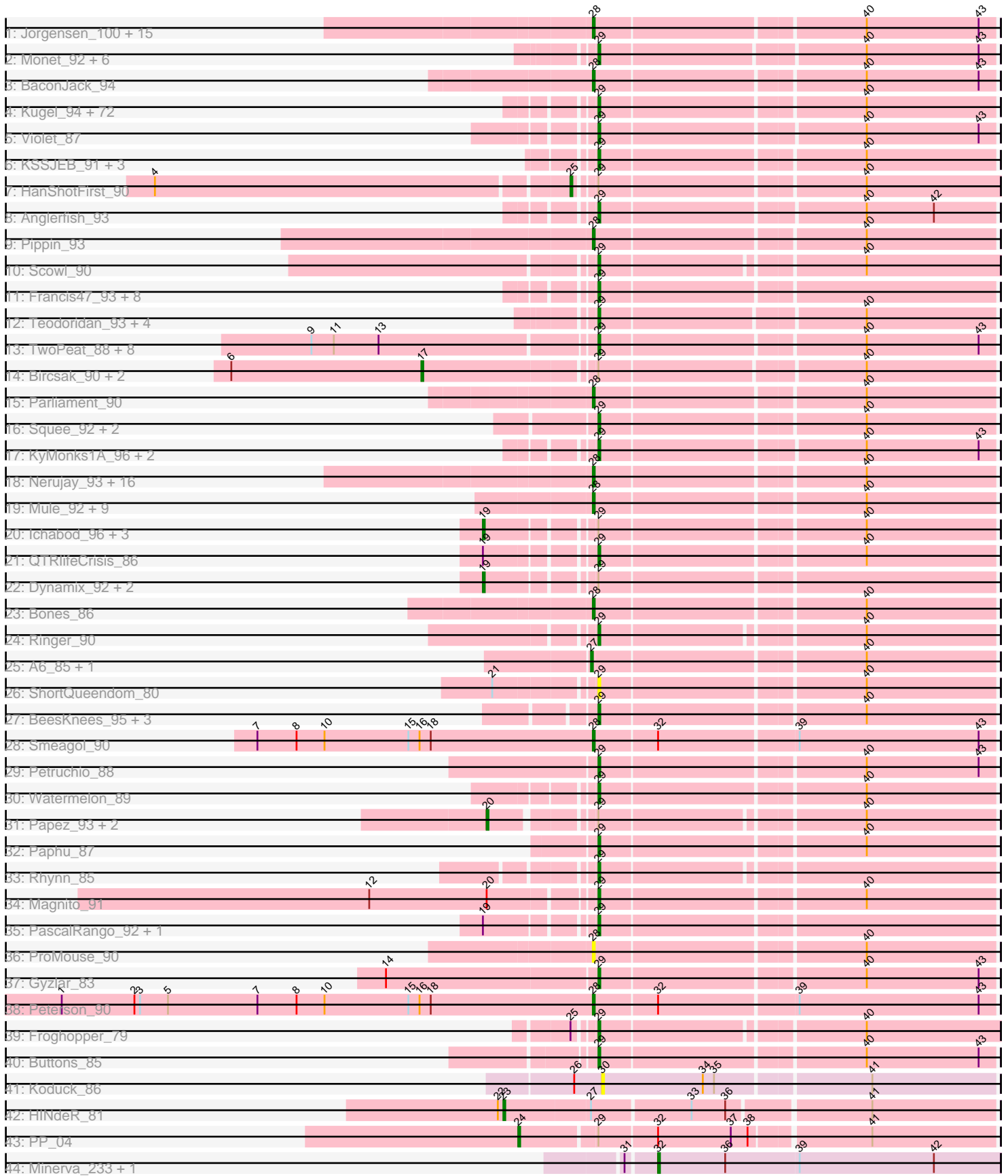


# Pham 202690



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 202690 Report

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

Pham number 202690 has 204 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Jorgensen\_100, Ashballer\_91, Applejack\_88, Edtherson\_87, Bob3\_90, Rutherferd\_91, Abrogate\_880, Sunshine924\_93, RidgeCB\_89, Topgun\_89, Gandalf20\_90, Wilkins\_90, StewieG\_86, SkiPole\_98, Solon\_83, Paraselene\_87
- Track 2 : Monet\_92, Treddle\_90, Inyanga\_82, Bxb1\_84, Homines\_83, Fushigi\_84, Crispicous1\_86
- Track 3 : BaconJack\_94
- Track 4 : Kugel\_94, Petp2012\_89, Arcanine\_94, Pelly\_94, Tripl3t\_91, Arlo\_96, Zephyr\_92, Bigfoot\_86, Ajay\_84, Ohno789\_95, Kykar\_88, Moose\_95, Atkinbua\_98, Kenmech\_93, Pepe\_86, Rajelicia\_89, Bruns\_96, BillKnuckles\_86, Acme\_91, MetalQZJ\_88, GageAP\_90, Ciao\_94, Sorpresa\_93, DrFeelGood\_85, Hermia\_84, Maroc7\_92, Sibs6\_95, Magnar\_91, Niza\_89, Alvin\_86, Euphoria\_95, Mkhusei\_91, Greg\_90, MaryBeth\_91, Carlyle\_91, MrGordo\_92, Fajezeel\_90, Fascinus\_86, STLscum\_100, DreamCatcher\_102, Adahisdi\_85, NEHalo\_88, Oogway\_87, Traft412\_86, lLeeKay\_91, Sanya\_81, BigPaolini\_85, Ruotula\_94, ConceptII\_97, SwissCheese\_95, Dussy\_87, GrecoEtereo\_92, Museum\_90, Dexes\_93, AFIS\_88, Rufus\_93, Bethlehem\_87, Corvo\_94, Eyeball\_94, Rubeus\_88, TheloniousMonk\_90, Hope4ever\_88, Sandaddy\_90, Abbyshoes\_89, Burton\_90, Chanagan\_91, Lopton\_88, Wheeler\_96, CactusRose\_96, Snazzy\_92, Forsytheast\_96, SpikeBT\_87, PattyP\_92
- Track 5 : Violet\_87
- Track 6 : KSSJEB\_91, Altman\_94, Kanely\_93, Seanderson\_89
- Track 7 : HanShotFirst\_90
- Track 8 : Anglerfish\_93
- Track 9 : Pippin\_93
- Track 10 : Scowl\_90
- Track 11 : Francis47\_93, LilBib\_80, Agaliana\_87, Slagathor\_92, Marcell\_83, Pinto\_87, Norz\_90, PacerPaul\_93, Seabiscuit\_95
- Track 12 : Teodoridan\_93, Marchy\_81, Espresso\_87, Mryolo\_84, Payneful\_77
- Track 13 : TwoPeat\_88, Molly\_89, PSullivan\_87, KBG\_87, Swole\_91, JuliaChild\_91, Tote\_86, Pita2\_91, Doom\_84
- Track 14 : Bircsak\_90, Gompeii16\_90, Gwendoluna\_91
- Track 15 : Parliament\_90
- Track 16 : Squee\_92, Naira\_96, Fenn\_97
- Track 17 : KyMonks1A\_96, Licorice\_91, Target\_90
- Track 18 : Nerujay\_93, Sagefire\_86, Barriga\_101, Lamina13\_93, HermioneGrange\_94, JC27\_94, Jerm2\_90, Marsha\_93, Nhonho\_87, HarryOW\_91, Rohr\_92, BigMau\_91, Sumter\_87, Marge\_87, Aeneas\_96, Hami1\_87, MPlant7149\_90

- Track 19 : Mule\_92, PhrostyMug\_94, Smairt\_97, Trouble\_90, Tasp14\_87, Perseus\_90, Bexan\_87, StrongArm\_88, JackSparrow\_92, Beatrix\_89
- Track 20 : Ichabod\_96, Thor\_98, SarFire\_98, BPBiebs31\_97
- Track 21 : QTRlifeCrisis\_86
- Track 22 : Dynamix\_92, Briton15\_95, Switzer\_91
- Track 23 : Bones\_86
- Track 24 : Ringer\_90
- Track 25 : A6\_85, BK1\_85
- Track 26 : ShortQueendom\_80
- Track 27 : BeesKnees\_95, Jasper\_93, Dreamboat\_93, McGuire\_92
- Track 28 : Smeagol\_90
- Track 29 : Petruccio\_88
- Track 30 : Watermelon\_89
- Track 31 : Papez\_93, Michley\_91, Graduation\_93
- Track 32 : Paphu\_87
- Track 33 : Rhynn\_85
- Track 34 : Magnito\_91
- Track 35 : PascalRango\_92, Manatee\_92
- Track 36 : ProMouse\_90
- Track 37 : Gyzlar\_83
- Track 38 : Peterson\_90
- Track 39 : Frogopper\_79
- Track 40 : Buttons\_85
- Track 41 : Koduck\_86
- Track 42 : HINdeR\_81
- Track 43 : PP\_04
- Track 44 : Minerva\_233, Dallas\_233

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

The start number called the most often in the published annotations is 29, it was called in 126 of the 194 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AFIS\_88, Abbyshoes\_89, Acme\_91, Adahisdi\_85, Agaliana\_87, Ajay\_84, Altman\_94, Alvin\_86, Anglerfish\_93, Arcanine\_94, Arlo\_96, Atkinbua\_98, BeesKnees\_95, Bethlehem\_87, BigPaolini\_85, Bigfoot\_86, BillKnuckles\_86, Bruns\_96, Burton\_90, Buttons\_85, Bxb1\_84, CactusRose\_96, Carlyle\_91, Chanagan\_91, Ciao\_94, ConceptII\_97, Corvo\_94, Crispicous1\_86, Dexes\_93, Doom\_84, DrFeelGood\_85, DreamCatcher\_102, Dreamboat\_93, Dussy\_87, Espresso\_87, Euphoria\_95, Eyeball\_94, Fajezeel\_90, Fascinus\_86, Fenn\_97, Forsytheast\_96, Francis47\_93, Frogopper\_79, Fushigi\_84, GageAP\_90, GrecoEtereo\_92, Greg\_90, Gyzlar\_83, Hermia\_84, Homines\_83, Hope4ever\_88, ILeeKay\_91, Inyanga\_82, Jasper\_93, JuliaChild\_91, KBG\_87, KSSJEB\_91, Kanely\_93, Kenmech\_93, Kugel\_94, KyMonks1A\_96, Kykar\_88, Licorice\_91, LilBib\_80, Lopton\_88, Magnar\_91, Magnito\_91, Manatee\_92, Marcell\_83, Marchy\_81, Maroc7\_92, MaryBeth\_91, McGuire\_92, MetalQZJ\_88, Mkhuseleli\_91, Molly\_89, Monet\_92, Moose\_95, MrGordo\_92, Mryolo\_84, Museum\_90, NEHalo\_88, Naira\_96, Niza\_89, Norz\_90, Ohno789\_95, Oogway\_87, PSullivan\_87, PacerPaul\_93, Paphu\_87, PascalRango\_92, PattyP\_92, Payneful\_77, Pelly\_94,

Pepe\_86, Petp2012\_89, Petruccio\_88, Pinto\_87, Pita2\_91, QTRlifeCrisis\_86, Rajelicia\_89, Rhynn\_85, Ringer\_90, Rubeus\_88, Rufus\_93, Ruotula\_94, STLscum\_100, Sandaddy\_90, Sanya\_81, Scowl\_90, Seabiscuit\_95, Seanderson\_89, ShortQueendom\_80, Sibs6\_95, Slagathor\_92, Snazzy\_92, Sorpresa\_93, SpikeBT\_87, Squee\_92, SwissCheese\_95, Swole\_91, Target\_90, Teodoridan\_93, TheloniousMonk\_90, Tote\_86, Traft412\_86, Treddle\_90, Tripl3t\_91, TwoPeat\_88, Violet\_87, Watermelon\_89, Wheeler\_96, Zephyr\_92,

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

- BPBiebs31\_97, Bircsak\_90, Briton15\_95, Dynamix\_92, Gompeii16\_90, Graduation\_93, Gwendoluna\_91, HanShotFirst\_90, Ichabod\_96, Michley\_91, PP\_04, Papez\_93, SarFire\_98, Switzer\_91, Thor\_98,

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

- A6\_85, Abrogate\_880, Aeneas\_96, Applejack\_88, Ashballer\_91, BK1\_85, BaconJack\_94, Barriga\_101, Beatrix\_89, Bexan\_87, BigMau\_91, Bob3\_90, Bones\_86, Dallas\_233, Edtherson\_87, Gandalf20\_90, HINdeR\_81, Hami1\_87, HarryOW\_91, HermioneGrange\_94, JC27\_94, JackSparrow\_92, Jerm2\_90, Jorgensen\_100, Koduck\_86, Lamina13\_93, MPlant7149\_90, Marge\_87, Marsha\_93, Minerva\_233, Mule\_92, Nerujay\_93, Nhonho\_87, Paraselene\_87, Parliament\_90, Perseus\_90, Peterson\_90, PhrostyMug\_94, Pippin\_93, ProMouse\_90, RidgeCB\_89, Rohr\_92, Rutherford\_91, Sagefire\_86, SkiPole\_98, Smairt\_97, Smeagol\_90, Solon\_83, StewieG\_86, StrongArm\_88, Sumter\_87, Sunshine924\_93, Tasp14\_87, Topgun\_89, Trouble\_90, Wilkins\_90,

### Summary by start number:

Start 17:

- Found in 3 of 204 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 3 of 194
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bircsak\_90 (A1), Gompeii16\_90 (A1), Gwendoluna\_91 (A1),

Start 19:

- Found in 10 of 204 ( 4.9% ) of genes in pham
- Manual Annotations of this start: 7 of 194
- Called 70.0% of time when present
- Phage (with cluster) where this start called: BPBiebs31\_97 (A1), Briton15\_95 (A1), Dynamix\_92 (A1), Ichabod\_96 (A1), SarFire\_98 (A1), Switzer\_91 (A1), Thor\_98 (A1),

Start 20:

- Found in 4 of 204 ( 2.0% ) of genes in pham
- Manual Annotations of this start: 3 of 194
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Graduation\_93 (A1), Michley\_91 (A1), Papez\_93 (A1),

Start 23:

- Found in 1 of 204 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 194
- Called 100.0% of time when present
- Phage (with cluster) where this start called: HINdeR\_81 (A7),

Start 24:

- Found in 1 of 204 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 194
- Called 100.0% of time when present
- Phage (with cluster) where this start called: PP\_04 (A7),

Start 25:

- Found in 2 of 204 ( 1.0% ) of genes in pham
- Manual Annotations of this start: 1 of 194
- Called 50.0% of time when present
- Phage (with cluster) where this start called: HanShotFirst\_90 (A1),

Start 27:

- Found in 3 of 204 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 2 of 194
- Called 66.7% of time when present
- Phage (with cluster) where this start called: A6\_85 (A1), BK1\_85 (A1),

Start 28:

- Found in 50 of 204 ( 24.5% ) of genes in pham
- Manual Annotations of this start: 48 of 194
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abrogate\_880 (A1), Aeneas\_96 (A1), Applejack\_88 (A1), Ashballer\_91 (A1), BaconJack\_94 (A1), Barriga\_101 (A1), Beatrix\_89 (A1), Bexan\_87 (A1), BigMau\_91 (A1), Bob3\_90 (A1), Bones\_86 (A1), Edtherson\_87 (A1), Gandalf20\_90 (A1), Hami1\_87 (A1), HarryOW\_91 (A1), HermioneGrange\_94 (A1), JC27\_94 (A1), JackSparrow\_92 (A1), Jerm2\_90 (A1), Jorgensen\_100 (A1), Lamina13\_93 (A1), MPlant7149\_90 (A1), Marge\_87 (A1), Marsha\_93 (A1), Mule\_92 (A1), Nerujay\_93 (A1), Nhonho\_87 (A1), Paraselene\_87 (A1), Parliament\_90 (A1), Perseus\_90 (A1), Peterson\_90 (A1), PhrostyMug\_94 (A1), Pippin\_93 (A1), ProMouse\_90 (A1), RidgeCB\_89 (A1), Rohr\_92 (A1), Rutherford\_91 (A1), Sagefire\_86 (A1), SkiPole\_98 (A1), Smairt\_97 (A1), Smeagol\_90 (A1), Solon\_83 (A1), StewieG\_86 (A1), StrongArm\_88 (A1), Sumter\_87 (A1), Sunshine924\_93 (A1), Tasp14\_87 (A1), Topgun\_89 (A1), Trouble\_90 (A1), Wilkins\_90 (A1),

Start 29:

- Found in 148 of 204 ( 72.5% ) of genes in pham
- Manual Annotations of this start: 126 of 194
- Called 89.9% of time when present
- Phage (with cluster) where this start called: AFIS\_88 (A1), Abbyshoes\_89 (A1), Acme\_91 (A1), Adahisdi\_85 (A1), Agaliana\_87 (A1), Ajay\_84 (A1), Altman\_94 (A1), Alvin\_86 (A1), Anglerfish\_93 (A1), Arcanine\_94 (A1), Arlo\_96 (A1), Atkinbua\_98 (A1), BeesKnees\_95 (A1), Bethlehem\_87 (A1), BigPaolini\_85 (A1), Bigfoot\_86 (A1), BillKnuckles\_86 (A1), Bruns\_96 (A1), Burton\_90 (A1), Buttons\_85 (A1), Bxb1\_84 (A1), CactusRose\_96 (A1), Carlyle\_91 (A1), Chanagan\_91 (A1), Ciao\_94 (A1), ConceptII\_97 (A1), Corvo\_94 (A1), Crispicous1\_86 (A1), Dexes\_93 (A1), Doom\_84 (A1), DrFeelGood\_85 (A1), DreamCatcher\_102 (A1), Dreamboat\_93 (A1), Dussy\_87 (A1), Espresso\_87 (A1), Euphoria\_95 (A1), Eyeball\_94 (A1), Fajezeel\_90 (A1), Fascinus\_86 (A1), Fenn\_97 (A1), Forsytheast\_96 (A1), Francis47\_93 (A1), Froghopper\_79 (A1), Fushigi\_84 (A1), GageAP\_90 (A1), GrecoEtereo\_92 (A1), Greg\_90 (A1), Gyzlar\_83 (A1), Hermia\_84 (A1), Homines\_83 (A1), Hope4ever\_88

(A1), ILeeKay\_91 (A1), Inyanga\_82 (A1), Jasper\_93 (A1), JuliaChild\_91 (A1), KBG\_87 (A1), KSSJEB\_91 (A1), Kanely\_93 (A1), Kenmech\_93 (A1), Kugel\_94 (A1), KyMonks1A\_96 (A1), Kykar\_88 (A1), Licorice\_91 (A1), LilBib\_80 (A1), Lopton\_88 (A1), Magnar\_91 (A1), Magnito\_91 (A1), Manatee\_92 (A1), Marcell\_83 (A1), Marchy\_81 (A1), Maroc7\_92 (A1), MaryBeth\_91 (A1), McGuire\_92 (A1), MetalQZJ\_88 (A1), Mkhuseleli\_91 (A1), Molly\_89 (A1), Monet\_92 (A1), Moose\_95 (A1), MrGordo\_92 (A1), Mryolo\_84 (A1), Museum\_90 (A1), NEHalo\_88 (A1), Naira\_96 (A1), Niza\_89 (A1), Norz\_90 (A1), Ohno789\_95 (A1), Oogway\_87 (A1), PSullivan\_87 (A1), PacerPaul\_93 (A1), Paphu\_87 (A1), PascalRango\_92 (A1), PattyP\_92 (A1), Payneful\_77 (A1), Pelly\_94 (A1), Pepe\_86 (A1), Petp2012\_89 (A1), Petruccio\_88 (A1), Pinto\_87 (A1), Pita2\_91 (A1), QTRlifeCrisis\_86 (A1), Rajelicia\_89 (A1), Rhynn\_85 (A1), Ringer\_90 (A1), Rubeus\_88 (A1), Rufus\_93 (A1), Ruotula\_94 (A1), STLscum\_100 (A1), Sandaddy\_90 (A1), Sanya\_81 (A1), Scowl\_90 (A1), Seabiscuit\_95 (A1), Seanderson\_89 (A1), ShortQueendom\_80 (A1), Sibs6\_95 (A1), Slagathor\_92 (A1), Snazzy\_92 (A1), Sorpresa\_93 (A1), SpikeBT\_87 (A1), Squee\_92 (A1), SwissCheese\_95 (A1), Swole\_91 (A1), Target\_90 (A1), Teodoridan\_93 (A1), TheloniousMonk\_90 (A1), Tote\_86 (A1), Traft412\_86 (A1), Treddle\_90 (A1), Triplet3\_91 (A1), TwoPeat\_88 (A1), Violet\_87 (A1), Watermelon\_89 (A1), Wheeler\_96 (A1), Zephyr\_92 (A1),

Start 30:

- Found in 1 of 204 ( 0.5% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Koduck\_86 (A2),

Start 32:

- Found in 5 of 204 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 2 of 194
- Called 40.0% of time when present
- Phage (with cluster) where this start called: Dallas\_233 (J), Minerva\_233 (J),

### Summary by clusters:

There are 4 clusters represented in this pham: A1, J, A2, A7,

Info for manual annotations of cluster A1:

- Start number 17 was manually annotated 3 times for cluster A1.
- Start number 19 was manually annotated 7 times for cluster A1.
- Start number 20 was manually annotated 3 times for cluster A1.
- Start number 25 was manually annotated 1 time for cluster A1.
- Start number 27 was manually annotated 2 times for cluster A1.
- Start number 28 was manually annotated 48 times for cluster A1.
- Start number 29 was manually annotated 126 times for cluster A1.

Info for manual annotations of cluster A7:

- Start number 23 was manually annotated 1 time for cluster A7.
- Start number 24 was manually annotated 1 time for cluster A7.

Info for manual annotations of cluster J:

- Start number 32 was manually annotated 2 times for cluster J.

**Gene Information:**

Gene: A6\_85 Start: 49336, Stop: 49130, Start Num: 27

Candidate Starts for A6\_85:

(Start: 27 @49336 has 2 MA's), (40, 49198),

Gene: AFIS\_88 Start: 51338, Stop: 51135, Start Num: 29

Candidate Starts for AFIS\_88:

(Start: 29 @51338 has 126 MA's), (40, 51203),

Gene: Abbysshoes\_89 Start: 50942, Stop: 50739, Start Num: 29

Candidate Starts for Abbysshoes\_89:

(Start: 29 @50942 has 126 MA's), (40, 50807),

Gene: Abrogate\_880 Start: 50891, Stop: 51097, Start Num: 28

Candidate Starts for Abrogate\_880:

(Start: 28 @50891 has 48 MA's), (40, 51029), (43, 51089),

Gene: Acme\_91 Start: 51412, Stop: 51209, Start Num: 29

Candidate Starts for Acme\_91:

(Start: 29 @51412 has 126 MA's), (40, 51277),

Gene: Adahisdi\_85 Start: 51316, Stop: 51113, Start Num: 29

Candidate Starts for Adahisdi\_85:

(Start: 29 @51316 has 126 MA's), (40, 51181),

Gene: Aeneas\_96 Start: 52191, Stop: 52397, Start Num: 28

Candidate Starts for Aeneas\_96:

(Start: 28 @52191 has 48 MA's), (40, 52329),

Gene: Agaliana\_87 Start: 49294, Stop: 49091, Start Num: 29

Candidate Starts for Agaliana\_87:

(Start: 29 @49294 has 126 MA's),

Gene: Ajay\_84 Start: 49128, Stop: 48925, Start Num: 29

Candidate Starts for Ajay\_84:

(Start: 29 @49128 has 126 MA's), (40, 48993),

Gene: Altman\_94 Start: 52124, Stop: 51921, Start Num: 29

Candidate Starts for Altman\_94:

(Start: 29 @52124 has 126 MA's), (40, 51989),

Gene: Alvin\_86 Start: 49180, Stop: 48977, Start Num: 29

Candidate Starts for Alvin\_86:

(Start: 29 @49180 has 126 MA's), (40, 49045),

Gene: Anglerfish\_93 Start: 51993, Stop: 51790, Start Num: 29

Candidate Starts for Anglerfish\_93:

(Start: 29 @51993 has 126 MA's), (40, 51858), (42, 51822),

Gene: Applejack\_88 Start: 48130, Stop: 48336, Start Num: 28

Candidate Starts for Applejack\_88:  
(Start: 28 @48130 has 48 MA's), (40, 48268), (43, 48328),

Gene: Arcanine\_94 Start: 51887, Stop: 51687, Start Num: 29  
Candidate Starts for Arcanine\_94:  
(Start: 29 @51887 has 126 MA's), (40, 51755),

Gene: Arlo\_96 Start: 52566, Stop: 52363, Start Num: 29  
Candidate Starts for Arlo\_96:  
(Start: 29 @52566 has 126 MA's), (40, 52431),

Gene: Ashballer\_91 Start: 50593, Stop: 50799, Start Num: 28  
Candidate Starts for Ashballer\_91:  
(Start: 28 @50593 has 48 MA's), (40, 50731), (43, 50791),

Gene: Atkinbua\_98 Start: 52558, Stop: 52355, Start Num: 29  
Candidate Starts for Atkinbua\_98:  
(Start: 29 @52558 has 126 MA's), (40, 52423),

Gene: BK1\_85 Start: 49336, Stop: 49130, Start Num: 27  
Candidate Starts for BK1\_85:  
(Start: 27 @49336 has 2 MA's), (40, 49198),

Gene: BPBiubs31\_97 Start: 52824, Stop: 52570, Start Num: 19  
Candidate Starts for BPBiubs31\_97:  
(Start: 19 @52824 has 7 MA's), (Start: 29 @52773 has 126 MA's), (40, 52638),

Gene: BaconJack\_94 Start: 52144, Stop: 52350, Start Num: 28  
Candidate Starts for BaconJack\_94:  
(Start: 28 @52144 has 48 MA's), (40, 52282), (43, 52342),

Gene: Barriga\_101 Start: 51933, Stop: 52139, Start Num: 28  
Candidate Starts for Barriga\_101:  
(Start: 28 @51933 has 48 MA's), (40, 52071),

Gene: Beatrix\_89 Start: 50789, Stop: 50995, Start Num: 28  
Candidate Starts for Beatrix\_89:  
(Start: 28 @50789 has 48 MA's), (40, 50927),

Gene: BeesKnees\_95 Start: 51081, Stop: 50878, Start Num: 29  
Candidate Starts for BeesKnees\_95:  
(Start: 29 @51081 has 126 MA's), (40, 50946),

Gene: Bethlehem\_87 Start: 51847, Stop: 51644, Start Num: 29  
Candidate Starts for Bethlehem\_87:  
(Start: 29 @51847 has 126 MA's), (40, 51712),

Gene: Bexan\_87 Start: 50565, Stop: 50771, Start Num: 28  
Candidate Starts for Bexan\_87:  
(Start: 28 @50565 has 48 MA's), (40, 50703),

Gene: BigMau\_91 Start: 51153, Stop: 51362, Start Num: 28  
Candidate Starts for BigMau\_91:



(Start: 28 @51153 has 48 MA's), (40, 51291),

Gene: BigPaolini\_85 Start: 49205, Stop: 49005, Start Num: 29

Candidate Starts for BigPaolini\_85:

(Start: 29 @49205 has 126 MA's), (40, 49073),

Gene: Bigfoot\_86 Start: 51251, Stop: 51048, Start Num: 29

Candidate Starts for Bigfoot\_86:

(Start: 29 @51251 has 126 MA's), (40, 51116),

Gene: BillKnuckles\_86 Start: 51482, Stop: 51279, Start Num: 29

Candidate Starts for BillKnuckles\_86:

(Start: 29 @51482 has 126 MA's), (40, 51347),

Gene: Bircsak\_90 Start: 52909, Stop: 52619, Start Num: 17

Candidate Starts for Bircsak\_90:

(6, 53011), (Start: 17 @52909 has 3 MA's), (Start: 29 @52822 has 126 MA's), (40, 52687),

Gene: Bob3\_90 Start: 50587, Stop: 50793, Start Num: 28

Candidate Starts for Bob3\_90:

(Start: 28 @50587 has 48 MA's), (40, 50725), (43, 50785),

Gene: Bones\_86 Start: 51038, Stop: 51244, Start Num: 28

Candidate Starts for Bones\_86:

(Start: 28 @51038 has 48 MA's), (40, 51176),

Gene: Briton15\_95 Start: 52689, Stop: 52435, Start Num: 19

Candidate Starts for Briton15\_95:

(Start: 19 @52689 has 7 MA's), (Start: 29 @52638 has 126 MA's),

Gene: Bruns\_96 Start: 52614, Stop: 52411, Start Num: 29

Candidate Starts for Bruns\_96:

(Start: 29 @52614 has 126 MA's), (40, 52479),

Gene: Burton\_90 Start: 52230, Stop: 52027, Start Num: 29

Candidate Starts for Burton\_90:

(Start: 29 @52230 has 126 MA's), (40, 52095),

Gene: Buttons\_85 Start: 48633, Stop: 48430, Start Num: 29

Candidate Starts for Buttons\_85:

(Start: 29 @48633 has 126 MA's), (40, 48498), (43, 48438),

Gene: Bxb1\_84 Start: 48903, Stop: 49112, Start Num: 29

Candidate Starts for Bxb1\_84:

(Start: 29 @48903 has 126 MA's), (40, 49044), (43, 49104),

Gene: CactusRose\_96 Start: 52264, Stop: 52061, Start Num: 29

Candidate Starts for CactusRose\_96:

(Start: 29 @52264 has 126 MA's), (40, 52129),

Gene: Carlyle\_91 Start: 50831, Stop: 50628, Start Num: 29

Candidate Starts for Carlyle\_91:

(Start: 29 @50831 has 126 MA's), (40, 50696),

Gene: Chanagan\_91 Start: 50342, Stop: 50139, Start Num: 29  
Candidate Starts for Chanagan\_91:  
(Start: 29 @50342 has 126 MA's), (40, 50207),

Gene: Ciao\_94 Start: 50559, Stop: 50362, Start Num: 29  
Candidate Starts for Ciao\_94:  
(Start: 29 @50559 has 126 MA's), (40, 50430),

Gene: ConceptII\_97 Start: 52890, Stop: 52687, Start Num: 29  
Candidate Starts for ConceptII\_97:  
(Start: 29 @52890 has 126 MA's), (40, 52755),

Gene: Corvo\_94 Start: 52995, Stop: 52792, Start Num: 29  
Candidate Starts for Corvo\_94:  
(Start: 29 @52995 has 126 MA's), (40, 52860),

Gene: Crispicious1\_86 Start: 49167, Stop: 49370, Start Num: 29  
Candidate Starts for Crispicious1\_86:  
(Start: 29 @49167 has 126 MA's), (40, 49302), (43, 49362),

Gene: Dallas\_233 Start: 109177, Stop: 108995, Start Num: 32  
Candidate Starts for Dallas\_233:  
(31, 109192), (Start: 32 @109177 has 2 MA's), (36, 109141), (39, 109102), (42, 109030),

Gene: Dexes\_93 Start: 53941, Stop: 53738, Start Num: 29  
Candidate Starts for Dexes\_93:  
(Start: 29 @53941 has 126 MA's), (40, 53806),

Gene: Doom\_84 Start: 50622, Stop: 50419, Start Num: 29  
Candidate Starts for Doom\_84:  
(9, 50769), (11, 50757), (13, 50733), (Start: 29 @50622 has 126 MA's), (40, 50487), (43, 50427),

Gene: DrFeelGood\_85 Start: 49766, Stop: 49563, Start Num: 29  
Candidate Starts for DrFeelGood\_85:  
(Start: 29 @49766 has 126 MA's), (40, 49631),

Gene: DreamCatcher\_102 Start: 53024, Stop: 52821, Start Num: 29  
Candidate Starts for DreamCatcher\_102:  
(Start: 29 @53024 has 126 MA's), (40, 52889),

Gene: Dreamboat\_93 Start: 50459, Stop: 50256, Start Num: 29  
Candidate Starts for Dreamboat\_93:  
(Start: 29 @50459 has 126 MA's), (40, 50324),

Gene: Dussy\_87 Start: 50962, Stop: 50759, Start Num: 29  
Candidate Starts for Dussy\_87:  
(Start: 29 @50962 has 126 MA's), (40, 50827),

Gene: Dynamix\_92 Start: 50284, Stop: 50030, Start Num: 19  
Candidate Starts for Dynamix\_92:  
(Start: 19 @50284 has 7 MA's), (Start: 29 @50233 has 126 MA's),

Gene: Edtherson\_87 Start: 49832, Stop: 50038, Start Num: 28  
Candidate Starts for Edtherson\_87:  
(Start: 28 @49832 has 48 MA's), (40, 49970), (43, 50030),

Gene: Espresso\_87 Start: 50463, Stop: 50666, Start Num: 29  
Candidate Starts for Espresso\_87:  
(Start: 29 @50463 has 126 MA's), (40, 50598),

Gene: Euphoria\_95 Start: 53188, Stop: 52985, Start Num: 29  
Candidate Starts for Euphoria\_95:  
(Start: 29 @53188 has 126 MA's), (40, 53053),

Gene: Eyeball\_94 Start: 51846, Stop: 51643, Start Num: 29  
Candidate Starts for Eyeball\_94:  
(Start: 29 @51846 has 126 MA's), (40, 51711),

Gene: Fajezeel\_90 Start: 50702, Stop: 50499, Start Num: 29  
Candidate Starts for Fajezeel\_90:  
(Start: 29 @50702 has 126 MA's), (40, 50567),

Gene: Fascinus\_86 Start: 51761, Stop: 51558, Start Num: 29  
Candidate Starts for Fascinus\_86:  
(Start: 29 @51761 has 126 MA's), (40, 51626),

Gene: Fenn\_97 Start: 52841, Stop: 52638, Start Num: 29  
Candidate Starts for Fenn\_97:  
(Start: 29 @52841 has 126 MA's), (40, 52706),

Gene: Forsytheast\_96 Start: 52313, Stop: 52110, Start Num: 29  
Candidate Starts for Forsytheast\_96:  
(Start: 29 @52313 has 126 MA's), (40, 52178),

Gene: Francis47\_93 Start: 53565, Stop: 53362, Start Num: 29  
Candidate Starts for Francis47\_93:  
(Start: 29 @53565 has 126 MA's),

Gene: Froghopper\_79 Start: 47225, Stop: 47428, Start Num: 29  
Candidate Starts for Froghopper\_79:  
(Start: 25 @47216 has 1 MA's), (Start: 29 @47225 has 126 MA's), (40, 47357),

Gene: Fushigi\_84 Start: 48765, Stop: 48968, Start Num: 29  
Candidate Starts for Fushigi\_84:  
(Start: 29 @48765 has 126 MA's), (40, 48900), (43, 48960),

Gene: GageAP\_90 Start: 51509, Stop: 51306, Start Num: 29  
Candidate Starts for GageAP\_90:  
(Start: 29 @51509 has 126 MA's), (40, 51374),

Gene: Gandalf20\_90 Start: 50084, Stop: 50290, Start Num: 28  
Candidate Starts for Gandalf20\_90:  
(Start: 28 @50084 has 48 MA's), (40, 50222), (43, 50282),

Gene: Gompeii16\_90 Start: 52910, Stop: 52620, Start Num: 17

Candidate Starts for Gompeii16\_90:  
(6, 53012), (Start: 17 @52910 has 3 MA's), (Start: 29 @52823 has 126 MA's), (40, 52688),

Gene: Graduation\_93 Start: 51162, Stop: 50911, Start Num: 20  
Candidate Starts for Graduation\_93:  
(Start: 20 @51162 has 3 MA's), (Start: 29 @51114 has 126 MA's), (40, 50979),

Gene: GrecoEtereo\_92 Start: 51814, Stop: 51611, Start Num: 29  
Candidate Starts for GrecoEtereo\_92:  
(Start: 29 @51814 has 126 MA's), (40, 51679),

Gene: Greg\_90 Start: 50702, Stop: 50499, Start Num: 29  
Candidate Starts for Greg\_90:  
(Start: 29 @50702 has 126 MA's), (40, 50567),

Gene: Gwendoluna\_91 Start: 51399, Stop: 51109, Start Num: 17  
Candidate Starts for Gwendoluna\_91:  
(6, 51501), (Start: 17 @51399 has 3 MA's), (Start: 29 @51312 has 126 MA's), (40, 51177),

Gene: Gyzlar\_83 Start: 47405, Stop: 47608, Start Num: 29  
Candidate Starts for Gyzlar\_83:  
(14, 47294), (Start: 29 @47405 has 126 MA's), (40, 47540), (43, 47600),

Gene: HINdeR\_81 Start: 50361, Stop: 50110, Start Num: 23  
Candidate Starts for HINdeR\_81:  
(22, 50364), (Start: 23 @50361 has 1 MA's), (Start: 27 @50316 has 2 MA's), (33, 50265), (36, 50247),  
(41, 50175),

Gene: Hami1\_87 Start: 46210, Stop: 46416, Start Num: 28  
Candidate Starts for Hami1\_87:  
(Start: 28 @46210 has 48 MA's), (40, 46348),

Gene: HanShotFirst\_90 Start: 51379, Stop: 51594, Start Num: 25  
Candidate Starts for HanShotFirst\_90:  
(4, 51163), (Start: 25 @51379 has 1 MA's), (Start: 29 @51388 has 126 MA's), (40, 51523),

Gene: HarryOW\_91 Start: 51434, Stop: 51640, Start Num: 28  
Candidate Starts for HarryOW\_91:  
(Start: 28 @51434 has 48 MA's), (40, 51572),

Gene: Hermia\_84 Start: 49274, Stop: 49071, Start Num: 29  
Candidate Starts for Hermia\_84:  
(Start: 29 @49274 has 126 MA's), (40, 49139),

Gene: HermioneGrange\_94 Start: 51648, Stop: 51857, Start Num: 28  
Candidate Starts for HermioneGrange\_94:  
(Start: 28 @51648 has 48 MA's), (40, 51786),

Gene: Homines\_83 Start: 46852, Stop: 47055, Start Num: 29  
Candidate Starts for Homines\_83:  
(Start: 29 @46852 has 126 MA's), (40, 46987), (43, 47047),

Gene: Hope4ever\_88 Start: 50126, Stop: 49923, Start Num: 29

Candidate Starts for Hope4ever\_88:  
(Start: 29 @50126 has 126 MA's), (40, 49991),

Gene: ILeeKay\_91 Start: 50632, Stop: 50429, Start Num: 29  
Candidate Starts for ILeeKay\_91:  
(Start: 29 @50632 has 126 MA's), (40, 50497),

Gene: Ichabod\_96 Start: 52974, Stop: 52720, Start Num: 19  
Candidate Starts for Ichabod\_96:  
(Start: 19 @52974 has 7 MA's), (Start: 29 @52923 has 126 MA's), (40, 52788),

Gene: Inyanga\_82 Start: 49164, Stop: 49367, Start Num: 29  
Candidate Starts for Inyanga\_82:  
(Start: 29 @49164 has 126 MA's), (40, 49299), (43, 49359),

Gene: JC27\_94 Start: 50665, Stop: 50871, Start Num: 28  
Candidate Starts for JC27\_94:  
(Start: 28 @50665 has 48 MA's), (40, 50803),

Gene: JackSparrow\_92 Start: 50104, Stop: 50310, Start Num: 28  
Candidate Starts for JackSparrow\_92:  
(Start: 28 @50104 has 48 MA's), (40, 50242),

Gene: Jasper\_93 Start: 50345, Stop: 50142, Start Num: 29  
Candidate Starts for Jasper\_93:  
(Start: 29 @50345 has 126 MA's), (40, 50210),

Gene: Jerm2\_90 Start: 51717, Stop: 51926, Start Num: 28  
Candidate Starts for Jerm2\_90:  
(Start: 28 @51717 has 48 MA's), (40, 51855),

Gene: Jorgensen\_100 Start: 52124, Stop: 52330, Start Num: 28  
Candidate Starts for Jorgensen\_100:  
(Start: 28 @52124 has 48 MA's), (40, 52262), (43, 52322),

Gene: JuliaChild\_91 Start: 51435, Stop: 51232, Start Num: 29  
Candidate Starts for JuliaChild\_91:  
(9, 51582), (11, 51570), (13, 51546), (Start: 29 @51435 has 126 MA's), (40, 51300), (43, 51240),

Gene: KBG\_87 Start: 52193, Stop: 51990, Start Num: 29  
Candidate Starts for KBG\_87:  
(9, 52340), (11, 52328), (13, 52304), (Start: 29 @52193 has 126 MA's), (40, 52058), (43, 51998),

Gene: KSSJEB\_91 Start: 50745, Stop: 50542, Start Num: 29  
Candidate Starts for KSSJEB\_91:  
(Start: 29 @50745 has 126 MA's), (40, 50610),

Gene: Kanely\_93 Start: 51901, Stop: 51698, Start Num: 29  
Candidate Starts for Kanely\_93:  
(Start: 29 @51901 has 126 MA's), (40, 51766),

Gene: Kenmech\_93 Start: 52088, Stop: 51885, Start Num: 29  
Candidate Starts for Kenmech\_93:

(Start: 29 @52088 has 126 MA's), (40, 51953),

Gene: Koduck\_86 Start: 47511, Stop: 47308, Start Num: 30  
Candidate Starts for Koduck\_86:  
(26, 47526), (30, 47511), (34, 47457), (35, 47451), (41, 47373),

Gene: Kugel\_94 Start: 51995, Stop: 51792, Start Num: 29  
Candidate Starts for Kugel\_94:  
(Start: 29 @51995 has 126 MA's), (40, 51860),

Gene: KyMonks1A\_96 Start: 51763, Stop: 51560, Start Num: 29  
Candidate Starts for KyMonks1A\_96:  
(Start: 29 @51763 has 126 MA's), (40, 51628), (43, 51568),

Gene: Kykar\_88 Start: 49910, Stop: 49701, Start Num: 29  
Candidate Starts for Kykar\_88:  
(Start: 29 @49910 has 126 MA's), (40, 49769),

Gene: Lamina13\_93 Start: 51757, Stop: 51963, Start Num: 28  
Candidate Starts for Lamina13\_93:  
(Start: 28 @51757 has 48 MA's), (40, 51895),

Gene: Licorice\_91 Start: 52878, Stop: 52678, Start Num: 29  
Candidate Starts for Licorice\_91:  
(Start: 29 @52878 has 126 MA's), (40, 52746), (43, 52686),

Gene: LilBib\_80 Start: 49937, Stop: 49734, Start Num: 29  
Candidate Starts for LilBib\_80:  
(Start: 29 @49937 has 126 MA's),

Gene: Lopton\_88 Start: 52012, Stop: 51809, Start Num: 29  
Candidate Starts for Lopton\_88:  
(Start: 29 @52012 has 126 MA's), (40, 51877),

Gene: MPlant7149\_90 Start: 49878, Stop: 50087, Start Num: 28  
Candidate Starts for MPlant7149\_90:  
(Start: 28 @49878 has 48 MA's), (40, 50016),

Gene: Magnar\_91 Start: 51040, Stop: 50837, Start Num: 29  
Candidate Starts for Magnar\_91:  
(Start: 29 @51040 has 126 MA's), (40, 50905),

Gene: Magnito\_91 Start: 51185, Stop: 50982, Start Num: 29  
Candidate Starts for Magnito\_91:  
(12, 51299), (Start: 20 @51236 has 3 MA's), (Start: 29 @51185 has 126 MA's), (40, 51050),

Gene: Manatee\_92 Start: 50646, Stop: 50443, Start Num: 29  
Candidate Starts for Manatee\_92:  
(Start: 19 @50697 has 7 MA's), (Start: 29 @50646 has 126 MA's),

Gene: Marcell\_83 Start: 48789, Stop: 48586, Start Num: 29  
Candidate Starts for Marcell\_83:  
(Start: 29 @48789 has 126 MA's),

Gene: Marchy\_81 Start: 47255, Stop: 47052, Start Num: 29

Candidate Starts for Marchy\_81:

(Start: 29 @47255 has 126 MA's), (40, 47120),

Gene: Marge\_87 Start: 49768, Stop: 49974, Start Num: 28

Candidate Starts for Marge\_87:

(Start: 28 @49768 has 48 MA's), (40, 49906),

Gene: Maroc7\_92 Start: 52980, Stop: 52777, Start Num: 29

Candidate Starts for Maroc7\_92:

(Start: 29 @52980 has 126 MA's), (40, 52845),

Gene: Marsha\_93 Start: 52954, Stop: 53160, Start Num: 28

Candidate Starts for Marsha\_93:

(Start: 28 @52954 has 48 MA's), (40, 53092),

Gene: MaryBeth\_91 Start: 51469, Stop: 51266, Start Num: 29

Candidate Starts for MaryBeth\_91:

(Start: 29 @51469 has 126 MA's), (40, 51334),

Gene: McGuire\_92 Start: 50898, Stop: 50695, Start Num: 29

Candidate Starts for McGuire\_92:

(Start: 29 @50898 has 126 MA's), (40, 50763),

Gene: MetalQZJ\_88 Start: 51469, Stop: 51266, Start Num: 29

Candidate Starts for MetalQZJ\_88:

(Start: 29 @51469 has 126 MA's), (40, 51334),

Gene: Michley\_91 Start: 50597, Stop: 50346, Start Num: 20

Candidate Starts for Michley\_91:

(Start: 20 @50597 has 3 MA's), (Start: 29 @50549 has 126 MA's), (40, 50414),

Gene: Minerva\_233 Start: 107908, Stop: 107726, Start Num: 32

Candidate Starts for Minerva\_233:

(31, 107923), (Start: 32 @107908 has 2 MA's), (36, 107872), (39, 107833), (42, 107761),

Gene: Mkhuseli\_91 Start: 49763, Stop: 49557, Start Num: 29

Candidate Starts for Mkhuseli\_91:

(Start: 29 @49763 has 126 MA's), (40, 49625),

Gene: Molly\_89 Start: 49678, Stop: 49475, Start Num: 29

Candidate Starts for Molly\_89:

(9, 49825), (11, 49813), (13, 49789), (Start: 29 @49678 has 126 MA's), (40, 49543), (43, 49483),

Gene: Monet\_92 Start: 51735, Stop: 51938, Start Num: 29

Candidate Starts for Monet\_92:

(Start: 29 @51735 has 126 MA's), (40, 51870), (43, 51930),

Gene: Moose\_95 Start: 52313, Stop: 52110, Start Num: 29

Candidate Starts for Moose\_95:

(Start: 29 @52313 has 126 MA's), (40, 52178),

Gene: MrGordo\_92 Start: 50603, Stop: 50400, Start Num: 29  
Candidate Starts for MrGordo\_92:  
(Start: 29 @50603 has 126 MA's), (40, 50468),

Gene: Mryolo\_84 Start: 48769, Stop: 48972, Start Num: 29  
Candidate Starts for Mryolo\_84:  
(Start: 29 @48769 has 126 MA's), (40, 48904),

Gene: Mule\_92 Start: 49973, Stop: 50179, Start Num: 28  
Candidate Starts for Mule\_92:  
(Start: 28 @49973 has 48 MA's), (40, 50111),

Gene: Museum\_90 Start: 51040, Stop: 50837, Start Num: 29  
Candidate Starts for Museum\_90:  
(Start: 29 @51040 has 126 MA's), (40, 50905),

Gene: NEHalo\_88 Start: 50148, Stop: 49945, Start Num: 29  
Candidate Starts for NEHalo\_88:  
(Start: 29 @50148 has 126 MA's), (40, 50013),

Gene: Naira\_96 Start: 52973, Stop: 52770, Start Num: 29  
Candidate Starts for Naira\_96:  
(Start: 29 @52973 has 126 MA's), (40, 52838),

Gene: Nerujay\_93 Start: 51720, Stop: 51926, Start Num: 28  
Candidate Starts for Nerujay\_93:  
(Start: 28 @51720 has 48 MA's), (40, 51858),

Gene: Nhonho\_87 Start: 50646, Stop: 50852, Start Num: 28  
Candidate Starts for Nhonho\_87:  
(Start: 28 @50646 has 48 MA's), (40, 50784),

Gene: Niza\_89 Start: 51286, Stop: 51083, Start Num: 29  
Candidate Starts for Niza\_89:  
(Start: 29 @51286 has 126 MA's), (40, 51151),

Gene: Norz\_90 Start: 53476, Stop: 53273, Start Num: 29  
Candidate Starts for Norz\_90:  
(Start: 29 @53476 has 126 MA's),

Gene: Ohno789\_95 Start: 52428, Stop: 52225, Start Num: 29  
Candidate Starts for Ohno789\_95:  
(Start: 29 @52428 has 126 MA's), (40, 52293),

Gene: Oogway\_87 Start: 51358, Stop: 51155, Start Num: 29  
Candidate Starts for Oogway\_87:  
(Start: 29 @51358 has 126 MA's), (40, 51223),

Gene: PP\_04 Start: 1143, Stop: 901, Start Num: 24  
Candidate Starts for PP\_04:  
(Start: 24 @1143 has 1 MA's), (Start: 29 @1104 has 126 MA's), (Start: 32 @1074 has 2 MA's), (37, 1035), (38, 1026), (41, 966),



Gene: PSullivan\_87 Start: 49195, Stop: 48992, Start Num: 29  
Candidate Starts for PSullivan\_87:  
(9, 49342), (11, 49330), (13, 49306), (Start: 29 @49195 has 126 MA's), (40, 49060), (43, 49000),

Gene: PacerPaul\_93 Start: 52361, Stop: 52158, Start Num: 29  
Candidate Starts for PacerPaul\_93:  
(Start: 29 @52361 has 126 MA's),

Gene: Papez\_93 Start: 51585, Stop: 51337, Start Num: 20  
Candidate Starts for Papez\_93:  
(Start: 20 @51585 has 3 MA's), (Start: 29 @51537 has 126 MA's), (40, 51405),

Gene: Paphu\_87 Start: 49638, Stop: 49841, Start Num: 29  
Candidate Starts for Paphu\_87:  
(Start: 29 @49638 has 126 MA's), (40, 49773),

Gene: Paraselene\_87 Start: 49509, Stop: 49715, Start Num: 28  
Candidate Starts for Paraselene\_87:  
(Start: 28 @49509 has 48 MA's), (40, 49647), (43, 49707),

Gene: Parliament\_90 Start: 52239, Stop: 52445, Start Num: 28  
Candidate Starts for Parliament\_90:  
(Start: 28 @52239 has 48 MA's), (40, 52377),

Gene: PascalRango\_92 Start: 52074, Stop: 51871, Start Num: 29  
Candidate Starts for PascalRango\_92:  
(Start: 19 @52125 has 7 MA's), (Start: 29 @52074 has 126 MA's),

Gene: PattyP\_92 Start: 51679, Stop: 51476, Start Num: 29  
Candidate Starts for PattyP\_92:  
(Start: 29 @51679 has 126 MA's), (40, 51544),

Gene: Payneful\_77 Start: 46347, Stop: 46144, Start Num: 29  
Candidate Starts for Payneful\_77:  
(Start: 29 @46347 has 126 MA's), (40, 46212),

Gene: Pelly\_94 Start: 53346, Stop: 53143, Start Num: 29  
Candidate Starts for Pelly\_94:  
(Start: 29 @53346 has 126 MA's), (40, 53211),

Gene: Pepe\_86 Start: 50134, Stop: 49931, Start Num: 29  
Candidate Starts for Pepe\_86:  
(Start: 29 @50134 has 126 MA's), (40, 49999),

Gene: Perseus\_90 Start: 51769, Stop: 51975, Start Num: 28  
Candidate Starts for Perseus\_90:  
(Start: 28 @51769 has 48 MA's), (40, 51907),

Gene: Peterson\_90 Start: 51816, Stop: 51607, Start Num: 28  
Candidate Starts for Peterson\_90:  
(1, 52101), (2, 52062), (3, 52059), (5, 52044), (7, 51996), (8, 51975), (10, 51960), (15, 51915), (16, 51909), (18, 51903), (Start: 28 @51816 has 48 MA's), (Start: 32 @51783 has 2 MA's), (39, 51711), (43, 51615),

Gene: Petp2012\_89 Start: 51326, Stop: 51123, Start Num: 29  
Candidate Starts for Petp2012\_89:  
(Start: 29 @51326 has 126 MA's), (40, 51191),

Gene: Petruccio\_88 Start: 48718, Stop: 48515, Start Num: 29  
Candidate Starts for Petruccio\_88:  
(Start: 29 @48718 has 126 MA's), (40, 48583), (43, 48523),

Gene: PhrostyMug\_94 Start: 52143, Stop: 52349, Start Num: 28  
Candidate Starts for PhrostyMug\_94:  
(Start: 28 @52143 has 48 MA's), (40, 52281),

Gene: Pinto\_87 Start: 50214, Stop: 50011, Start Num: 29  
Candidate Starts for Pinto\_87:  
(Start: 29 @50214 has 126 MA's),

Gene: Pippin\_93 Start: 50646, Stop: 50852, Start Num: 28  
Candidate Starts for Pippin\_93:  
(Start: 28 @50646 has 48 MA's), (40, 50784),

Gene: Pita2\_91 Start: 50691, Stop: 50488, Start Num: 29  
Candidate Starts for Pita2\_91:  
(9, 50838), (11, 50826), (13, 50802), (Start: 29 @50691 has 126 MA's), (40, 50556), (43, 50496),

Gene: ProMouse\_90 Start: 49279, Stop: 49485, Start Num: 28  
Candidate Starts for ProMouse\_90:  
(Start: 28 @49279 has 48 MA's), (40, 49417),

Gene: QTRlifeCrisis\_86 Start: 49246, Stop: 49043, Start Num: 29  
Candidate Starts for QTRlifeCrisis\_86:  
(Start: 19 @49297 has 7 MA's), (Start: 29 @49246 has 126 MA's), (40, 49111),

Gene: Rajelicia\_89 Start: 52457, Stop: 52257, Start Num: 29  
Candidate Starts for Rajelicia\_89:  
(Start: 29 @52457 has 126 MA's), (40, 52325),

Gene: Rhynn\_85 Start: 50726, Stop: 50926, Start Num: 29  
Candidate Starts for Rhynn\_85:  
(Start: 29 @50726 has 126 MA's),

Gene: RidgeCB\_89 Start: 49216, Stop: 49422, Start Num: 28  
Candidate Starts for RidgeCB\_89:  
(Start: 28 @49216 has 48 MA's), (40, 49354), (43, 49414),

Gene: Ringer\_90 Start: 51410, Stop: 51210, Start Num: 29  
Candidate Starts for Ringer\_90:  
(Start: 29 @51410 has 126 MA's), (40, 51278),

Gene: Rohr\_92 Start: 51968, Stop: 52177, Start Num: 28  
Candidate Starts for Rohr\_92:  
(Start: 28 @51968 has 48 MA's), (40, 52106),

Gene: Rubeus\_88 Start: 48657, Stop: 48454, Start Num: 29  
Candidate Starts for Rubeus\_88:  
(Start: 29 @48657 has 126 MA's), (40, 48522),

Gene: Rufus\_93 Start: 51974, Stop: 51771, Start Num: 29  
Candidate Starts for Rufus\_93:  
(Start: 29 @51974 has 126 MA's), (40, 51839),

Gene: Ruotula\_94 Start: 52218, Stop: 52015, Start Num: 29  
Candidate Starts for Ruotula\_94:  
(Start: 29 @52218 has 126 MA's), (40, 52083),

Gene: Rutherferd\_91 Start: 50676, Stop: 50882, Start Num: 28  
Candidate Starts for Rutherferd\_91:  
(Start: 28 @50676 has 48 MA's), (40, 50814), (43, 50874),

Gene: STLscum\_100 Start: 51894, Stop: 51691, Start Num: 29  
Candidate Starts for STLscum\_100:  
(Start: 29 @51894 has 126 MA's), (40, 51759),

Gene: Sagefire\_86 Start: 50112, Stop: 50318, Start Num: 28  
Candidate Starts for Sagefire\_86:  
(Start: 28 @50112 has 48 MA's), (40, 50250),

Gene: Sandaddy\_90 Start: 51546, Stop: 51343, Start Num: 29  
Candidate Starts for Sandaddy\_90:  
(Start: 29 @51546 has 126 MA's), (40, 51411),

Gene: Sanya\_81 Start: 50361, Stop: 50158, Start Num: 29  
Candidate Starts for Sanya\_81:  
(Start: 29 @50361 has 126 MA's), (40, 50226),

Gene: SarFire\_98 Start: 53353, Stop: 53099, Start Num: 19  
Candidate Starts for SarFire\_98:  
(Start: 19 @53353 has 7 MA's), (Start: 29 @53302 has 126 MA's), (40, 53167),

Gene: Scowl\_90 Start: 50695, Stop: 50898, Start Num: 29  
Candidate Starts for Scowl\_90:  
(Start: 29 @50695 has 126 MA's), (40, 50827),

Gene: Seabiscuit\_95 Start: 51387, Stop: 51184, Start Num: 29  
Candidate Starts for Seabiscuit\_95:  
(Start: 29 @51387 has 126 MA's),

Gene: Seanderson\_89 Start: 52624, Stop: 52421, Start Num: 29  
Candidate Starts for Seanderson\_89:  
(Start: 29 @52624 has 126 MA's), (40, 52489),

Gene: ShortQueendom\_80 Start: 48241, Stop: 48038, Start Num: 29  
Candidate Starts for ShortQueendom\_80:  
(21, 48289), (Start: 29 @48241 has 126 MA's), (40, 48106),

Gene: Sibs6\_95 Start: 49833, Stop: 49630, Start Num: 29

Candidate Starts for Sibs6\_95:  
(Start: 29 @49833 has 126 MA's), (40, 49698),

Gene: SkiPole\_98 Start: 51505, Stop: 51711, Start Num: 28  
Candidate Starts for SkiPole\_98:  
(Start: 28 @51505 has 48 MA's), (40, 51643), (43, 51703),

Gene: Slagathor\_92 Start: 51592, Stop: 51389, Start Num: 29  
Candidate Starts for Slagathor\_92:  
(Start: 29 @51592 has 126 MA's),

Gene: Smairt\_97 Start: 53160, Stop: 53366, Start Num: 28  
Candidate Starts for Smairt\_97:  
(Start: 28 @53160 has 48 MA's), (40, 53298),

Gene: Smeagol\_90 Start: 52545, Stop: 52336, Start Num: 28  
Candidate Starts for Smeagol\_90:  
(7, 52725), (8, 52704), (10, 52689), (15, 52644), (16, 52638), (18, 52632), (Start: 28 @52545 has 48 MA's), (Start: 32 @52512 has 2 MA's), (39, 52440), (43, 52344),

Gene: Snazzy\_92 Start: 51835, Stop: 51632, Start Num: 29  
Candidate Starts for Snazzy\_92:  
(Start: 29 @51835 has 126 MA's), (40, 51700),

Gene: Solon\_83 Start: 47822, Stop: 48028, Start Num: 28  
Candidate Starts for Solon\_83:  
(Start: 28 @47822 has 48 MA's), (40, 47960), (43, 48020),

Gene: Sorpresa\_93 Start: 51552, Stop: 51349, Start Num: 29  
Candidate Starts for Sorpresa\_93:  
(Start: 29 @51552 has 126 MA's), (40, 51417),

Gene: SpikeBT\_87 Start: 49792, Stop: 49589, Start Num: 29  
Candidate Starts for SpikeBT\_87:  
(Start: 29 @49792 has 126 MA's), (40, 49657),

Gene: Squee\_92 Start: 51943, Stop: 51740, Start Num: 29  
Candidate Starts for Squee\_92:  
(Start: 29 @51943 has 126 MA's), (40, 51808),

Gene: StewieG\_86 Start: 47748, Stop: 47954, Start Num: 28  
Candidate Starts for StewieG\_86:  
(Start: 28 @47748 has 48 MA's), (40, 47886), (43, 47946),

Gene: StrongArm\_88 Start: 50693, Stop: 50899, Start Num: 28  
Candidate Starts for StrongArm\_88:  
(Start: 28 @50693 has 48 MA's), (40, 50831),

Gene: Sumter\_87 Start: 51154, Stop: 51363, Start Num: 28  
Candidate Starts for Sumter\_87:  
(Start: 28 @51154 has 48 MA's), (40, 51292),

Gene: Sunshine924\_93 Start: 49690, Stop: 49896, Start Num: 28

Candidate Starts for Sunshine924\_93:  
(Start: 28 @49690 has 48 MA's), (40, 49828), (43, 49888),

Gene: SwissCheese\_95 Start: 51439, Stop: 51236, Start Num: 29  
Candidate Starts for SwissCheese\_95:  
(Start: 29 @51439 has 126 MA's), (40, 51304),

Gene: Switzer\_91 Start: 51956, Stop: 51702, Start Num: 19  
Candidate Starts for Switzer\_91:  
(Start: 19 @51956 has 7 MA's), (Start: 29 @51905 has 126 MA's),

Gene: Swole\_91 Start: 50909, Stop: 50706, Start Num: 29  
Candidate Starts for Swole\_91:  
(9, 51056), (11, 51044), (13, 51020), (Start: 29 @50909 has 126 MA's), (40, 50774), (43, 50714),

Gene: Target\_90 Start: 48713, Stop: 48510, Start Num: 29  
Candidate Starts for Target\_90:  
(Start: 29 @48713 has 126 MA's), (40, 48578), (43, 48518),

Gene: Tasp14\_87 Start: 49921, Stop: 50127, Start Num: 28  
Candidate Starts for Tasp14\_87:  
(Start: 28 @49921 has 48 MA's), (40, 50059),

Gene: Teodoridan\_93 Start: 50495, Stop: 50698, Start Num: 29  
Candidate Starts for Teodoridan\_93:  
(Start: 29 @50495 has 126 MA's), (40, 50630),

Gene: TheloniousMonk\_90 Start: 51663, Stop: 51460, Start Num: 29  
Candidate Starts for TheloniousMonk\_90:  
(Start: 29 @51663 has 126 MA's), (40, 51528),

Gene: Thor\_98 Start: 52711, Stop: 52457, Start Num: 19  
Candidate Starts for Thor\_98:  
(Start: 19 @52711 has 7 MA's), (Start: 29 @52660 has 126 MA's), (40, 52525),

Gene: Topgun\_89 Start: 49318, Stop: 49524, Start Num: 28  
Candidate Starts for Topgun\_89:  
(Start: 28 @49318 has 48 MA's), (40, 49456), (43, 49516),

Gene: Tote\_86 Start: 48177, Stop: 47974, Start Num: 29  
Candidate Starts for Tote\_86:  
(9, 48324), (11, 48312), (13, 48288), (Start: 29 @48177 has 126 MA's), (40, 48042), (43, 47982),

Gene: Traft412\_86 Start: 50830, Stop: 50627, Start Num: 29  
Candidate Starts for Traft412\_86:  
(Start: 29 @50830 has 126 MA's), (40, 50695),

Gene: Treddle\_90 Start: 51379, Stop: 51582, Start Num: 29  
Candidate Starts for Treddle\_90:  
(Start: 29 @51379 has 126 MA's), (40, 51514), (43, 51574),

Gene: Tripl3t\_91 Start: 53185, Stop: 52982, Start Num: 29  
Candidate Starts for Tripl3t\_91:

(Start: 29 @53185 has 126 MA's), (40, 53050),

Gene: Trouble\_90 Start: 50598, Stop: 50804, Start Num: 28

Candidate Starts for Trouble\_90:

(Start: 28 @50598 has 48 MA's), (40, 50736),

Gene: TwoPeat\_88 Start: 50371, Stop: 50168, Start Num: 29

Candidate Starts for TwoPeat\_88:

(9, 50518), (11, 50506), (13, 50482), (Start: 29 @50371 has 126 MA's), (40, 50236), (43, 50176),

Gene: Violet\_87 Start: 50920, Stop: 51123, Start Num: 29

Candidate Starts for Violet\_87:

(Start: 29 @50920 has 126 MA's), (40, 51055), (43, 51115),

Gene: Watermelon\_89 Start: 50581, Stop: 50378, Start Num: 29

Candidate Starts for Watermelon\_89:

(Start: 29 @50581 has 126 MA's), (40, 50446),

Gene: Wheeler\_96 Start: 53218, Stop: 53015, Start Num: 29

Candidate Starts for Wheeler\_96:

(Start: 29 @53218 has 126 MA's), (40, 53083),

Gene: Wilkins\_90 Start: 49248, Stop: 49454, Start Num: 28

Candidate Starts for Wilkins\_90:

(Start: 28 @49248 has 48 MA's), (40, 49386), (43, 49446),

Gene: Zephyr\_92 Start: 51932, Stop: 51723, Start Num: 29

Candidate Starts for Zephyr\_92:

(Start: 29 @51932 has 126 MA's), (40, 51791),