start: 17 @14381 has 6 MA's), (20, 14402), (28, 14429), (37, 14507), (49, 14618), (56, 14645), (57, 14654), (58, 14660), (64, 14711), (66, 14729), (69, 14753), (72, 14771), (73, 14774),

Gene: Mao1\_12 Start: 11984, Stop: 12379, Start Num: 16

Candidate Starts for Mao1\_12:

(Start: 16 @11984 has 47 MA's), (23, 12017), (31, 12095), (47, 12191), (52, 12242), (54, 12248), (56, 12254), (57, 12263), (62, 12305),

Gene: Mariokart\_14 Start: 12852, Stop: 13238, Start Num: 22

Candidate Starts for Mariokart\_14:

(Start: 22 @12852 has 6 MA's), (Start: 24 @12864 has 4 MA's), (31, 12930), (39, 12966), (47, 13026), (48, 13035), (58, 13104), (60, 13119), (71, 13209),

Gene: Marley1013\_17 Start: 15350, Stop: 15784, Start Num: 16

Candidate Starts for Marley1013\_17:

(8, 15245), (Start: 16 @15350 has 47 MA's), (27, 15404), (33, 15470), (62, 15671), (63, 15674),

Gene: Mask\_13 Start: 11985, Stop: 12380, Start Num: 16

Candidate Starts for Mask\_13:

(Start: 16 @11985 has 47 MA's), (23, 12018), (31, 12096), (47, 12192), (52, 12243), (54, 12249), (56, 12255), (57, 12264), (62, 12306),

Gene: Mithril\_15 Start: 14979, Stop: 15380, Start Num: 19

Candidate Starts for Mithril\_15:

(Start: 19 @14979 has 29 MA's), (35, 15081), (40, 15120), (43, 15144), (45, 15153), (49, 15198), (53, 15216), (56, 15225), (57, 15234), (60, 15255), (61, 15264), (75, 15357),

Gene: MmasiCarm\_17 Start: 14563, Stop: 14997, Start Num: 16

Candidate Starts for MmasiCarm\_17:

(8, 14458), (Start: 16 @14563 has 47 MA's), (27, 14617), (33, 14683), (62, 14884), (63, 14887),

Gene: Mortcellus\_16 Start: 15204, Stop: 15638, Start Num: 16

Candidate Starts for Mortcellus\_16:

(8, 15099), (Start: 16 @15204 has 47 MA's), (27, 15258), (33, 15324), (62, 15525), (63, 15528),

Gene: Morty007\_17 Start: 15350, Stop: 15784, Start Num: 16

Candidate Starts for Morty007\_17:

(8, 15245), (Start: 16 @15350 has 47 MA's), (27, 15404), (33, 15470), (62, 15671), (63, 15674),

Gene: MossRose\_16 Start: 14360, Stop: 14761, Start Num: 17

Candidate Starts for MossRose\_16:

(Start: 17 @14360 has 6 MA's), (20, 14381), (28, 14408), (37, 14486), (49, 14597), (56, 14624), (57, 14633), (58, 14639), (66, 14708), (69, 14732), (72, 14750), (73, 14753),

Gene: Mudslide\_15 Start: 15224, Stop: 15625, Start Num: 19

Candidate Starts for Mudslide\_15:

(Start: 19 @15224 has 29 MA's), (33, 15320), (35, 15326), (40, 15365), (43, 15389), (45, 15398), (49, 15443), (50, 15449), (53, 15461), (56, 15470), (57, 15479), (60, 15500), (61, 15509), (75, 15602),

Gene: Mysterious\_16 Start: 15087, Stop: 15494, Start Num: 19

Candidate Starts for Mysterious\_16:

(9, 14964), (Start: 17 @15072 has 6 MA's), (Start: 19 @15087 has 29 MA's), (34, 15192), (35, 15195), (41, 15240), (45, 15267), (49, 15312), (57, 15348), (62, 15390), (75, 15474),

Gene: NHagos\_14 Start: 12851, Stop: 13228, Start Num: 21

Candidate Starts for NHagos\_14:

(Start: 21 @12851 has 2 MA's), (30, 12896), (31, 12932), (33, 12941), (43, 13010), (45, 13019), (57, 13100), (58, 13106), (64, 13157), (66, 13175),

Gene: Nanao\_14 Start: 13912, Stop: 14313, Start Num: 19

Candidate Starts for Nanao\_14:

(Start: 19 @13912 has 29 MA's), (35, 14014), (43, 14077), (45, 14086), (47, 14095), (49, 14131), (53, 14149), (56, 14158), (57, 14167), (60, 14188), (61, 14197), (75, 14290),

Gene: Nehemiah\_15 Start: 15087, Stop: 15494, Start Num: 19

Candidate Starts for Nehemiah\_15:

(9, 14964), (Start: 17 @15072 has 6 MA's), (Start: 19 @15087 has 29 MA's), (34, 15192), (35, 15195), (41, 15240), (45, 15267), (49, 15312), (57, 15348), (62, 15390), (75, 15474),

Gene: Neos5\_17 Start: 15356, Stop: 15790, Start Num: 16

Candidate Starts for Neos5\_17:

(8, 15251), (Start: 16 @15356 has 47 MA's), (27, 15410), (33, 15476), (62, 15677), (63, 15680),

Gene: Nigel\_13 Start: 13828, Stop: 14229, Start Num: 19

Candidate Starts for Nigel\_13:

(Start: 19 @13828 has 29 MA's), (35, 13930), (43, 13993), (49, 14047), (53, 14065), (56, 14074), (57, 14083), (59, 14101), (61, 14113),

Gene: Nozo\_17 Start: 15331, Stop: 15762, Start Num: 16

Candidate Starts for Nozo\_17:

(8, 15226), (Start: 16 @15331 has 47 MA's), (27, 15385), (33, 15451), (62, 15652), (63, 15655),

Gene: Obutu\_17 Start: 14561, Stop: 14995, Start Num: 16

Candidate Starts for Obutu\_17:

(8, 14456), (Start: 16 @14561 has 47 MA's), (27, 14615), (33, 14681), (62, 14882), (63, 14885),

Gene: OrangeOswald\_17 Start: 14566, Stop: 15000, Start Num: 16

Candidate Starts for OrangeOswald\_17:

(8, 14461), (Start: 16 @14566 has 47 MA's), (27, 14620), (33, 14686), (62, 14887), (63, 14890),

Gene: Phayeta\_17 Start: 14442, Stop: 14876, Start Num: 16

Candidate Starts for Phayeta\_17:

(8, 14337), (Start: 16 @14442 has 47 MA's), (27, 14496), (33, 14562), (62, 14763), (63, 14766),

Gene: Phelemich\_16 Start: 15091, Stop: 15498, Start Num: 19

Candidate Starts for Phelemich\_16:

(9, 14968), (Start: 17 @15076 has 6 MA's), (Start: 19 @15091 has 29 MA's), (34, 15196), (35, 15199), (41, 15244), (45, 15271), (49, 15316), (57, 15352), (62, 15394), (75, 15478),

Gene: Philly\_16 Start: 14432, Stop: 14866, Start Num: 16

Candidate Starts for Philly\_16:

(8, 14327), (Start: 16 @14432 has 47 MA's), (27, 14486), (33, 14552), (62, 14753), (63, 14756),

Gene: Phlyer\_17 Start: 15300, Stop: 15734, Start Num: 16

Candidate Starts for Phlyer\_17:

(8, 15195), (Start: 16 @15300 has 47 MA's), (27, 15354), (33, 15420), (62, 15621), (63, 15624),

Gene: Pipefish\_17 Start: 15450, Stop: 15884, Start Num: 16

Candidate Starts for Pipefish\_17:

(Start: 16 @15450 has 47 MA's), (27, 15504), (33, 15570), (62, 15771), (63, 15774),

Gene: Poster\_14 Start: 13912, Stop: 14313, Start Num: 19

Candidate Starts for Poster\_14:

(Start: 19 @13912 has 29 MA's), (35, 14014), (43, 14077), (45, 14086), (47, 14095), (49, 14131), (53, 14149), (56, 14158), (57, 14167), (60, 14188), (61, 14197), (75, 14290),

Gene: Prince\_15 Start: 15136, Stop: 15537, Start Num: 19

Candidate Starts for Prince\_15:

(Start: 19 @15136 has 29 MA's), (33, 15232), (35, 15238), (40, 15277), (43, 15301), (45, 15310), (49, 15355), (50, 15361), (53, 15373), (56, 15382), (57, 15391), (60, 15412), (61, 15421), (75, 15514),

Gene: QueenPie\_15 Start: 15510, Stop: 15911, Start Num: 19

Candidate Starts for QueenPie\_15:

(Start: 19 @15510 has 29 MA's), (35, 15612), (43, 15675), (45, 15684), (47, 15693), (49, 15729), (53, 15747), (56, 15756), (57, 15765), (59, 15783), (60, 15786), (61, 15795), (64, 15822), (75, 15888),

Gene: RagingRooster\_17 Start: 14567, Stop: 15001, Start Num: 16

Candidate Starts for RagingRooster\_17:

(8, 14462), (Start: 16 @14567 has 47 MA's), (27, 14621), (33, 14687), (62, 14888), (63, 14891),

Gene: RawrgerThat\_15 Start: 14973, Stop: 15374, Start Num: 19

Candidate Starts for RawrgerThat\_15:

(Start: 19 @14973 has 29 MA's), (35, 15075), (43, 15138), (45, 15147), (49, 15192), (50, 15198), (53, 15210), (57, 15228), (60, 15249), (61, 15258), (75, 15351),

Gene: Reprobate\_16 Start: 15088, Stop: 15495, Start Num: 19

Candidate Starts for Reprobate\_16:

(9, 14965), (Start: 17 @15073 has 6 MA's), (Start: 19 @15088 has 29 MA's), (34, 15193), (35, 15196), (41, 15241), (45, 15268), (49, 15313), (57, 15349), (62, 15391), (75, 15475),

Gene: Reynauld\_35 Start: 36999, Stop: 37397, Start Num: 25

Candidate Starts for Reynauld\_35:

(Start: 25 @36999 has 1 MA's), (28, 37005), (36, 37083), (42, 37140), (50, 37203), (55, 37221), (65, 37299), (66, 37308), (76, 37389),

Gene: Rich\_16 Start: 14987, Stop: 15394, Start Num: 19

Candidate Starts for Rich\_16:

(5, 14729), (Start: 19 @14987 has 29 MA's), (34, 15092), (35, 15095), (45, 15167), (46, 15173), (49, 15212), (57, 15248), (62, 15290), (75, 15374),

Gene: Rita1961\_17 Start: 14562, Stop: 14996, Start Num: 16

Candidate Starts for Rita1961\_17:

(8, 14457), (Start: 16 @14562 has 47 MA's), (27, 14616), (33, 14682), (62, 14883), (63, 14886),

Gene: RomaT\_17 Start: 15347, Stop: 15781, Start Num: 16

Candidate Starts for RomaT\_17:

(8, 15242), (Start: 16 @15347 has 47 MA's), (27, 15401), (33, 15467), (62, 15668), (63, 15671),

Gene: Sejanus\_13 Start: 12918, Stop: 13313, Start Num: 16

Candidate Starts for Sejanus\_13:

(Start: 16 @12918 has 47 MA's), (23, 12951), (31, 13029), (47, 13125), (52, 13176), (54, 13182), (56, 13188), (57, 13197), (62, 13239),

Gene: Serendipitous\_16 Start: 15034, Stop: 15441, Start Num: 19

Candidate Starts for Serendipitous\_16:

(Start: 17 @15019 has 6 MA's), (Start: 19 @15034 has 29 MA's), (26, 15058), (29, 15085), (34, 15139), (35, 15142), (45, 15214), (46, 15220), (49, 15259), (57, 15295), (62, 15337), (75, 15421),

Gene: Shatter\_14 Start: 12949, Stop: 13329, Start Num: 24

Candidate Starts for Shatter\_14:

(Start: 24 @12949 has 4 MA's), (33, 13024), (39, 13051), (48, 13120), (58, 13189), (60, 13204), (67, 13267), (69, 13282),

Gene: Shenyu\_16 Start: 14829, Stop: 15227, Start Num: 19

Candidate Starts for Shenyu\_16:

(9, 14706), (Start: 17 @14814 has 6 MA's), (Start: 19 @14829 has 29 MA's), (34, 14925), (35, 14928), (45, 15000), (49, 15045), (57, 15081), (62, 15123), (75, 15207),

Gene: Sisko\_14 Start: 13277, Stop: 13672, Start Num: 22

Candidate Starts for Sisko\_14:

(Start: 22 @13277 has 6 MA's), (Start: 24 @13289 has 4 MA's), (30, 13319), (39, 13391), (48, 13460), (57, 13523), (58, 13529), (67, 13607), (69, 13622), (70, 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 6 MA's), (31, 14792), (39, 14828), (51, 14936), (57, 14960), (58, 14966), (61, 14990), (64, 15017), (69, 15059), (74, 15080),

Gene: Stinger\_13 Start: 13475, Stop: 13876, Start Num: 19

Candidate Starts for Stinger\_13:

(Start: 19 @13475 has 29 MA's), (35, 13577), (40, 13616), (43, 13640), (49, 13694), (53, 13712), (56, 13721), (57, 13730), (59, 13748), (61, 13760),

Gene: SynergyX\_17 Start: 14567, Stop: 15001, Start Num: 16

Candidate Starts for SynergyX\_17:

(8, 14462), (Start: 16 @14567 has 47 MA's), (27, 14621), (33, 14687), (62, 14888), (63, 14891),

Gene: Tydolla\_17 Start: 15304, Stop: 15738, Start Num: 16

Candidate Starts for Tydolla\_17:

(8, 15199), (Start: 16 @15304 has 47 MA's), (27, 15358), (33, 15424), (62, 15625), (63, 15628),

Gene: VioletZ\_15 Start: 15009, Stop: 15410, Start Num: 19

Candidate Starts for VioletZ\_15:

(Start: 19 @15009 has 29 MA's), (35, 15111), (43, 15174), (45, 15183), (49, 15228), (53, 15246), (57, 15264), (60, 15285), (61, 15294), (75, 15387),

Gene: Waleliano\_15 Start: 14979, Stop: 15380, Start Num: 19

Candidate Starts for Waleliano\_15:

(Start: 19 @14979 has 29 MA's), (35, 15081), (43, 15144), (45, 15153), (49, 15198), (53, 15216), (57, 15234), (60, 15255), (61, 15264), (75, 15357),

Gene: Wooper\_16 Start: 14369, Stop: 14770, Start Num: 17

Candidate Starts for Wooper\_16:

(Start: 17 @14369 has 6 MA's), (20, 14390), (28, 14417), (37, 14495), (49, 14606), (56, 14633), (57, 14642), (58, 14648), (64, 14699), (66, 14717), (69, 14741), (72, 14759), (73, 14762),

Gene: Xincheng\_15 Start: 14800, Stop: 15201, Start Num: 19

Candidate Starts for Xincheng\_15:

(Start: 19 @14800 has 29 MA's), (35, 14902), (40, 14941), (43, 14965), (45, 14974), (49, 15019), (53, 15037), (56, 15046), (57, 15055), (60, 15076), (61, 15085), (75, 15178),

Gene: Yago84\_14 Start: 13286, Stop: 13681, Start Num: 22

Candidate Starts for Yago84\_14:

(Start: 22 @13286 has 6 MA's), (Start: 24 @13298 has 4 MA's), (30, 13328), (39, 13400), (48, 13469), (57, 13532), (58, 13538), (67, 13616), (69, 13631), (70, 13637),

Gene: Yahalom\_17 Start: 14578, Stop: 15012, Start Num: 16

Candidate Starts for Yahalom\_17:

(8, 14473), (Start: 16 @14578 has 47 MA's), (27, 14632), (33, 14698), (62, 14899), (63, 14902),

Gene: Yeshua\_16 Start: 14394, Stop: 14747, Start Num: 28

Candidate Starts for Yeshua\_16:

(Start: 17 @14346 has 6 MA's), (28, 14394), (37, 14472), (49, 14583), (57, 14619), (58, 14625), (64, 14676), (66, 14694), (69, 14718), (73, 14739),

Gene: Yinz\_17 Start: 14605, Stop: 15039, Start Num: 16

Candidate Starts for Yinz\_17:

(8, 14500), (Start: 16 @14605 has 47 MA's), (27, 14659), (33, 14725), (62, 14926), (63, 14929),

Gene: Yvonnetastic\_49 Start: 34634, Stop: 35044, Start Num: 18

Candidate Starts for Yvonnetastic\_49:

(Start: 18 @34634 has 2 MA's), (32, 34745), (39, 34778), (41, 34802), (64, 34967),

Gene: Zemanar\_16 Start: 14979, Stop: 15380, Start Num: 19

Candidate Starts for Zemanar\_16:

(Start: 19 @14979 has 29 MA's), (35, 15081), (43, 15144), (45, 15153), (49, 15198), (53, 15216), (57, 15234), (60, 15255), (61, 15264), (75, 15357),