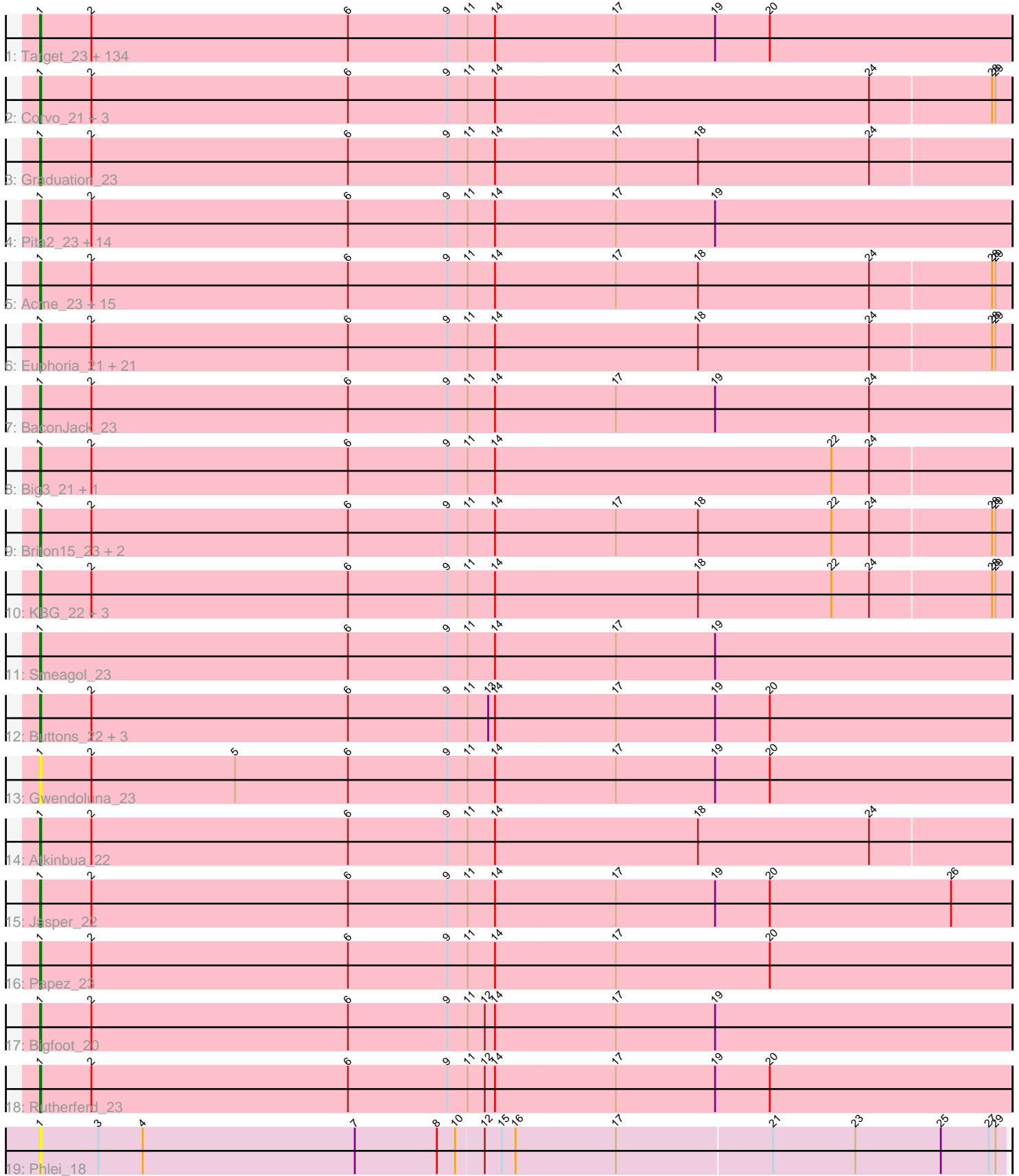


# Pham 160136



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 160136 Report

This analysis was run 04/28/24 on database version 559.

Pham number 160136 has 215 members, 20 are drafts.

Phages represented in each track:

- Track 1 : Target\_23, Hami1\_23, AFIS\_21, Marsha\_21, StrongArm\_20, SpikeBT\_23, HermioneGrange\_21, Eyeball\_21, Bexan\_20, Perseus\_22, Mule\_21, Agaliana\_21, Jerm2\_22, QTRLifeCrisis\_24, Jorgensen\_21, Beatrix\_20, Mryolo\_20, Nhonho\_21, Norz\_23, Ruotula\_20, Carlyle\_23, Lopton\_22, MPlant7149\_20, BluSpix\_21, Crispicous1\_20, Zeuska\_22, SwissCheese\_21, BigMau\_23, Ringer\_21, A6\_19, Watermelon\_23, Sorpresa\_20, StewieG\_20, Dulcie\_20, Marge\_22, Sandaddy\_20, Teodoridan\_19, IgnatiusPatJac\_20, Chanagan\_20, Forsytheast\_20, Paphu\_20, BK1\_19, Froghopper\_22, Bob3\_20, ConceptII\_22, RidgeCB\_21, ILeeKay\_23, Aeneas\_23, TwoPeat\_21, Molly\_22, Bruns\_20, Greg\_23, PattyP\_23, Petruccio\_21, Alvin\_22, Fushigi\_22, JackSparrow\_22, TheloniousMonk\_23, Lamina13\_21, Oogway\_20, Dexes\_22, Violet\_20, Seanderson\_22, Zephyr\_21, Ashballer\_20, HarryOW\_22, CactusRose\_20, Museum\_23, Ohno789\_21, Gyzlar\_23, JC27\_23, Moose\_20, DrFeelGood\_20, Rohr\_22, ShortQueendom\_20, Sumter\_20, Applejack\_21, Bones\_21, Rubeus\_22, Burton\_22, Fajezeel\_23, Tripl3t\_22, Pelly\_22, Wilkins\_21, Adahisdi\_22, Francis47\_21, Arlo\_20, Licorice\_23, Hermia\_23, Rufus\_22, Doom\_22, Topgun\_21, Magnar\_21, Sagefire\_22, Smairt\_22, Kenmech\_24, Abbysshoes\_22, Bircsak\_21, Solon\_21, BPBiebs31\_22, KyMonks1A\_23, Traft412\_23, Dussy\_22, Maroc7\_20, Sibs6\_23, STLscum\_22, Naira\_22, Cueylyss\_21, Fenn\_22, Kanely\_22, Wheeler\_21, Rhynn\_21, Nerujay\_22, Gompeii16\_21, Slagathor\_22, Abrogate\_220, Squee\_22, Zeeculate\_20, Petp2012\_23, HanShotFirst\_21, Snazzy\_19, Blue\_21, NEHalo\_21, Sunshine924\_20, Homines\_21, Lesedi\_20, Marcell\_21, PhrostyMug\_21, BigPaolini\_22, BillKnuckles\_22, Kugel\_22, Trouble\_21, Pippin\_23, Altman\_23, PinkPlastic\_20
- Track 2 : Corvo\_21, MetalQZJ\_21, MaryBeth\_21, PacerPaul\_21
- Track 3 : Graduation\_23
- Track 4 : Pita2\_23, Alsfro\_25, Kykar\_19, Magnito\_20, DD5\_22, Bxb1\_19, Turj99\_20, Peterson\_24, JuliaChild\_23, Lockley\_21, Swole\_23, Fascinus\_20, PSullivan\_22, Tote\_23, LilBib\_22
- Track 5 : Acme\_23, Manatee\_22, Scowl\_22, Marchy\_19, PherrisBueller\_22, Makemake\_21, Thor\_21, Killigrew\_19, SarFire\_21, Gandalf20\_22, Ciao\_21, Barriga\_21, Payneful\_20, Dreamboat\_22, Bethlehem\_21, Paraselene\_20
- Track 6 : Euphoria\_21, Michley\_21, KSSJEB\_21, GageAP\_23, Pepe\_22, Tasp14\_22, Seabiscuit\_23, Parliament\_20, Arcanine\_22, Pari\_22, Dynamix\_22, McGuire\_22, U2\_21, DreamCatcher\_24, BeesKnees\_22, Hope4ever\_21, Niza\_23, Pinto\_23, Anglerfish\_22, Rajelicia\_21, SkiPole\_23, Switzer\_22
- Track 7 : BaconJack\_23
- Track 8 : Big3\_21, MrGordo\_21

- Track 9 : Briton15\_23, PascalRango\_20, GrecoEtereo\_22
- Track 10 : KBG\_22, Espresso\_21, Ichabod\_22, Ajay\_21
- Track 11 : Smeagol\_23
- Track 12 : Buttons\_22, Monet\_23, Treddle\_23, Edtherson\_22
- Track 13 : Gwendoluna\_23
- Track 14 : Atkinbua\_22
- Track 15 : Jasper\_22
- Track 16 : Papez\_23
- Track 17 : Bigfoot\_20
- Track 18 : Rutherford\_23
- Track 19 : Phlei\_18

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

The start number called the most often in the published annotations is 1, it was called in 195 of the 195 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- A6\_19, AFIS\_21, Abbyshoes\_22, Abrogate\_220, Acme\_23, Adahisdi\_22, Aeneas\_23, Agaliana\_21, Ajay\_21, Alsfro\_25, Altman\_23, Alvin\_22, Anglerfish\_22, Applejack\_21, Arcanine\_22, Arlo\_20, Ashballer\_20, Atkinbua\_22, BK1\_19, BPBiebs31\_22, BaconJack\_23, Barriga\_21, Beatrix\_20, BeesKnees\_22, Bethlehem\_21, Bexan\_20, Big3\_21, BigMau\_23, BigPaolini\_22, Bigfoot\_20, BillKnuckles\_22, Bircsak\_21, BluSpix\_21, Blue\_21, Bob3\_20, Bones\_21, Briton15\_23, Bruns\_20, Burton\_22, Buttons\_22, Bxb1\_19, CactusRose\_20, Carlyle\_23, Chanagan\_20, Ciao\_21, ConceptII\_22, Corvo\_21, Crispicous1\_20, Cueyllyss\_21, DD5\_22, Dexes\_22, Doom\_22, DrFeelGood\_20, DreamCatcher\_24, Dreamboat\_22, Dulcie\_20, Dussy\_22, Dynamix\_22, Edtherson\_22, Espresso\_21, Euphoria\_21, Eyeball\_21, Fajezeel\_23, Fascinus\_20, Fenn\_22, Forsytheast\_20, Francis47\_21, Froghopper\_22, Fushigi\_22, GageAP\_23, Gandalf20\_22, Gompeii16\_21, Graduation\_23, GrecoEtereo\_22, Greg\_23, Gwendoluna\_23, Gyzlar\_23, Hami1\_23, HanShotFirst\_21, HarryOW\_22, Hermia\_23, HermioneGrange\_21, Homines\_21, Hope4ever\_21, ILeeKay\_23, Ichabod\_22, IgnatiusPatJac\_20, JC27\_23, JackSparrow\_22, Jasper\_22, Jerm2\_22, Jorgensen\_21, JuliaChild\_23, KBG\_22, KSSJEB\_21, Kanely\_22, Kenmech\_24, Killigrew\_19, Kugel\_22, KyMonks1A\_23, Kykar\_19, Lamina13\_21, Lesedi\_20, Licorice\_23, LilBib\_22, Lockley\_21, Lopton\_22, MPlant7149\_20, Magnar\_21, Magnito\_20, Makemake\_21, Manatee\_22, Marcell\_21, Marchy\_19, Marge\_22, Maroc7\_20, Marsha\_21, MaryBeth\_21, McGuire\_22, MetalQZJ\_21, Michley\_21, Molly\_22, Monet\_23, Moose\_20, MrGordo\_21, Mryolo\_20, Mule\_21, Museum\_23, NEHalo\_21, Naira\_22, Nerujay\_22, Nhonho\_21, Niza\_23, Norz\_23, Ohno789\_21, Oogway\_20, PSullivan\_22, PacerPaul\_21, Papez\_23, Paphu\_20, Paraselene\_20, Pari\_22, Parliament\_20, PascalRango\_20, PattyP\_23, Payneful\_20, Pelly\_22, Pepe\_22, Perseus\_22, Peterson\_24, Petp2012\_23, Petruccio\_21, PherrisBueller\_22, Phlei\_18, PhrostyMug\_21, PinkPlastic\_20, Pinto\_23, Pippin\_23, Pita2\_23, QTRlifeCrisis\_24, Rajelicia\_21, Rhynn\_21, RidgeCB\_21, Ringer\_21, Rohr\_22, Rubeus\_22, Rufus\_22, Ruotula\_20, Rutherford\_23, STLscum\_22, Sagefire\_22, Sandaddy\_20, SarFire\_21, Scowl\_22, Seabiscuit\_23, Seanderson\_22, ShortQueendom\_20, Sibs6\_23, SkiPole\_23, Slagathor\_22, Smairt\_22, Smeagol\_23, Snazzy\_19, Solon\_21, Sorpresa\_20, SpikeBT\_23, Squee\_22, StewieG\_20,

StrongArm\_20, Sumter\_20, Sunshine924\_20, SwissCheese\_21, Switzer\_22, Swole\_23, Target\_23, Tasp14\_22, Teodoridan\_19, TheloniousMonk\_23, Thor\_21, Topgun\_21, Tote\_23, Traft412\_23, Treddle\_23, Tripl3t\_22, Trouble\_21, Turj99\_20, TwoPeat\_21, U2\_21, Violet\_20, Watermelon\_23, Wheeler\_21, Wilkins\_21, Zeeculate\_20, Zephyr\_21, Zeuska\_22,

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

- 

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

- 

### Summary by start number:

Start 1:

- Found in 215 of 215 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 195 of 195
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A6\_19 (A1), AFIS\_21 (A1), Abbyshoes\_22 (A1), Abrogate\_220 (A1), Acme\_23 (A1), Adahisdi\_22 (A1), Aeneas\_23 (A1), Agaliana\_21 (A1), Ajay\_21 (A1), Alsfro\_25 (A1), Altman\_23 (A1), Alvin\_22 (A1), Anglerfish\_22 (A1), Applejack\_21 (A1), Arcanine\_22 (A1), Arlo\_20 (A1), Ashballer\_20 (A1), Atkinbua\_22 (A1), BK1\_19 (A1), BPBiebs31\_22 (A1), BaconJack\_23 (A1), Barriga\_21 (A1), Beatrix\_20 (A1), BeesKnees\_22 (A1), Bethlehem\_21 (A1), Bexan\_20 (A1), Big3\_21 (A1), BigMau\_23 (A1), BigPaolini\_22 (A1), Bigfoot\_20 (A1), BillKnuckles\_22 (A1), Bircsak\_21 (A1), BluSpix\_21 (A1), Blue\_21 (A1), Bob3\_20 (A1), Bones\_21 (A1), Briton15\_23 (A1), Bruns\_20 (A1), Burton\_22 (A1), Buttons\_22 (A1), Bxb1\_19 (A1), CactusRose\_20 (A1), Carlyle\_23 (A1), Chanagan\_20 (A1), Ciao\_21 (A1), ConceptII\_22 (A1), Corvo\_21 (A1), Crispicious1\_20 (A1), Cueyllyss\_21 (A1), DD5\_22 (A1), Dexes\_22 (A1), Doom\_22 (A1), DrFeelGood\_20 (A1), DreamCatcher\_24 (A1), Dreamboat\_22 (A1), Dulcie\_20 (A1), Dussy\_22 (A1), Dynamix\_22 (A1), Edtherson\_22 (A1), Espresso\_21 (A1), Euphoria\_21 (A1), Eyeball\_21 (A1), Fajezeel\_23 (A1), Fascinus\_20 (A1), Fenn\_22 (A1), Forsytheast\_20 (A1), Francis47\_21 (A1), Froghopper\_22 (A1), Fushigi\_22 (A1), GageAP\_23 (A1), Gandalf20\_22 (A1), Gompeii16\_21 (A1), Graduation\_23 (A1), GrecoEtereo\_22 (A1), Greg\_23 (A1), Gwendoluna\_23 (A1), Gyzlar\_23 (A1), Hami1\_23 (A1), HanShotFirst\_21 (A1), HarryOW\_22 (A1), Hermia\_23 (A1), HermioneGrange\_21 (A1), Homines\_21 (A1), Hope4ever\_21 (A1), ILeeKay\_23 (A1), Ichabod\_22 (A1), IgnatiusPatJac\_20 (A1), JC27\_23 (A1), JackSparrow\_22 (A1), Jasper\_22 (A1), Jerm2\_22 (A1), Jorgensen\_21 (A1), JuliaChild\_23 (A1), KBG\_22 (A1), KSSJEB\_21 (A1), Kanely\_22 (A1), Kenmech\_24 (A1), Killigrew\_19 (A1), Kugel\_22 (A1), KyMonks1A\_23 (A1), Kykar\_19 (A1), Lamina13\_21 (A1), Lesedi\_20 (A1), Licorice\_23 (A1), LilBib\_22 (A1), Lockley\_21 (A1), Lopton\_22 (A1), MPlant7149\_20 (A1), Magnar\_21 (A1), Magnito\_20 (A1), Makemake\_21 (A1), Manatee\_22 (A1), Marcell\_21 (A1), Marchy\_19 (A1), Marge\_22 (A1), Maroc7\_20 (A1), Marsha\_21 (A1), MaryBeth\_21 (A1), McGuire\_22 (A1), MetalQZJ\_21 (A1), Michley\_21 (A1), Molly\_22 (A1), Monet\_23 (A1), Moose\_20 (A1), MrGordo\_21 (A1), Mryolo\_20 (A1), Mule\_21 (A1), Museum\_23 (A1), NEHal0\_21 (A1), Naira\_22 (A1), Nerujay\_22 (A1), Nhonho\_21 (A1), Niza\_23 (A1), Norz\_23 (A1), Ohno789\_21 (A1), Oogway\_20 (A1), PSullivan\_22 (A1), PacerPaul\_21 (A1), Papez\_23 (A1), Paphu\_20 (A1), Paraselene\_20 (A1), Pari\_22 (A1), Parliament\_20 (A1), PascalRango\_20 (A1), PattyP\_23 (A1), Payneful\_20 (A1), Pelly\_22 (A1), Pepe\_22 (A1), Perseus\_22 (A1), Peterson\_24 (A1), Petp2012\_23 (A1), Petruccio\_21 (A1), PherrisBueller\_22 (A1),

Phlei\_18 (A13), PhrostyMug\_21 (A1), PinkPlastic\_20 (A1), Pinto\_23 (A1), Pippin\_23 (A1), Pita2\_23 (A1), QTRLifeCrisis\_24 (A1), Rajelicia\_21 (A1), Rhynn\_21 (A1), RidgeCB\_21 (A1), Ringer\_21 (A1), Rohr\_22 (A1), Rubeus\_22 (A1), Rufus\_22 (A1), Ruotula\_20 (A1), Rutherferd\_23 (A1), STLscum\_22 (A1), Sagefire\_22 (A1), Sandaddy\_20 (A1), SarFire\_21 (A1), Scowl\_22 (A1), Seabiscuit\_23 (A1), Seanderson\_22 (A1), ShortQueendom\_20 (A1), Sibs6\_23 (A1), SkiPole\_23 (A1), Slagathor\_22 (A1), Smairt\_22 (A1), Smeagol\_23 (A1), Snazzy\_19 (A1), Solon\_21 (A1), Sorpresa\_20 (A1), SpikeBT\_23 (A1), Squee\_22 (A1), StewieG\_20 (A1), StrongArm\_20 (A1), Sumter\_20 (A1), Sunshine924\_20 (A1), SwissCheese\_21 (A1), Switzer\_22 (A1), Swole\_23 (A1), Target\_23 (A1), Tasp14\_22 (A1), Teodoridan\_19 (A1), TheloniousMonk\_23 (A1), Thor\_21 (A1), Topgun\_21 (A1), Tote\_23 (A1), Traft412\_23 (A1), Treddle\_23 (A1), Tripl3t\_22 (A1), Trouble\_21 (A1), Turj99\_20 (A1), TwoPeat\_21 (A1), U2\_21 (A1), Violet\_20 (A1), Watermelon\_23 (A1), Wheeler\_21 (A1), Wilkins\_21 (A1), Zeeculate\_20 (A1), Zephyr\_21 (A1), Zeuska\_22 (A1),

### Summary by clusters:

There are 2 clusters represented in this pham: A1, A13,

Info for manual annotations of cluster A1:

- Start number 1 was manually annotated 195 times for cluster A1.

### Gene Information:

Gene: A6\_19 Start: 14147, Stop: 14998, Start Num: 1

Candidate Starts for A6\_19:

(Start: 1 @14147 has 195 MA's), (2, 14192), (6, 14417), (9, 14504), (11, 14522), (14, 14546), (17, 14651), (19, 14738), (20, 14786),

Gene: AFIS\_21 Start: 14485, Stop: 15336, Start Num: 1

Candidate Starts for AFIS\_21:

(Start: 1 @14485 has 195 MA's), (2, 14530), (6, 14755), (9, 14842), (11, 14860), (14, 14884), (17, 14989), (19, 15076), (20, 15124),

Gene: Abbyshoes\_22 Start: 14871, Stop: 15722, Start Num: 1

Candidate Starts for Abbyshoes\_22:

(Start: 1 @14871 has 195 MA's), (2, 14916), (6, 15141), (9, 15228), (11, 15246), (14, 15270), (17, 15375), (19, 15462), (20, 15510),

Gene: Abrogate\_220 Start: 15243, Stop: 16094, Start Num: 1

Candidate Starts for Abrogate\_220:

(Start: 1 @15243 has 195 MA's), (2, 15288), (6, 15513), (9, 15600), (11, 15618), (14, 15642), (17, 15747), (19, 15834), (20, 15882),

Gene: Acme\_23 Start: 14921, Stop: 15769, Start Num: 1

Candidate Starts for Acme\_23:

(Start: 1 @14921 has 195 MA's), (2, 14966), (6, 15191), (9, 15278), (11, 15296), (14, 15320), (17, 15425), (18, 15497), (24, 15647), (28, 15752), (29, 15755),

Gene: Adahisdi\_22 Start: 14803, Stop: 15654, Start Num: 1

Candidate Starts for Adahisdi\_22:

(Start: 1 @14803 has 195 MA's), (2, 14848), (6, 15073), (9, 15160), (11, 15178), (14, 15202), (17, 15307), (19, 15394), (20, 15442),

Gene: Aeneas\_23 Start: 14911, Stop: 15762, Start Num: 1

Candidate Starts for Aeneas\_23:

(Start: 1 @14911 has 195 MA's), (2, 14956), (6, 15181), (9, 15268), (11, 15286), (14, 15310), (17, 15415), (19, 15502), (20, 15550),

Gene: Agaliana\_21 Start: 14863, Stop: 15714, Start Num: 1

Candidate Starts for Agaliana\_21:

(Start: 1 @14863 has 195 MA's), (2, 14908), (6, 15133), (9, 15220), (11, 15238), (14, 15262), (17, 15367), (19, 15454), (20, 15502),

Gene: Ajay\_21 Start: 14635, Stop: 15483, Start Num: 1

Candidate Starts for Ajay\_21:

(Start: 1 @14635 has 195 MA's), (2, 14680), (6, 14905), (9, 14992), (11, 15010), (14, 15034), (18, 15211), (22, 15328), (24, 15361), (28, 15466), (29, 15469),

Gene: Alsfro\_25 Start: 15355, Stop: 16206, Start Num: 1

Candidate Starts for Alsfro\_25:

(Start: 1 @15355 has 195 MA's), (2, 15400), (6, 15625), (9, 15712), (11, 15730), (14, 15754), (17, 15859), (19, 15946),

Gene: Altman\_23 Start: 15400, Stop: 16251, Start Num: 1

Candidate Starts for Altman\_23:

(Start: 1 @15400 has 195 MA's), (2, 15445), (6, 15670), (9, 15757), (11, 15775), (14, 15799), (17, 15904), (19, 15991), (20, 16039),

Gene: Alvin\_22 Start: 15121, Stop: 15972, Start Num: 1

Candidate Starts for Alvin\_22:

(Start: 1 @15121 has 195 MA's), (2, 15166), (6, 15391), (9, 15478), (11, 15496), (14, 15520), (17, 15625), (19, 15712), (20, 15760),

Gene: Anglerfish\_22 Start: 15783, Stop: 16631, Start Num: 1

Candidate Starts for Anglerfish\_22:

(Start: 1 @15783 has 195 MA's), (2, 15828), (6, 16053), (9, 16140), (11, 16158), (14, 16182), (18, 16359), (24, 16509), (28, 16614), (29, 16617),

Gene: Applejack\_21 Start: 14560, Stop: 15411, Start Num: 1

Candidate Starts for Applejack\_21:

(Start: 1 @14560 has 195 MA's), (2, 14605), (6, 14830), (9, 14917), (11, 14935), (14, 14959), (17, 15064), (19, 15151), (20, 15199),

Gene: Arcanine\_22 Start: 14802, Stop: 15650, Start Num: 1

Candidate Starts for Arcanine\_22:

(Start: 1 @14802 has 195 MA's), (2, 14847), (6, 15072), (9, 15159), (11, 15177), (14, 15201), (18, 15378), (24, 15528), (28, 15633), (29, 15636),

Gene: Arlo\_20 Start: 14181, Stop: 15032, Start Num: 1

Candidate Starts for Arlo\_20:

(Start: 1 @14181 has 195 MA's), (2, 14226), (6, 14451), (9, 14538), (11, 14556), (14, 14580), (17, 14685), (19, 14772), (20, 14820),

Gene: Ashballer\_20 Start: 14564, Stop: 15415, Start Num: 1

Candidate Starts for Ashballer\_20:

(Start: 1 @14564 has 195 MA's), (2, 14609), (6, 14834), (9, 14921), (11, 14939), (14, 14963), (17, 15068), (19, 15155), (20, 15203),

Gene: Atkinbua\_22 Start: 14535, Stop: 15383, Start Num: 1

Candidate Starts for Atkinbua\_22:

(Start: 1 @14535 has 195 MA's), (2, 14580), (6, 14805), (9, 14892), (11, 14910), (14, 14934), (18, 15111), (24, 15261),

Gene: BK1\_19 Start: 14147, Stop: 14998, Start Num: 1

Candidate Starts for BK1\_19:

(Start: 1 @14147 has 195 MA's), (2, 14192), (6, 14417), (9, 14504), (11, 14522), (14, 14546), (17, 14651), (19, 14738), (20, 14786),

Gene: BPBiebs31\_22 Start: 14827, Stop: 15678, Start Num: 1

Candidate Starts for BPBiebs31\_22:

(Start: 1 @14827 has 195 MA's), (2, 14872), (6, 15097), (9, 15184), (11, 15202), (14, 15226), (17, 15331), (19, 15418), (20, 15466),

Gene: BaconJack\_23 Start: 14902, Stop: 15753, Start Num: 1

Candidate Starts for BaconJack\_23:

(Start: 1 @14902 has 195 MA's), (2, 14947), (6, 15172), (9, 15259), (11, 15277), (14, 15301), (17, 15406), (19, 15493), (24, 15628),

Gene: Barriga\_21 Start: 14430, Stop: 15278, Start Num: 1

Candidate Starts for Barriga\_21:

(Start: 1 @14430 has 195 MA's), (2, 14475), (6, 14700), (9, 14787), (11, 14805), (14, 14829), (17, 14934), (18, 15006), (24, 15156), (28, 15261), (29, 15264),

Gene: Beatrix\_20 Start: 15279, Stop: 16130, Start Num: 1

Candidate Starts for Beatrix\_20:

(Start: 1 @15279 has 195 MA's), (2, 15324), (6, 15549), (9, 15636), (11, 15654), (14, 15678), (17, 15783), (19, 15870), (20, 15918),

Gene: BeesKnees\_22 Start: 14620, Stop: 15468, Start Num: 1

Candidate Starts for BeesKnees\_22:

(Start: 1 @14620 has 195 MA's), (2, 14665), (6, 14890), (9, 14977), (11, 14995), (14, 15019), (18, 15196), (24, 15346), (28, 15451), (29, 15454),

Gene: Bethlehem\_21 Start: 15857, Stop: 16705, Start Num: 1

Candidate Starts for Bethlehem\_21:

(Start: 1 @15857 has 195 MA's), (2, 15902), (6, 16127), (9, 16214), (11, 16232), (14, 16256), (17, 16361), (18, 16433), (24, 16583), (28, 16688), (29, 16691),

Gene: Bexan\_20 Start: 15565, Stop: 16416, Start Num: 1

Candidate Starts for Bexan\_20:

(Start: 1 @15565 has 195 MA's), (2, 15610), (6, 15835), (9, 15922), (11, 15940), (14, 15964), (17, 16069), (19, 16156), (20, 16204),

Gene: Big3\_21 Start: 15211, Stop: 16059, Start Num: 1

Candidate Starts for Big3\_21:

(Start: 1 @15211 has 195 MA's), (2, 15256), (6, 15481), (9, 15568), (11, 15586), (14, 15610), (22, 15904), (24, 15937),

Gene: BigMau\_23 Start: 14788, Stop: 15639, Start Num: 1

Candidate Starts for BigMau\_23:

(Start: 1 @14788 has 195 MA's), (2, 14833), (6, 15058), (9, 15145), (11, 15163), (14, 15187), (17, 15292), (19, 15379), (20, 15427),

Gene: BigPaolini\_22 Start: 15214, Stop: 16065, Start Num: 1

Candidate Starts for BigPaolini\_22:

(Start: 1 @15214 has 195 MA's), (2, 15259), (6, 15484), (9, 15571), (11, 15589), (14, 15613), (17, 15718), (19, 15805), (20, 15853),

Gene: Bigfoot\_20 Start: 14316, Stop: 15167, Start Num: 1

Candidate Starts for Bigfoot\_20:

(Start: 1 @14316 has 195 MA's), (2, 14361), (6, 14586), (9, 14673), (11, 14691), (12, 14706), (14, 14715), (17, 14820), (19, 14907),

Gene: BillKnuckles\_22 Start: 15280, Stop: 16131, Start Num: 1

Candidate Starts for BillKnuckles\_22:

(Start: 1 @15280 has 195 MA's), (2, 15325), (6, 15550), (9, 15637), (11, 15655), (14, 15679), (17, 15784), (19, 15871), (20, 15919),

Gene: Bircsak\_21 Start: 15074, Stop: 15925, Start Num: 1

Candidate Starts for Bircsak\_21:

(Start: 1 @15074 has 195 MA's), (2, 15119), (6, 15344), (9, 15431), (11, 15449), (14, 15473), (17, 15578), (19, 15665), (20, 15713),

Gene: BluSpix\_21 Start: 14576, Stop: 15427, Start Num: 1

Candidate Starts for BluSpix\_21:

(Start: 1 @14576 has 195 MA's), (2, 14621), (6, 14846), (9, 14933), (11, 14951), (14, 14975), (17, 15080), (19, 15167), (20, 15215),

Gene: Blue\_21 Start: 14679, Stop: 15530, Start Num: 1

Candidate Starts for Blue\_21:

(Start: 1 @14679 has 195 MA's), (2, 14724), (6, 14949), (9, 15036), (11, 15054), (14, 15078), (17, 15183), (19, 15270), (20, 15318),

Gene: Bob3\_20 Start: 14128, Stop: 14979, Start Num: 1

Candidate Starts for Bob3\_20:

(Start: 1 @14128 has 195 MA's), (2, 14173), (6, 14398), (9, 14485), (11, 14503), (14, 14527), (17, 14632), (19, 14719), (20, 14767),

Gene: Bones\_21 Start: 14317, Stop: 15168, Start Num: 1

Candidate Starts for Bones\_21:

(Start: 1 @14317 has 195 MA's), (2, 14362), (6, 14587), (9, 14674), (11, 14692), (14, 14716), (17, 14821), (19, 14908), (20, 14956),

Gene: Briton15\_23 Start: 14877, Stop: 15725, Start Num: 1

Candidate Starts for Briton15\_23:

(Start: 1 @14877 has 195 MA's), (2, 14922), (6, 15147), (9, 15234), (11, 15252), (14, 15276), (17, 15381), (18, 15453), (22, 15570), (24, 15603), (28, 15708), (29, 15711),



Gene: Bruns\_20 Start: 14500, Stop: 15351, Start Num: 1  
Candidate Starts for Bruns\_20:  
(Start: 1 @14500 has 195 MA's), (2, 14545), (6, 14770), (9, 14857), (11, 14875), (14, 14899), (17, 15004), (19, 15091), (20, 15139),

Gene: Burton\_22 Start: 14698, Stop: 15549, Start Num: 1  
Candidate Starts for Burton\_22:  
(Start: 1 @14698 has 195 MA's), (2, 14743), (6, 14968), (9, 15055), (11, 15073), (14, 15097), (17, 15202), (19, 15289), (20, 15337),

Gene: Buttons\_22 Start: 15062, Stop: 15913, Start Num: 1  
Candidate Starts for Buttons\_22:  
(Start: 1 @15062 has 195 MA's), (2, 15107), (6, 15332), (9, 15419), (11, 15437), (13, 15455), (14, 15461), (17, 15566), (19, 15653), (20, 15701),

Gene: Bxb1\_19 Start: 14649, Stop: 15500, Start Num: 1  
Candidate Starts for Bxb1\_19:  
(Start: 1 @14649 has 195 MA's), (2, 14694), (6, 14919), (9, 15006), (11, 15024), (14, 15048), (17, 15153), (19, 15240),

Gene: CactusRose\_20 Start: 14315, Stop: 15166, Start Num: 1  
Candidate Starts for CactusRose\_20:  
(Start: 1 @14315 has 195 MA's), (2, 14360), (6, 14585), (9, 14672), (11, 14690), (14, 14714), (17, 14819), (19, 14906), (20, 14954),

Gene: Carlyle\_23 Start: 15444, Stop: 16295, Start Num: 1  
Candidate Starts for Carlyle\_23:  
(Start: 1 @15444 has 195 MA's), (2, 15489), (6, 15714), (9, 15801), (11, 15819), (14, 15843), (17, 15948), (19, 16035), (20, 16083),

Gene: Chanagan\_20 Start: 14154, Stop: 15005, Start Num: 1  
Candidate Starts for Chanagan\_20:  
(Start: 1 @14154 has 195 MA's), (2, 14199), (6, 14424), (9, 14511), (11, 14529), (14, 14553), (17, 14658), (19, 14745), (20, 14793),

Gene: Ciao\_21 Start: 14541, Stop: 15389, Start Num: 1  
Candidate Starts for Ciao\_21:  
(Start: 1 @14541 has 195 MA's), (2, 14586), (6, 14811), (9, 14898), (11, 14916), (14, 14940), (17, 15045), (18, 15117), (24, 15267), (28, 15372), (29, 15375),

Gene: ConceptII\_22 Start: 15036, Stop: 15887, Start Num: 1  
Candidate Starts for ConceptII\_22:  
(Start: 1 @15036 has 195 MA's), (2, 15081), (6, 15306), (9, 15393), (11, 15411), (14, 15435), (17, 15540), (19, 15627), (20, 15675),

Gene: Corvo\_21 Start: 15033, Stop: 15881, Start Num: 1  
Candidate Starts for Corvo\_21:  
(Start: 1 @15033 has 195 MA's), (2, 15078), (6, 15303), (9, 15390), (11, 15408), (14, 15432), (17, 15537), (24, 15759), (28, 15864), (29, 15867),

Gene: Crispicous1\_20 Start: 14025, Stop: 14876, Start Num: 1  
Candidate Starts for Crispicous1\_20:

(Start: 1 @14025 has 195 MA's), (2, 14070), (6, 14295), (9, 14382), (11, 14400), (14, 14424), (17, 14529), (19, 14616), (20, 14664),

Gene: Cueylyss\_21 Start: 14726, Stop: 15577, Start Num: 1

Candidate Starts for Cueylyss\_21:

(Start: 1 @14726 has 195 MA's), (2, 14771), (6, 14996), (9, 15083), (11, 15101), (14, 15125), (17, 15230), (19, 15317), (20, 15365),

Gene: DD5\_22 Start: 15275, Stop: 16126, Start Num: 1

Candidate Starts for DD5\_22:

(Start: 1 @15275 has 195 MA's), (2, 15320), (6, 15545), (9, 15632), (11, 15650), (14, 15674), (17, 15779), (19, 15866),

Gene: Dexes\_22 Start: 15241, Stop: 16092, Start Num: 1

Candidate Starts for Dexes\_22:

(Start: 1 @15241 has 195 MA's), (2, 15286), (6, 15511), (9, 15598), (11, 15616), (14, 15640), (17, 15745), (19, 15832), (20, 15880),

Gene: Doom\_22 Start: 15299, Stop: 16150, Start Num: 1

Candidate Starts for Doom\_22:

(Start: 1 @15299 has 195 MA's), (2, 15344), (6, 15569), (9, 15656), (11, 15674), (14, 15698), (17, 15803), (19, 15890), (20, 15938),

Gene: DrFeelGood\_20 Start: 14651, Stop: 15502, Start Num: 1

Candidate Starts for DrFeelGood\_20:

(Start: 1 @14651 has 195 MA's), (2, 14696), (6, 14921), (9, 15008), (11, 15026), (14, 15050), (17, 15155), (19, 15242), (20, 15290),

Gene: DreamCatcher\_24 Start: 16008, Stop: 16856, Start Num: 1

Candidate Starts for DreamCatcher\_24:

(Start: 1 @16008 has 195 MA's), (2, 16053), (6, 16278), (9, 16365), (11, 16383), (14, 16407), (18, 16584), (24, 16734), (28, 16839), (29, 16842),

Gene: Dreamboat\_22 Start: 14475, Stop: 15323, Start Num: 1

Candidate Starts for Dreamboat\_22:

(Start: 1 @14475 has 195 MA's), (2, 14520), (6, 14745), (9, 14832), (11, 14850), (14, 14874), (17, 14979), (18, 15051), (24, 15201), (28, 15306), (29, 15309),

Gene: Dulcie\_20 Start: 14217, Stop: 15068, Start Num: 1

Candidate Starts for Dulcie\_20:

(Start: 1 @14217 has 195 MA's), (2, 14262), (6, 14487), (9, 14574), (11, 14592), (14, 14616), (17, 14721), (19, 14808), (20, 14856),

Gene: Dussy\_22 Start: 14871, Stop: 15722, Start Num: 1

Candidate Starts for Dussy\_22:

(Start: 1 @14871 has 195 MA's), (2, 14916), (6, 15141), (9, 15228), (11, 15246), (14, 15270), (17, 15375), (19, 15462), (20, 15510),

Gene: Dynamix\_22 Start: 14627, Stop: 15475, Start Num: 1

Candidate Starts for Dynamix\_22:

(Start: 1 @14627 has 195 MA's), (2, 14672), (6, 14897), (9, 14984), (11, 15002), (14, 15026), (18, 15203), (24, 15353), (28, 15458), (29, 15461),

Gene: Edtherson\_22 Start: 15369, Stop: 16220, Start Num: 1

Candidate Starts for Edtherson\_22:

(Start: 1 @15369 has 195 MA's), (2, 15414), (6, 15639), (9, 15726), (11, 15744), (13, 15762), (14, 15768), (17, 15873), (19, 15960), (20, 16008),

Gene: Espresso\_21 Start: 14679, Stop: 15527, Start Num: 1

Candidate Starts for Espresso\_21:

(Start: 1 @14679 has 195 MA's), (2, 14724), (6, 14949), (9, 15036), (11, 15054), (14, 15078), (18, 15255), (22, 15372), (24, 15405), (28, 15510), (29, 15513),

Gene: Euphoria\_21 Start: 14571, Stop: 15419, Start Num: 1

Candidate Starts for Euphoria\_21:

(Start: 1 @14571 has 195 MA's), (2, 14616), (6, 14841), (9, 14928), (11, 14946), (14, 14970), (18, 15147), (24, 15297), (28, 15402), (29, 15405),

Gene: Eyeball\_21 Start: 14310, Stop: 15161, Start Num: 1

Candidate Starts for Eyeball\_21:

(Start: 1 @14310 has 195 MA's), (2, 14355), (6, 14580), (9, 14667), (11, 14685), (14, 14709), (17, 14814), (19, 14901), (20, 14949),

Gene: Fajezeel\_23 Start: 14890, Stop: 15741, Start Num: 1

Candidate Starts for Fajezeel\_23:

(Start: 1 @14890 has 195 MA's), (2, 14935), (6, 15160), (9, 15247), (11, 15265), (14, 15289), (17, 15394), (19, 15481), (20, 15529),

Gene: Fascinus\_20 Start: 14313, Stop: 15164, Start Num: 1

Candidate Starts for Fascinus\_20:

(Start: 1 @14313 has 195 MA's), (2, 14358), (6, 14583), (9, 14670), (11, 14688), (14, 14712), (17, 14817), (19, 14904),

Gene: Fenn\_22 Start: 16118, Stop: 16969, Start Num: 1

Candidate Starts for Fenn\_22:

(Start: 1 @16118 has 195 MA's), (2, 16163), (6, 16388), (9, 16475), (11, 16493), (14, 16517), (17, 16622), (19, 16709), (20, 16757),

Gene: Forsytheast\_20 Start: 14580, Stop: 15431, Start Num: 1

Candidate Starts for Forsytheast\_20:

(Start: 1 @14580 has 195 MA's), (2, 14625), (6, 14850), (9, 14937), (11, 14955), (14, 14979), (17, 15084), (19, 15171), (20, 15219),

Gene: Francis47\_21 Start: 15127, Stop: 15978, Start Num: 1

Candidate Starts for Francis47\_21:

(Start: 1 @15127 has 195 MA's), (2, 15172), (6, 15397), (9, 15484), (11, 15502), (14, 15526), (17, 15631), (19, 15718), (20, 15766),

Gene: Froghopper\_22 Start: 14543, Stop: 15394, Start Num: 1

Candidate Starts for Froghopper\_22:

(Start: 1 @14543 has 195 MA's), (2, 14588), (6, 14813), (9, 14900), (11, 14918), (14, 14942), (17, 15047), (19, 15134), (20, 15182),

Gene: Fushigi\_22 Start: 14990, Stop: 15841, Start Num: 1

Candidate Starts for Fushigi\_22:

(Start: 1 @14990 has 195 MA's), (2, 15035), (6, 15260), (9, 15347), (11, 15365), (14, 15389), (17, 15494), (19, 15581), (20, 15629),

Gene: GageAP\_23 Start: 15307, Stop: 16155, Start Num: 1

Candidate Starts for GageAP\_23:

(Start: 1 @15307 has 195 MA's), (2, 15352), (6, 15577), (9, 15664), (11, 15682), (14, 15706), (18, 15883), (24, 16033), (28, 16138), (29, 16141),

Gene: Gandalf20\_22 Start: 15374, Stop: 16222, Start Num: 1

Candidate Starts for Gandalf20\_22:

(Start: 1 @15374 has 195 MA's), (2, 15419), (6, 15644), (9, 15731), (11, 15749), (14, 15773), (17, 15878), (18, 15950), (24, 16100), (28, 16205), (29, 16208),

Gene: Gompeii16\_21 Start: 15075, Stop: 15926, Start Num: 1

Candidate Starts for Gompeii16\_21:

(Start: 1 @15075 has 195 MA's), (2, 15120), (6, 15345), (9, 15432), (11, 15450), (14, 15474), (17, 15579), (19, 15666), (20, 15714),

Gene: Graduation\_23 Start: 15340, Stop: 16188, Start Num: 1

Candidate Starts for Graduation\_23:

(Start: 1 @15340 has 195 MA's), (2, 15385), (6, 15610), (9, 15697), (11, 15715), (14, 15739), (17, 15844), (18, 15916), (24, 16066),

Gene: GrecoEtereo\_22 Start: 14881, Stop: 15729, Start Num: 1

Candidate Starts for GrecoEtereo\_22:

(Start: 1 @14881 has 195 MA's), (2, 14926), (6, 15151), (9, 15238), (11, 15256), (14, 15280), (17, 15385), (18, 15457), (22, 15574), (24, 15607), (28, 15712), (29, 15715),

Gene: Greg\_23 Start: 14890, Stop: 15741, Start Num: 1

Candidate Starts for Greg\_23:

(Start: 1 @14890 has 195 MA's), (2, 14935), (6, 15160), (9, 15247), (11, 15265), (14, 15289), (17, 15394), (19, 15481), (20, 15529),

Gene: Gwendoluna\_23 Start: 15987, Stop: 16838, Start Num: 1

Candidate Starts for Gwendoluna\_23:

(Start: 1 @15987 has 195 MA's), (2, 16032), (5, 16158), (6, 16257), (9, 16344), (11, 16362), (14, 16386), (17, 16491), (19, 16578), (20, 16626),

Gene: Gyzlar\_23 Start: 15817, Stop: 16668, Start Num: 1

Candidate Starts for Gyzlar\_23:

(Start: 1 @15817 has 195 MA's), (2, 15862), (6, 16087), (9, 16174), (11, 16192), (14, 16216), (17, 16321), (19, 16408), (20, 16456),

Gene: Hami1\_23 Start: 14962, Stop: 15813, Start Num: 1

Candidate Starts for Hami1\_23:

(Start: 1 @14962 has 195 MA's), (2, 15007), (6, 15232), (9, 15319), (11, 15337), (14, 15361), (17, 15466), (19, 15553), (20, 15601),

Gene: HanShotFirst\_21 Start: 14496, Stop: 15347, Start Num: 1

Candidate Starts for HanShotFirst\_21:

(Start: 1 @14496 has 195 MA's), (2, 14541), (6, 14766), (9, 14853), (11, 14871), (14, 14895), (17, 15000), (19, 15087), (20, 15135),

Gene: HarryOW\_22 Start: 14881, Stop: 15732, Start Num: 1

Candidate Starts for HarryOW\_22:

(Start: 1 @14881 has 195 MA's), (2, 14926), (6, 15151), (9, 15238), (11, 15256), (14, 15280), (17, 15385), (19, 15472), (20, 15520),

Gene: Hermia\_23 Start: 15604, Stop: 16455, Start Num: 1

Candidate Starts for Hermia\_23:

(Start: 1 @15604 has 195 MA's), (2, 15649), (6, 15874), (9, 15961), (11, 15979), (14, 16003), (17, 16108), (19, 16195), (20, 16243),

Gene: HermioneGrange\_21 Start: 14516, Stop: 15367, Start Num: 1

Candidate Starts for HermioneGrange\_21:

(Start: 1 @14516 has 195 MA's), (2, 14561), (6, 14786), (9, 14873), (11, 14891), (14, 14915), (17, 15020), (19, 15107), (20, 15155),

Gene: Homines\_21 Start: 14606, Stop: 15457, Start Num: 1

Candidate Starts for Homines\_21:

(Start: 1 @14606 has 195 MA's), (2, 14651), (6, 14876), (9, 14963), (11, 14981), (14, 15005), (17, 15110), (19, 15197), (20, 15245),

Gene: Hope4ever\_21 Start: 14992, Stop: 15840, Start Num: 1

Candidate Starts for Hope4ever\_21:

(Start: 1 @14992 has 195 MA's), (2, 15037), (6, 15262), (9, 15349), (11, 15367), (14, 15391), (18, 15568), (24, 15718), (28, 15823), (29, 15826),

Gene: ILeeKay\_23 Start: 14751, Stop: 15602, Start Num: 1

Candidate Starts for ILeeKay\_23:

(Start: 1 @14751 has 195 MA's), (2, 14796), (6, 15021), (9, 15108), (11, 15126), (14, 15150), (17, 15255), (19, 15342), (20, 15390),

Gene: Ichabod\_22 Start: 14608, Stop: 15456, Start Num: 1

Candidate Starts for Ichabod\_22:

(Start: 1 @14608 has 195 MA's), (2, 14653), (6, 14878), (9, 14965), (11, 14983), (14, 15007), (18, 15184), (22, 15301), (24, 15334), (28, 15439), (29, 15442),

Gene: IgnatiusPatJac\_20 Start: 14577, Stop: 15428, Start Num: 1

Candidate Starts for IgnatiusPatJac\_20:

(Start: 1 @14577 has 195 MA's), (2, 14622), (6, 14847), (9, 14934), (11, 14952), (14, 14976), (17, 15081), (19, 15168), (20, 15216),

Gene: JC27\_23 Start: 15487, Stop: 16338, Start Num: 1

Candidate Starts for JC27\_23:

(Start: 1 @15487 has 195 MA's), (2, 15532), (6, 15757), (9, 15844), (11, 15862), (14, 15886), (17, 15991), (19, 16078), (20, 16126),

Gene: JackSparrow\_22 Start: 14918, Stop: 15769, Start Num: 1

Candidate Starts for JackSparrow\_22:

(Start: 1 @14918 has 195 MA's), (2, 14963), (6, 15188), (9, 15275), (11, 15293), (14, 15317), (17, 15422), (19, 15509), (20, 15557),

Gene: Jasper\_22 Start: 14419, Stop: 15270, Start Num: 1

Candidate Starts for Jasper\_22:

(Start: 1 @14419 has 195 MA's), (2, 14464), (6, 14689), (9, 14776), (11, 14794), (14, 14818), (17, 14923), (19, 15010), (20, 15058), (26, 15217),

Gene: Jerm2\_22 Start: 14788, Stop: 15639, Start Num: 1

Candidate Starts for Jerm2\_22:

(Start: 1 @14788 has 195 MA's), (2, 14833), (6, 15058), (9, 15145), (11, 15163), (14, 15187), (17, 15292), (19, 15379), (20, 15427),

Gene: Jorgensen\_21 Start: 14375, Stop: 15226, Start Num: 1

Candidate Starts for Jorgensen\_21:

(Start: 1 @14375 has 195 MA's), (2, 14420), (6, 14645), (9, 14732), (11, 14750), (14, 14774), (17, 14879), (19, 14966), (20, 15014),

Gene: JuliaChild\_23 Start: 15046, Stop: 15897, Start Num: 1

Candidate Starts for JuliaChild\_23:

(Start: 1 @15046 has 195 MA's), (2, 15091), (6, 15316), (9, 15403), (11, 15421), (14, 15445), (17, 15550), (19, 15637),

Gene: KBG\_22 Start: 15496, Stop: 16344, Start Num: 1

Candidate Starts for KBG\_22:

(Start: 1 @15496 has 195 MA's), (2, 15541), (6, 15766), (9, 15853), (11, 15871), (14, 15895), (18, 16072), (22, 16189), (24, 16222), (28, 16327), (29, 16330),

Gene: KSSJEB\_21 Start: 14393, Stop: 15241, Start Num: 1

Candidate Starts for KSSJEB\_21:

(Start: 1 @14393 has 195 MA's), (2, 14438), (6, 14663), (9, 14750), (11, 14768), (14, 14792), (18, 14969), (24, 15119), (28, 15224), (29, 15227),

Gene: Kanely\_22 Start: 15155, Stop: 16006, Start Num: 1

Candidate Starts for Kanely\_22:

(Start: 1 @15155 has 195 MA's), (2, 15200), (6, 15425), (9, 15512), (11, 15530), (14, 15554), (17, 15659), (19, 15746), (20, 15794),

Gene: Kenmech\_24 Start: 15957, Stop: 16808, Start Num: 1

Candidate Starts for Kenmech\_24:

(Start: 1 @15957 has 195 MA's), (2, 16002), (6, 16227), (9, 16314), (11, 16332), (14, 16356), (17, 16461), (19, 16548), (20, 16596),

Gene: Killigrew\_19 Start: 14029, Stop: 14877, Start Num: 1

Candidate Starts for Killigrew\_19:

(Start: 1 @14029 has 195 MA's), (2, 14074), (6, 14299), (9, 14386), (11, 14404), (14, 14428), (17, 14533), (18, 14605), (24, 14755), (28, 14860), (29, 14863),

Gene: Kugel\_22 Start: 14667, Stop: 15518, Start Num: 1

Candidate Starts for Kugel\_22:

(Start: 1 @14667 has 195 MA's), (2, 14712), (6, 14937), (9, 15024), (11, 15042), (14, 15066), (17, 15171), (19, 15258), (20, 15306),

Gene: KyMonks1A\_23 Start: 14894, Stop: 15745, Start Num: 1

Candidate Starts for KyMonks1A\_23:

(Start: 1 @14894 has 195 MA's), (2, 14939), (6, 15164), (9, 15251), (11, 15269), (14, 15293), (17, 15398), (19, 15485), (20, 15533),

Gene: Kykar\_19 Start: 14164, Stop: 15015, Start Num: 1  
Candidate Starts for Kykar\_19:  
(Start: 1 @14164 has 195 MA's), (2, 14209), (6, 14434), (9, 14521), (11, 14539), (14, 14563), (17, 14668), (19, 14755),

Gene: Lamina13\_21 Start: 14170, Stop: 15021, Start Num: 1  
Candidate Starts for Lamina13\_21:  
(Start: 1 @14170 has 195 MA's), (2, 14215), (6, 14440), (9, 14527), (11, 14545), (14, 14569), (17, 14674), (19, 14761), (20, 14809),

Gene: Lesedi\_20 Start: 14331, Stop: 15182, Start Num: 1  
Candidate Starts for Lesedi\_20:  
(Start: 1 @14331 has 195 MA's), (2, 14376), (6, 14601), (9, 14688), (11, 14706), (14, 14730), (17, 14835), (19, 14922), (20, 14970),

Gene: Licorice\_23 Start: 15483, Stop: 16334, Start Num: 1  
Candidate Starts for Licorice\_23:  
(Start: 1 @15483 has 195 MA's), (2, 15528), (6, 15753), (9, 15840), (11, 15858), (14, 15882), (17, 15987), (19, 16074), (20, 16122),

Gene: LilBib\_22 Start: 15413, Stop: 16264, Start Num: 1  
Candidate Starts for LilBib\_22:  
(Start: 1 @15413 has 195 MA's), (2, 15458), (6, 15683), (9, 15770), (11, 15788), (14, 15812), (17, 15917), (19, 16004),

Gene: Lockley\_21 Start: 14508, Stop: 15359, Start Num: 1  
Candidate Starts for Lockley\_21:  
(Start: 1 @14508 has 195 MA's), (2, 14553), (6, 14778), (9, 14865), (11, 14883), (14, 14907), (17, 15012), (19, 15099),

Gene: Lopton\_22 Start: 15932, Stop: 16783, Start Num: 1  
Candidate Starts for Lopton\_22:  
(Start: 1 @15932 has 195 MA's), (2, 15977), (6, 16202), (9, 16289), (11, 16307), (14, 16331), (17, 16436), (19, 16523), (20, 16571),

Gene: MPlant7149\_20 Start: 14142, Stop: 14993, Start Num: 1  
Candidate Starts for MPlant7149\_20:  
(Start: 1 @14142 has 195 MA's), (2, 14187), (6, 14412), (9, 14499), (11, 14517), (14, 14541), (17, 14646), (19, 14733), (20, 14781),

Gene: Magnar\_21 Start: 14289, Stop: 15140, Start Num: 1  
Candidate Starts for Magnar\_21:  
(Start: 1 @14289 has 195 MA's), (2, 14334), (6, 14559), (9, 14646), (11, 14664), (14, 14688), (17, 14793), (19, 14880), (20, 14928),

Gene: Magnito\_20 Start: 14053, Stop: 14904, Start Num: 1  
Candidate Starts for Magnito\_20:  
(Start: 1 @14053 has 195 MA's), (2, 14098), (6, 14323), (9, 14410), (11, 14428), (14, 14452), (17, 14557), (19, 14644),

Gene: Makemake\_21 Start: 15782, Stop: 16630, Start Num: 1  
Candidate Starts for Makemake\_21:

(Start: 1 @15782 has 195 MA's), (2, 15827), (6, 16052), (9, 16139), (11, 16157), (14, 16181), (17, 16286), (18, 16358), (24, 16508), (28, 16613), (29, 16616),

Gene: Manatee\_22 Start: 14804, Stop: 15652, Start Num: 1

Candidate Starts for Manatee\_22:

(Start: 1 @14804 has 195 MA's), (2, 14849), (6, 15074), (9, 15161), (11, 15179), (14, 15203), (17, 15308), (18, 15380), (24, 15530), (28, 15635), (29, 15638),

Gene: Marcell\_21 Start: 14802, Stop: 15653, Start Num: 1

Candidate Starts for Marcell\_21:

(Start: 1 @14802 has 195 MA's), (2, 14847), (6, 15072), (9, 15159), (11, 15177), (14, 15201), (17, 15306), (19, 15393), (20, 15441),

Gene: Marchy\_19 Start: 14132, Stop: 14980, Start Num: 1

Candidate Starts for Marchy\_19:

(Start: 1 @14132 has 195 MA's), (2, 14177), (6, 14402), (9, 14489), (11, 14507), (14, 14531), (17, 14636), (18, 14708), (24, 14858), (28, 14963), (29, 14966),

Gene: Marge\_22 Start: 15028, Stop: 15879, Start Num: 1

Candidate Starts for Marge\_22:

(Start: 1 @15028 has 195 MA's), (2, 15073), (6, 15298), (9, 15385), (11, 15403), (14, 15427), (17, 15532), (19, 15619), (20, 15667),

Gene: Maroc7\_20 Start: 14314, Stop: 15165, Start Num: 1

Candidate Starts for Maroc7\_20:

(Start: 1 @14314 has 195 MA's), (2, 14359), (6, 14584), (9, 14671), (11, 14689), (14, 14713), (17, 14818), (19, 14905), (20, 14953),

Gene: Marsha\_21 Start: 15070, Stop: 15921, Start Num: 1

Candidate Starts for Marsha\_21:

(Start: 1 @15070 has 195 MA's), (2, 15115), (6, 15340), (9, 15427), (11, 15445), (14, 15469), (17, 15574), (19, 15661), (20, 15709),

Gene: MaryBeth\_21 Start: 14736, Stop: 15584, Start Num: 1

Candidate Starts for MaryBeth\_21:

(Start: 1 @14736 has 195 MA's), (2, 14781), (6, 15006), (9, 15093), (11, 15111), (14, 15135), (17, 15240), (24, 15462), (28, 15567), (29, 15570),

Gene: McGuire\_22 Start: 14623, Stop: 15471, Start Num: 1

Candidate Starts for McGuire\_22:

(Start: 1 @14623 has 195 MA's), (2, 14668), (6, 14893), (9, 14980), (11, 14998), (14, 15022), (18, 15199), (24, 15349), (28, 15454), (29, 15457),

Gene: MetalQZJ\_21 Start: 14736, Stop: 15584, Start Num: 1

Candidate Starts for MetalQZJ\_21:

(Start: 1 @14736 has 195 MA's), (2, 14781), (6, 15006), (9, 15093), (11, 15111), (14, 15135), (17, 15240), (24, 15462), (28, 15567), (29, 15570),

Gene: Michley\_21 Start: 14483, Stop: 15331, Start Num: 1

Candidate Starts for Michley\_21:

(Start: 1 @14483 has 195 MA's), (2, 14528), (6, 14753), (9, 14840), (11, 14858), (14, 14882), (18, 15059), (24, 15209), (28, 15314), (29, 15317),



Gene: Molly\_22 Start: 14344, Stop: 15195, Start Num: 1

Candidate Starts for Molly\_22:

(Start: 1 @14344 has 195 MA's), (2, 14389), (6, 14614), (9, 14701), (11, 14719), (14, 14743), (17, 14848), (19, 14935), (20, 14983),

Gene: Monet\_23 Start: 15839, Stop: 16690, Start Num: 1

Candidate Starts for Monet\_23:

(Start: 1 @15839 has 195 MA's), (2, 15884), (6, 16109), (9, 16196), (11, 16214), (13, 16232), (14, 16238), (17, 16343), (19, 16430), (20, 16478),

Gene: Moose\_20 Start: 14580, Stop: 15431, Start Num: 1

Candidate Starts for Moose\_20:

(Start: 1 @14580 has 195 MA's), (2, 14625), (6, 14850), (9, 14937), (11, 14955), (14, 14979), (17, 15084), (19, 15171), (20, 15219),

Gene: MrGordo\_21 Start: 14296, Stop: 15144, Start Num: 1

Candidate Starts for MrGordo\_21:

(Start: 1 @14296 has 195 MA's), (2, 14341), (6, 14566), (9, 14653), (11, 14671), (14, 14695), (22, 14989), (24, 15022),

Gene: Mryolo\_20 Start: 14330, Stop: 15181, Start Num: 1

Candidate Starts for Mryolo\_20:

(Start: 1 @14330 has 195 MA's), (2, 14375), (6, 14600), (9, 14687), (11, 14705), (14, 14729), (17, 14834), (19, 14921), (20, 14969),

Gene: Mule\_21 Start: 14618, Stop: 15469, Start Num: 1

Candidate Starts for Mule\_21:

(Start: 1 @14618 has 195 MA's), (2, 14663), (6, 14888), (9, 14975), (11, 14993), (14, 15017), (17, 15122), (19, 15209), (20, 15257),

Gene: Museum\_23 Start: 14637, Stop: 15488, Start Num: 1

Candidate Starts for Museum\_23:

(Start: 1 @14637 has 195 MA's), (2, 14682), (6, 14907), (9, 14994), (11, 15012), (14, 15036), (17, 15141), (19, 15228), (20, 15276),

Gene: NEHalo\_21 Start: 14366, Stop: 15217, Start Num: 1

Candidate Starts for NEHalo\_21:

(Start: 1 @14366 has 195 MA's), (2, 14411), (6, 14636), (9, 14723), (11, 14741), (14, 14765), (17, 14870), (19, 14957), (20, 15005),

Gene: Naira\_22 Start: 16118, Stop: 16969, Start Num: 1

Candidate Starts for Naira\_22:

(Start: 1 @16118 has 195 MA's), (2, 16163), (6, 16388), (9, 16475), (11, 16493), (14, 16517), (17, 16622), (19, 16709), (20, 16757),

Gene: Nerujay\_22 Start: 15042, Stop: 15893, Start Num: 1

Candidate Starts for Nerujay\_22:

(Start: 1 @15042 has 195 MA's), (2, 15087), (6, 15312), (9, 15399), (11, 15417), (14, 15441), (17, 15546), (19, 15633), (20, 15681),

Gene: Nhonho\_21 Start: 14795, Stop: 15646, Start Num: 1

Candidate Starts for Nhonho\_21:

(Start: 1 @14795 has 195 MA's), (2, 14840), (6, 15065), (9, 15152), (11, 15170), (14, 15194), (17, 15299), (19, 15386), (20, 15434),

Gene: Niza\_23 Start: 15653, Stop: 16501, Start Num: 1

Candidate Starts for Niza\_23:

(Start: 1 @15653 has 195 MA's), (2, 15698), (6, 15923), (9, 16010), (11, 16028), (14, 16052), (18, 16229), (24, 16379), (28, 16484), (29, 16487),

Gene: Norz\_23 Start: 15289, Stop: 16140, Start Num: 1

Candidate Starts for Norz\_23:

(Start: 1 @15289 has 195 MA's), (2, 15334), (6, 15559), (9, 15646), (11, 15664), (14, 15688), (17, 15793), (19, 15880), (20, 15928),

Gene: Ohno789\_21 Start: 14436, Stop: 15287, Start Num: 1

Candidate Starts for Ohno789\_21:

(Start: 1 @14436 has 195 MA's), (2, 14481), (6, 14706), (9, 14793), (11, 14811), (14, 14835), (17, 14940), (19, 15027), (20, 15075),

Gene: Oogway\_20 Start: 14548, Stop: 15399, Start Num: 1

Candidate Starts for Oogway\_20:

(Start: 1 @14548 has 195 MA's), (2, 14593), (6, 14818), (9, 14905), (11, 14923), (14, 14947), (17, 15052), (19, 15139), (20, 15187),

Gene: PSullivan\_22 Start: 15046, Stop: 15897, Start Num: 1

Candidate Starts for PSullivan\_22:

(Start: 1 @15046 has 195 MA's), (2, 15091), (6, 15316), (9, 15403), (11, 15421), (14, 15445), (17, 15550), (19, 15637),

Gene: PacerPaul\_21 Start: 14813, Stop: 15661, Start Num: 1

Candidate Starts for PacerPaul\_21:

(Start: 1 @14813 has 195 MA's), (2, 14858), (6, 15083), (9, 15170), (11, 15188), (14, 15212), (17, 15317), (24, 15539), (28, 15644), (29, 15647),

Gene: Papez\_23 Start: 16265, Stop: 17116, Start Num: 1

Candidate Starts for Papez\_23:

(Start: 1 @16265 has 195 MA's), (2, 16310), (6, 16535), (9, 16622), (11, 16640), (14, 16664), (17, 16769), (20, 16904),

Gene: Paphu\_20 Start: 14002, Stop: 14853, Start Num: 1

Candidate Starts for Paphu\_20:

(Start: 1 @14002 has 195 MA's), (2, 14047), (6, 14272), (9, 14359), (11, 14377), (14, 14401), (17, 14506), (19, 14593), (20, 14641),

Gene: Paraselene\_20 Start: 14318, Stop: 15166, Start Num: 1

Candidate Starts for Paraselene\_20:

(Start: 1 @14318 has 195 MA's), (2, 14363), (6, 14588), (9, 14675), (11, 14693), (14, 14717), (17, 14822), (18, 14894), (24, 15044), (28, 15149), (29, 15152),

Gene: Pari\_22 Start: 14793, Stop: 15641, Start Num: 1

Candidate Starts for Pari\_22:

(Start: 1 @14793 has 195 MA's), (2, 14838), (6, 15063), (9, 15150), (11, 15168), (14, 15192), (18, 15369), (24, 15519), (28, 15624), (29, 15627),

Gene: Parliament\_20 Start: 14682, Stop: 15530, Start Num: 1

Candidate Starts for Parliament\_20:

(Start: 1 @14682 has 195 MA's), (2, 14727), (6, 14952), (9, 15039), (11, 15057), (14, 15081), (18, 15258), (24, 15408), (28, 15513), (29, 15516),

Gene: PascalRango\_20 Start: 14237, Stop: 15085, Start Num: 1

Candidate Starts for PascalRango\_20:

(Start: 1 @14237 has 195 MA's), (2, 14282), (6, 14507), (9, 14594), (11, 14612), (14, 14636), (17, 14741), (18, 14813), (22, 14930), (24, 14963), (28, 15068), (29, 15071),

Gene: PattyP\_23 Start: 14846, Stop: 15697, Start Num: 1

Candidate Starts for PattyP\_23:

(Start: 1 @14846 has 195 MA's), (2, 14891), (6, 15116), (9, 15203), (11, 15221), (14, 15245), (17, 15350), (19, 15437), (20, 15485),

Gene: Payneful\_20 Start: 14132, Stop: 14980, Start Num: 1

Candidate Starts for Payneful\_20:

(Start: 1 @14132 has 195 MA's), (2, 14177), (6, 14402), (9, 14489), (11, 14507), (14, 14531), (17, 14636), (18, 14708), (24, 14858), (28, 14963), (29, 14966),

Gene: Pelly\_22 Start: 15082, Stop: 15933, Start Num: 1

Candidate Starts for Pelly\_22:

(Start: 1 @15082 has 195 MA's), (2, 15127), (6, 15352), (9, 15439), (11, 15457), (14, 15481), (17, 15586), (19, 15673), (20, 15721),

Gene: Pepe\_22 Start: 15037, Stop: 15885, Start Num: 1

Candidate Starts for Pepe\_22:

(Start: 1 @15037 has 195 MA's), (2, 15082), (6, 15307), (9, 15394), (11, 15412), (14, 15436), (18, 15613), (24, 15763), (28, 15868), (29, 15871),

Gene: Perseus\_22 Start: 14701, Stop: 15552, Start Num: 1

Candidate Starts for Perseus\_22:

(Start: 1 @14701 has 195 MA's), (2, 14746), (6, 14971), (9, 15058), (11, 15076), (14, 15100), (17, 15205), (19, 15292), (20, 15340),

Gene: Peterson\_24 Start: 16292, Stop: 17143, Start Num: 1

Candidate Starts for Peterson\_24:

(Start: 1 @16292 has 195 MA's), (2, 16337), (6, 16562), (9, 16649), (11, 16667), (14, 16691), (17, 16796), (19, 16883),

Gene: Petp2012\_23 Start: 15514, Stop: 16365, Start Num: 1

Candidate Starts for Petp2012\_23:

(Start: 1 @15514 has 195 MA's), (2, 15559), (6, 15784), (9, 15871), (11, 15889), (14, 15913), (17, 16018), (19, 16105), (20, 16153),

Gene: Petruccio\_21 Start: 14543, Stop: 15394, Start Num: 1

Candidate Starts for Petruccio\_21:

(Start: 1 @14543 has 195 MA's), (2, 14588), (6, 14813), (9, 14900), (11, 14918), (14, 14942), (17, 15047), (19, 15134), (20, 15182),

Gene: PherrisBueller\_22 Start: 14466, Stop: 15314, Start Num: 1

Candidate Starts for PherrisBueller\_22:

(Start: 1 @14466 has 195 MA's), (2, 14511), (6, 14736), (9, 14823), (11, 14841), (14, 14865), (17, 14970), (18, 15042), (24, 15192), (28, 15297), (29, 15300),

Gene: Phlei\_18 Start: 15680, Stop: 16519, Start Num: 1

Candidate Starts for Phlei\_18:

(Start: 1 @15680 has 195 MA's), (3, 15731), (4, 15770), (7, 15956), (8, 16028), (10, 16043), (12, 16067), (15, 16082), (16, 16094), (17, 16181), (21, 16316), (23, 16388), (25, 16463), (27, 16505), (29, 16511),

Gene: PhrostyMug\_21 Start: 14615, Stop: 15466, Start Num: 1

Candidate Starts for PhrostyMug\_21:

(Start: 1 @14615 has 195 MA's), (2, 14660), (6, 14885), (9, 14972), (11, 14990), (14, 15014), (17, 15119), (19, 15206), (20, 15254),

Gene: PinkPlastic\_20 Start: 14380, Stop: 15231, Start Num: 1

Candidate Starts for PinkPlastic\_20:

(Start: 1 @14380 has 195 MA's), (2, 14425), (6, 14650), (9, 14737), (11, 14755), (14, 14779), (17, 14884), (19, 14971), (20, 15019),

Gene: Pinto\_23 Start: 14697, Stop: 15545, Start Num: 1

Candidate Starts for Pinto\_23:

(Start: 1 @14697 has 195 MA's), (2, 14742), (6, 14967), (9, 15054), (11, 15072), (14, 15096), (18, 15273), (24, 15423), (28, 15528), (29, 15531),

Gene: Pippin\_23 Start: 14949, Stop: 15800, Start Num: 1

Candidate Starts for Pippin\_23:

(Start: 1 @14949 has 195 MA's), (2, 14994), (6, 15219), (9, 15306), (11, 15324), (14, 15348), (17, 15453), (19, 15540), (20, 15588),

Gene: Pita2\_23 Start: 15046, Stop: 15897, Start Num: 1

Candidate Starts for Pita2\_23:

(Start: 1 @15046 has 195 MA's), (2, 15091), (6, 15316), (9, 15403), (11, 15421), (14, 15445), (17, 15550), (19, 15637),

Gene: QTRlifeCrisis\_24 Start: 15023, Stop: 15874, Start Num: 1

Candidate Starts for QTRlifeCrisis\_24:

(Start: 1 @15023 has 195 MA's), (2, 15068), (6, 15293), (9, 15380), (11, 15398), (14, 15422), (17, 15527), (19, 15614), (20, 15662),

Gene: Rajelicia\_21 Start: 14831, Stop: 15679, Start Num: 1

Candidate Starts for Rajelicia\_21:

(Start: 1 @14831 has 195 MA's), (2, 14876), (6, 15101), (9, 15188), (11, 15206), (14, 15230), (18, 15407), (24, 15557), (28, 15662), (29, 15665),

Gene: Rhynn\_21 Start: 14624, Stop: 15475, Start Num: 1

Candidate Starts for Rhynn\_21:

(Start: 1 @14624 has 195 MA's), (2, 14669), (6, 14894), (9, 14981), (11, 14999), (14, 15023), (17, 15128), (19, 15215), (20, 15263),

Gene: RidgeCB\_21 Start: 14398, Stop: 15249, Start Num: 1

Candidate Starts for RidgeCB\_21:

(Start: 1 @14398 has 195 MA's), (2, 14443), (6, 14668), (9, 14755), (11, 14773), (14, 14797), (17, 14902), (19, 14989), (20, 15037),

Gene: Ringer\_21 Start: 14882, Stop: 15733, Start Num: 1

Candidate Starts for Ringer\_21:

(Start: 1 @14882 has 195 MA's), (2, 14927), (6, 15152), (9, 15239), (11, 15257), (14, 15281), (17, 15386), (19, 15473), (20, 15521),

Gene: Rohr\_22 Start: 14821, Stop: 15672, Start Num: 1

Candidate Starts for Rohr\_22:

(Start: 1 @14821 has 195 MA's), (2, 14866), (6, 15091), (9, 15178), (11, 15196), (14, 15220), (17, 15325), (19, 15412), (20, 15460),

Gene: Rubeus\_22 Start: 14656, Stop: 15507, Start Num: 1

Candidate Starts for Rubeus\_22:

(Start: 1 @14656 has 195 MA's), (2, 14701), (6, 14926), (9, 15013), (11, 15031), (14, 15055), (17, 15160), (19, 15247), (20, 15295),

Gene: Rufus\_22 Start: 14989, Stop: 15840, Start Num: 1

Candidate Starts for Rufus\_22:

(Start: 1 @14989 has 195 MA's), (2, 15034), (6, 15259), (9, 15346), (11, 15364), (14, 15388), (17, 15493), (19, 15580), (20, 15628),

Gene: Ruotula\_20 Start: 14826, Stop: 15677, Start Num: 1

Candidate Starts for Ruotula\_20:

(Start: 1 @14826 has 195 MA's), (2, 14871), (6, 15096), (9, 15183), (11, 15201), (14, 15225), (17, 15330), (19, 15417), (20, 15465),

Gene: Rutherferd\_23 Start: 15169, Stop: 16020, Start Num: 1

Candidate Starts for Rutherferd\_23:

(Start: 1 @15169 has 195 MA's), (2, 15214), (6, 15439), (9, 15526), (11, 15544), (12, 15559), (14, 15568), (17, 15673), (19, 15760), (20, 15808),

Gene: STLscum\_22 Start: 15032, Stop: 15883, Start Num: 1

Candidate Starts for STLscum\_22:

(Start: 1 @15032 has 195 MA's), (2, 15077), (6, 15302), (9, 15389), (11, 15407), (14, 15431), (17, 15536), (19, 15623), (20, 15671),

Gene: Sagefire\_22 Start: 15429, Stop: 16280, Start Num: 1

Candidate Starts for Sagefire\_22:

(Start: 1 @15429 has 195 MA's), (2, 15474), (6, 15699), (9, 15786), (11, 15804), (14, 15828), (17, 15933), (19, 16020), (20, 16068),

Gene: Sandaddy\_20 Start: 14544, Stop: 15395, Start Num: 1

Candidate Starts for Sandaddy\_20:

(Start: 1 @14544 has 195 MA's), (2, 14589), (6, 14814), (9, 14901), (11, 14919), (14, 14943), (17, 15048), (19, 15135), (20, 15183),

Gene: SarFire\_21 Start: 14698, Stop: 15546, Start Num: 1

Candidate Starts for SarFire\_21:

(Start: 1 @14698 has 195 MA's), (2, 14743), (6, 14968), (9, 15055), (11, 15073), (14, 15097), (17, 15202), (18, 15274), (24, 15424), (28, 15529), (29, 15532),

Gene: Scowl\_22 Start: 15095, Stop: 15943, Start Num: 1

Candidate Starts for Scowl\_22:

(Start: 1 @15095 has 195 MA's), (2, 15140), (6, 15365), (9, 15452), (11, 15470), (14, 15494), (17, 15599), (18, 15671), (24, 15821), (28, 15926), (29, 15929),

Gene: Seabiscuit\_23 Start: 14630, Stop: 15478, Start Num: 1

Candidate Starts for Seabiscuit\_23:

(Start: 1 @14630 has 195 MA's), (2, 14675), (6, 14900), (9, 14987), (11, 15005), (14, 15029), (18, 15206), (24, 15356), (28, 15461), (29, 15464),

Gene: Seanderson\_22 Start: 15065, Stop: 15916, Start Num: 1

Candidate Starts for Seanderson\_22:

(Start: 1 @15065 has 195 MA's), (2, 15110), (6, 15335), (9, 15422), (11, 15440), (14, 15464), (17, 15569), (19, 15656), (20, 15704),

Gene: ShortQueendom\_20 Start: 14504, Stop: 15355, Start Num: 1

Candidate Starts for ShortQueendom\_20:

(Start: 1 @14504 has 195 MA's), (2, 14549), (6, 14774), (9, 14861), (11, 14879), (14, 14903), (17, 15008), (19, 15095), (20, 15143),

Gene: Sibs6\_23 Start: 15141, Stop: 15992, Start Num: 1

Candidate Starts for Sibs6\_23:

(Start: 1 @15141 has 195 MA's), (2, 15186), (6, 15411), (9, 15498), (11, 15516), (14, 15540), (17, 15645), (19, 15732), (20, 15780),

Gene: SkiPole\_23 Start: 14718, Stop: 15566, Start Num: 1

Candidate Starts for SkiPole\_23:

(Start: 1 @14718 has 195 MA's), (2, 14763), (6, 14988), (9, 15075), (11, 15093), (14, 15117), (18, 15294), (24, 15444), (28, 15549), (29, 15552),

Gene: Slagathor\_22 Start: 14493, Stop: 15344, Start Num: 1

Candidate Starts for Slagathor\_22:

(Start: 1 @14493 has 195 MA's), (2, 14538), (6, 14763), (9, 14850), (11, 14868), (14, 14892), (17, 14997), (19, 15084), (20, 15132),

Gene: Smairt\_22 Start: 15324, Stop: 16175, Start Num: 1

Candidate Starts for Smairt\_22:

(Start: 1 @15324 has 195 MA's), (2, 15369), (6, 15594), (9, 15681), (11, 15699), (14, 15723), (17, 15828), (19, 15915), (20, 15963),

Gene: Smeagol\_23 Start: 15913, Stop: 16764, Start Num: 1

Candidate Starts for Smeagol\_23:

(Start: 1 @15913 has 195 MA's), (6, 16183), (9, 16270), (11, 16288), (14, 16312), (17, 16417), (19, 16504),

Gene: Snazzy\_19 Start: 14013, Stop: 14864, Start Num: 1

Candidate Starts for Snazzy\_19:

(Start: 1 @14013 has 195 MA's), (2, 14058), (6, 14283), (9, 14370), (11, 14388), (14, 14412), (17, 14517), (19, 14604), (20, 14652),

Gene: Solon\_21 Start: 15176, Stop: 16027, Start Num: 1

Candidate Starts for Solon\_21:

(Start: 1 @15176 has 195 MA's), (2, 15221), (6, 15446), (9, 15533), (11, 15551), (14, 15575), (17, 15680), (19, 15767), (20, 15815),

Gene: Sorpresa\_20 Start: 14544, Stop: 15395, Start Num: 1

Candidate Starts for Sorpresa\_20:

(Start: 1 @14544 has 195 MA's), (2, 14589), (6, 14814), (9, 14901), (11, 14919), (14, 14943), (17, 15048), (19, 15135), (20, 15183),

Gene: SpikeBT\_23 Start: 15480, Stop: 16331, Start Num: 1

Candidate Starts for SpikeBT\_23:

(Start: 1 @15480 has 195 MA's), (2, 15525), (6, 15750), (9, 15837), (11, 15855), (14, 15879), (17, 15984), (19, 16071), (20, 16119),

Gene: Squee\_22 Start: 15314, Stop: 16165, Start Num: 1

Candidate Starts for Squee\_22:

(Start: 1 @15314 has 195 MA's), (2, 15359), (6, 15584), (9, 15671), (11, 15689), (14, 15713), (17, 15818), (19, 15905), (20, 15953),

Gene: StewieG\_20 Start: 14388, Stop: 15239, Start Num: 1

Candidate Starts for StewieG\_20:

(Start: 1 @14388 has 195 MA's), (2, 14433), (6, 14658), (9, 14745), (11, 14763), (14, 14787), (17, 14892), (19, 14979), (20, 15027),

Gene: StrongArm\_20 Start: 15565, Stop: 16416, Start Num: 1

Candidate Starts for StrongArm\_20:

(Start: 1 @15565 has 195 MA's), (2, 15610), (6, 15835), (9, 15922), (11, 15940), (14, 15964), (17, 16069), (19, 16156), (20, 16204),

Gene: Sumter\_20 Start: 14135, Stop: 14986, Start Num: 1

Candidate Starts for Sumter\_20:

(Start: 1 @14135 has 195 MA's), (2, 14180), (6, 14405), (9, 14492), (11, 14510), (14, 14534), (17, 14639), (19, 14726), (20, 14774),

Gene: Sunshine924\_20 Start: 14119, Stop: 14970, Start Num: 1

Candidate Starts for Sunshine924\_20:

(Start: 1 @14119 has 195 MA's), (2, 14164), (6, 14389), (9, 14476), (11, 14494), (14, 14518), (17, 14623), (19, 14710), (20, 14758),

Gene: SwissCheese\_21 Start: 14580, Stop: 15431, Start Num: 1

Candidate Starts for SwissCheese\_21:

(Start: 1 @14580 has 195 MA's), (2, 14625), (6, 14850), (9, 14937), (11, 14955), (14, 14979), (17, 15084), (19, 15171), (20, 15219),

Gene: Switzer\_22 Start: 14736, Stop: 15584, Start Num: 1

Candidate Starts for Switzer\_22:

(Start: 1 @14736 has 195 MA's), (2, 14781), (6, 15006), (9, 15093), (11, 15111), (14, 15135), (18, 15312), (24, 15462), (28, 15567), (29, 15570),

Gene: Swole\_23 Start: 15046, Stop: 15897, Start Num: 1

Candidate Starts for Swole\_23:

(Start: 1 @15046 has 195 MA's), (2, 15091), (6, 15316), (9, 15403), (11, 15421), (14, 15445), (17, 15550), (19, 15637),

Gene: Target\_23 Start: 15387, Stop: 16238, Start Num: 1

Candidate Starts for Target\_23:

(Start: 1 @15387 has 195 MA's), (2, 15432), (6, 15657), (9, 15744), (11, 15762), (14, 15786), (17, 15891), (19, 15978), (20, 16026),

Gene: Tasp14\_22 Start: 14825, Stop: 15673, Start Num: 1

Candidate Starts for Tasp14\_22:

(Start: 1 @14825 has 195 MA's), (2, 14870), (6, 15095), (9, 15182), (11, 15200), (14, 15224), (18, 15401), (24, 15551), (28, 15656), (29, 15659),

Gene: Teodoridan\_19 Start: 13952, Stop: 14803, Start Num: 1

Candidate Starts for Teodoridan\_19:

(Start: 1 @13952 has 195 MA's), (2, 13997), (6, 14222), (9, 14309), (11, 14327), (14, 14351), (17, 14456), (19, 14543), (20, 14591),

Gene: TheloniousMonk\_23 Start: 15860, Stop: 16711, Start Num: 1

Candidate Starts for TheloniousMonk\_23:

(Start: 1 @15860 has 195 MA's), (2, 15905), (6, 16130), (9, 16217), (11, 16235), (14, 16259), (17, 16364), (19, 16451), (20, 16499),

Gene: Thor\_21 Start: 14698, Stop: 15546, Start Num: 1

Candidate Starts for Thor\_21:

(Start: 1 @14698 has 195 MA's), (2, 14743), (6, 14968), (9, 15055), (11, 15073), (14, 15097), (17, 15202), (18, 15274), (24, 15424), (28, 15529), (29, 15532),

Gene: Topgun\_21 Start: 14300, Stop: 15151, Start Num: 1

Candidate Starts for Topgun\_21:

(Start: 1 @14300 has 195 MA's), (2, 14345), (6, 14570), (9, 14657), (11, 14675), (14, 14699), (17, 14804), (19, 14891), (20, 14939),

Gene: Tote\_23 Start: 15046, Stop: 15897, Start Num: 1

Candidate Starts for Tote\_23:

(Start: 1 @15046 has 195 MA's), (2, 15091), (6, 15316), (9, 15403), (11, 15421), (14, 15445), (17, 15550), (19, 15637),

Gene: Traft412\_23 Start: 15527, Stop: 16378, Start Num: 1

Candidate Starts for Traft412\_23:

(Start: 1 @15527 has 195 MA's), (2, 15572), (6, 15797), (9, 15884), (11, 15902), (14, 15926), (17, 16031), (19, 16118), (20, 16166),

Gene: Treddle\_23 Start: 15840, Stop: 16691, Start Num: 1

Candidate Starts for Treddle\_23:

(Start: 1 @15840 has 195 MA's), (2, 15885), (6, 16110), (9, 16197), (11, 16215), (13, 16233), (14, 16239), (17, 16344), (19, 16431), (20, 16479),

Gene: Tripl3t\_22 Start: 15525, Stop: 16376, Start Num: 1

Candidate Starts for Tripl3t\_22:

(Start: 1 @15525 has 195 MA's), (2, 15570), (6, 15795), (9, 15882), (11, 15900), (14, 15924), (17, 16029), (19, 16116), (20, 16164),

Gene: Trouble\_21 Start: 14886, Stop: 15737, Start Num: 1

Candidate Starts for Trouble\_21:

(Start: 1 @14886 has 195 MA's), (2, 14931), (6, 15156), (9, 15243), (11, 15261), (14, 15285), (17, 15390), (19, 15477), (20, 15525),



Gene: Turj99\_20 Start: 14324, Stop: 15175, Start Num: 1

Candidate Starts for Turj99\_20:

(Start: 1 @14324 has 195 MA's), (2, 14369), (6, 14594), (9, 14681), (11, 14699), (14, 14723), (17, 14828), (19, 14915),

Gene: TwoPeat\_21 Start: 14839, Stop: 15690, Start Num: 1

Candidate Starts for TwoPeat\_21:

(Start: 1 @14839 has 195 MA's), (2, 14884), (6, 15109), (9, 15196), (11, 15214), (14, 15238), (17, 15343), (19, 15430), (20, 15478),

Gene: U2\_21 Start: 14742, Stop: 15590, Start Num: 1

Candidate Starts for U2\_21:

(Start: 1 @14742 has 195 MA's), (2, 14787), (6, 15012), (9, 15099), (11, 15117), (14, 15141), (18, 15318), (24, 15468), (28, 15573), (29, 15576),

Gene: Violet\_20 Start: 15131, Stop: 15982, Start Num: 1

Candidate Starts for Violet\_20:

(Start: 1 @15131 has 195 MA's), (2, 15176), (6, 15401), (9, 15488), (11, 15506), (14, 15530), (17, 15635), (19, 15722), (20, 15770),

Gene: Watermelon\_23 Start: 15437, Stop: 16288, Start Num: 1

Candidate Starts for Watermelon\_23:

(Start: 1 @15437 has 195 MA's), (2, 15482), (6, 15707), (9, 15794), (11, 15812), (14, 15836), (17, 15941), (19, 16028), (20, 16076),

Gene: Wheeler\_21 Start: 14892, Stop: 15743, Start Num: 1

Candidate Starts for Wheeler\_21:

(Start: 1 @14892 has 195 MA's), (2, 14937), (6, 15162), (9, 15249), (11, 15267), (14, 15291), (17, 15396), (19, 15483), (20, 15531),

Gene: Wilkins\_21 Start: 14300, Stop: 15151, Start Num: 1

Candidate Starts for Wilkins\_21:

(Start: 1 @14300 has 195 MA's), (2, 14345), (6, 14570), (9, 14657), (11, 14675), (14, 14699), (17, 14804), (19, 14891), (20, 14939),

Gene: Zeeculate\_20 Start: 14578, Stop: 15429, Start Num: 1

Candidate Starts for Zeeculate\_20:

(Start: 1 @14578 has 195 MA's), (2, 14623), (6, 14848), (9, 14935), (11, 14953), (14, 14977), (17, 15082), (19, 15169), (20, 15217),

Gene: Zephyr\_21 Start: 14670, Stop: 15521, Start Num: 1

Candidate Starts for Zephyr\_21:

(Start: 1 @14670 has 195 MA's), (2, 14715), (6, 14940), (9, 15027), (11, 15045), (14, 15069), (17, 15174), (19, 15261), (20, 15309),

Gene: Zeuska\_22 Start: 15112, Stop: 15963, Start Num: 1

Candidate Starts for Zeuska\_22:

(Start: 1 @15112 has 195 MA's), (2, 15157), (6, 15382), (9, 15469), (11, 15487), (14, 15511), (17, 15616), (19, 15703), (20, 15751),