

Pham 196374



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 196374 Report

This analysis was run 12/09/24 on database version 580.

Pham number 196374 has 124 members, 1 are drafts.

Phages represented in each track:

- Track 1 : Pari\_63, Squee\_61
- Track 2 : Gompeii16\_60, Bircsak\_60, Buttons\_58, Nhonho\_59, Crispicous1\_58, Papez\_63, Snazzy\_59, Edtherson\_60, KSSJEB\_61, Ruotula\_63, JackSparrow\_63, Traft412\_63, Mryolo\_57
- Track 3 : Niza\_62
- Track 4 : Fushigi\_57, Licorice\_62, Zephyr\_62, Abrogate\_600, Marcell\_57, Sibs6\_63, Kanely\_62, PhrostyMug\_61, Trouble\_62, PattyP\_63, Altman\_63, Briton15\_65, Pippin\_61, Watermelon\_61, Killigrew\_60, Marchy\_55, Aeneas\_64, Ciao\_59, Seabiscuit\_64, McGuire\_62, HanShotFirst\_62
- Track 5 : Magnar\_58
- Track 6 : JuliaChild\_62, Sagefire\_63, GrecoEtereo\_60, QTRlifeCrisis\_61, Tote\_57, RidgeCB\_60, Doom\_59
- Track 7 : JC27\_63, Forsytheast\_59, Moose\_59, SwissCheese\_61, Bruns\_59, Seanderson\_60
- Track 8 : Pinto\_61, Rufus\_62
- Track 9 : Gwendoluna\_63
- Track 10 : Ichabod\_64, HermioneGrange\_62, MPlant7149\_60
- Track 11 : PherrisBueller\_59, GageAP\_61, Dreamboat\_61, Graduation\_64, Scowl\_61, Makemake\_62
- Track 12 : Pepe\_57, SkiPole\_65
- Track 13 : Hope4ever\_62
- Track 14 : BeesKnees\_63, PacerPaul\_60, Zeeculate\_58, Marsha\_60, Francis47\_59, ConceptII\_63, Nerujay\_63, Gandalf20\_63
- Track 15 : DreamCatcher\_64
- Track 16 : SarFire\_57, Thor\_57
- Track 17 : Adahisdi\_61, Oogway\_60
- Track 18 : Pelly\_61, Dexes\_60
- Track 19 : MrGordo\_60, Big3\_59
- Track 20 : KyMonks1A\_64
- Track 21 : Kugel\_60
- Track 22 : BPBiebs31\_62
- Track 23 : BluSpix\_58, Eyeball\_62, IgnatiusPatJac\_60
- Track 24 : CactusRose\_59
- Track 25 : Alvin\_59
- Track 26 : Solon\_58, Lesedi\_56
- Track 27 : Petp2012\_62
- Track 28 : Fajezeel\_61, Acme\_62, Greg\_61

- Track 29 : Tripl3t\_63
- Track 30 : Applejack\_57
- Track 31 : Ashballer\_63
- Track 32 : Sunshine924\_63
- Track 33 : Ajay\_61
- Track 34 : Jorgensen\_61
- Track 35 : Petruccio\_59
- Track 36 : Paraselene\_58
- Track 37 : Switzer\_61
- Track 38 : Ringer\_60
- Track 39 : Kykar\_61, Lamina13\_64
- Track 40 : Bob3\_60, Barriga\_62
- Track 41 : Michley\_63
- Track 42 : Turj99\_59
- Track 43 : Zeuska\_60, Teodoridan\_58
- Track 44 : Frogopper\_58
- Track 45 : Corvo\_61
- Track 46 : Paphu\_60, Tasp14\_64, Parliament\_62
- Track 47 : Carlyle\_60
- Track 48 : Dynamix\_62
- Track 49 : ThelioniousMonk\_61
- Track 50 : Euphoria\_58

***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 114 of the 123 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Abrogate\_600, Acme\_62, Aeneas\_64, Altman\_63, Alvin\_59, Applejack\_57, BPBiebs31\_62, Barriga\_62, BeesKnees\_63, Big3\_59, Bircsak\_60, BluSpix\_58, Bob3\_60, Briton15\_65, Bruns\_59, Buttons\_58, CactusRose\_59, Carlyle\_60, Ciao\_59, Conceptll\_63, Corvo\_61, Crispicous1\_58, Dexes\_60, Doom\_59, DreamCatcher\_64, Dreamboat\_61, Dynamix\_62, Edtherson\_60, Euphoria\_58, Eyeball\_62, Fajezeel\_61, Forsytheast\_59, Francis47\_59, Frogopper\_58, Fushigi\_57, GageAP\_61, Gandalf20\_63, Gompeii16\_60, Graduation\_64, GrecoEtereo\_60, Greg\_61, Gwendoluna\_63, HanShotFirst\_62, HermioneGrange\_62, Hope4ever\_62, Ichabod\_64, IgnatiusPatJac\_60, JC27\_63, JackSparrow\_63, Jorgensen\_61, JuliaChild\_62, KSSJEB\_61, Kanely\_62, Killigrew\_60, Kugel\_60, KyMonks1A\_64, Lesedi\_56, Licorice\_62, MPlant7149\_60, Magnar\_58, Makemake\_62, Marcell\_57, Marchy\_55, Marsha\_60, McGuire\_62, Michley\_63, Moose\_59, MrGordo\_60, Mryolo\_57, Nerujay\_63, Nhonho\_59, Niza\_62, PacerPaul\_60, Papez\_63, Paphu\_60, Paraselene\_58, Pari\_63, Parliament\_62, PattyP\_63, Pelly\_61, Petp2012\_62, Petruccio\_59, PherrisBueller\_59, PhrostyMug\_61, Pinto\_61, Pippin\_61, QTRlifeCrisis\_61, RidgeCB\_60, Ringer\_60, Rufus\_62, Ruotula\_63, Sagefire\_63, SarFire\_57, Scowl\_61, Seabiscuit\_64, Seanderson\_60, Sibs6\_63, Snazzy\_59, Solon\_58, Squee\_61, Sunshine924\_63, SwissCheese\_61, Switzer\_61, Tasp14\_64, ThelioniousMonk\_61, Thor\_57, Tote\_57, Trafft412\_63, Tripl3t\_63, Trouble\_62, Turj99\_59, Watermelon\_61, Zeeculate\_58, Zephyr\_62,

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

- Adahisdi\_61, Ajay\_61, Ashballer\_63, Kykar\_61, Lamina13\_64, Oogway\_60, Pepe\_57, SkiPole\_65, Teodoridan\_58, Zeuska\_60,

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

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### Summary by start number:

Start 17:

- Found in 9 of 124 ( 7.3% ) of genes in pham
- Manual Annotations of this start: 2 of 123
- Called 22.2% of time when present
- Phage (with cluster) where this start called: Kykar\_61 (A1), Lamina13\_64 (A1),

Start 24:

- Found in 4 of 124 ( 3.2% ) of genes in pham
- Manual Annotations of this start: 3 of 123
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Adahisdi\_61 (A1), Ajay\_61 (A1), Oogway\_60 (A1),

Start 28:

- Found in 26 of 124 ( 21.0% ) of genes in pham
- Manual Annotations of this start: 4 of 123
- Called 19.2% of time when present
- Phage (with cluster) where this start called: Ashballer\_63 (A1), Pepe\_57 (A1), SkiPole\_65 (A1), Teodoridan\_58 (A1), Zeuska\_60 (A1),

Start 29:

- Found in 124 of 124 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 114 of 123
- Called 91.9% of time when present
- Phage (with cluster) where this start called: Abrogate\_600 (A1), Acme\_62 (A1), Aeneas\_64 (A1), Altman\_63 (A1), Alvin\_59 (A1), Applejack\_57 (A1), BPBiebs31\_62 (A1), Barriga\_62 (A1), BeesKnees\_63 (A1), Big3\_59 (A1), Bircsak\_60 (A1), BluSpix\_58 (A1), Bob3\_60 (A1), Briton15\_65 (A1), Bruns\_59 (A1), Buttons\_58 (A1), CactusRose\_59 (A1), Carlyle\_60 (A1), Ciao\_59 (A1), ConceptII\_63 (A1), Corvo\_61 (A1), Crispicous1\_58 (A1), Dexes\_60 (A1), Doom\_59 (A1), DreamCatcher\_64 (A1), Dreamboat\_61 (A1), Dynamix\_62 (A1), Edtherson\_60 (A1), Euphoria\_58 (A1), Eyeball\_62 (A1), Fajezeel\_61 (A1), Forsytheast\_59 (A1), Francis47\_59 (A1), FrogHopper\_58 (A1), Fushigi\_57 (A1), GageAP\_61 (A1), Gandalf20\_63 (A1), Gompeii16\_60 (A1), Graduation\_64 (A1), GrecoEtereo\_60 (A1), Greg\_61 (A1), Gwendoluna\_63 (A1), HanShotFirst\_62 (A1), HermioneGrange\_62 (A1), Hope4ever\_62 (A1), Ichabod\_64 (A1), IgnatiusPatJac\_60 (A1), JC27\_63 (A1), JackSparrow\_63 (A1), Jorgensen\_61 (A1), JuliaChild\_62 (A1), KSSJEB\_61 (A1), Kanely\_62 (A1), Killigrew\_60 (A1), Kugel\_60 (A1), KyMonks1A\_64 (A1), Lesedi\_56 (A1), Licorice\_62 (A1), MPlant7149\_60 (A1), Magnar\_58 (A1), Makemake\_62 (A1), Marcell\_57 (A1), Marchy\_55 (A1), Marsha\_60 (A1), McGuire\_62 (A1), Michley\_63 (A1), Moose\_59 (A1), MrGordo\_60 (A1), Mryolo\_57 (A1), Nerujay\_63 (A1), Nhonho\_59 (A1), Niza\_62 (A1), PacerPaul\_60 (A1), Papez\_63 (A1), Paphu\_60 (A1), Paraselene\_58 (A1), Pari\_63 (A1), Parliament\_62 (A1), PattyP\_63 (A1), Pelly\_61 (A1), Petp2012\_62 (A1), Petruccio\_59 (A1), PherrisBueller\_59 (A1), PhrostyMug\_61

(A1), Pinto\_61 (A1), Pippin\_61 (A1), QTRlifeCrisis\_61 (A1), RidgeCB\_60 (A1), Ringer\_60 (A1), Rufus\_62 (A1), Ruotula\_63 (A1), Sagefire\_63 (A1), SarFire\_57 (A1), Scowl\_61 (A1), Seabiscuit\_64 (A1), Seanderson\_60 (A1), Sibs6\_63 (A1), Snazzy\_59 (A1), Solon\_58 (A1), Squee\_61 (A1), Sunshine924\_63 (A1), SwissCheese\_61 (A1), Switzer\_61 (A1), Tasp14\_64 (A1), TheloniousMonk\_61 (A1), Thor\_57 (A1), Tote\_57 (A1), Traft412\_63 (A1), Tripl3t\_63 (A1), Trouble\_62 (A1), Turj99\_59 (A1), Watermelon\_61 (A1), Zeeculate\_58 (A1), Zephyr\_62 (A1),

### **Summary by clusters:**

There is one cluster represented in this pham: A1

Info for manual annotations of cluster A1:

- Start number 17 was manually annotated 2 times for cluster A1.
- Start number 24 was manually annotated 3 times for cluster A1.
- Start number 28 was manually annotated 4 times for cluster A1.
- Start number 29 was manually annotated 114 times for cluster A1.

### **Gene Information:**

Gene: Abrogate\_600 Start: 42412, Stop: 42326, Start Num: 29

Candidate Starts for Abrogate\_600:

(Start: 29 @42412 has 114 MA's), (32, 42343),

Gene: Acme\_62 Start: 40967, Stop: 40881, Start Num: 29

Candidate Starts for Acme\_62:

(14, 41027), (Start: 29 @40967 has 114 MA's), (31, 40910),

Gene: Adahisdi\_61 Start: 42073, Stop: 41960, Start Num: 24

Candidate Starts for Adahisdi\_61:

(Start: 24 @42073 has 3 MA's), (Start: 28 @42058 has 4 MA's), (Start: 29 @42046 has 114 MA's),

Gene: Aeneas\_64 Start: 42831, Stop: 42745, Start Num: 29

Candidate Starts for Aeneas\_64:

(Start: 29 @42831 has 114 MA's), (32, 42762),

Gene: Ajay\_61 Start: 41049, Stop: 40936, Start Num: 24

Candidate Starts for Ajay\_61:

(Start: 24 @41049 has 3 MA's), (Start: 28 @41034 has 4 MA's), (Start: 29 @41022 has 114 MA's), (32, 40953),

Gene: Altman\_63 Start: 41128, Stop: 41042, Start Num: 29

Candidate Starts for Altman\_63:

(Start: 29 @41128 has 114 MA's), (32, 41059),

Gene: Alvin\_59 Start: 40335, Stop: 40249, Start Num: 29

Candidate Starts for Alvin\_59:

(Start: 29 @40335 has 114 MA's), (30, 40290),

Gene: Applejack\_57 Start: 38781, Stop: 38695, Start Num: 29

Candidate Starts for Applejack\_57:

(Start: 28 @38793 has 4 MA's), (Start: 29 @38781 has 114 MA's), (32, 38712),

Gene: Ashballer\_63 Start: 41368, Stop: 41270, Start Num: 28

Candidate Starts for Ashballer\_63:

(Start: 28 @41368 has 4 MA's), (Start: 29 @41356 has 114 MA's), (32, 41287),

Gene: BPBiebs31\_62 Start: 41315, Stop: 41229, Start Num: 29

Candidate Starts for BPBiebs31\_62:

(14, 41375), (Start: 29 @41315 has 114 MA's), (30, 41270),

Gene: Barriga\_62 Start: 39540, Stop: 39454, Start Num: 29

Candidate Starts for Barriga\_62:

(3, 39726), (Start: 29 @39540 has 114 MA's),

Gene: BeesKnees\_63 Start: 40393, Stop: 40307, Start Num: 29

Candidate Starts for BeesKnees\_63:

(Start: 29 @40393 has 114 MA's), (31, 40336), (32, 40324),

Gene: Big3\_59 Start: 41093, Stop: 41007, Start Num: 29

Candidate Starts for Big3\_59:

(4, 41264), (Start: 29 @41093 has 114 MA's),

Gene: Bircsak\_60 Start: 42546, Stop: 42460, Start Num: 29

Candidate Starts for Bircsak\_60:

(Start: 29 @42546 has 114 MA's),

Gene: BluSpix\_58 Start: 36376, Stop: 36290, Start Num: 29

Candidate Starts for BluSpix\_58:

(Start: 28 @36388 has 4 MA's), (Start: 29 @36376 has 114 MA's),

Gene: Bob3\_60 Start: 40364, Stop: 40278, Start Num: 29

Candidate Starts for Bob3\_60:

(3, 40550), (Start: 29 @40364 has 114 MA's),

Gene: Briton15\_65 Start: 42585, Stop: 42499, Start Num: 29

Candidate Starts for Briton15\_65:

(Start: 29 @42585 has 114 MA's), (32, 42516),

Gene: Bruns\_59 Start: 39510, Stop: 39424, Start Num: 29

Candidate Starts for Bruns\_59:

(Start: 28 @39522 has 4 MA's), (Start: 29 @39510 has 114 MA's), (32, 39441),

Gene: Buttons\_58 Start: 38459, Stop: 38373, Start Num: 29

Candidate Starts for Buttons\_58:

(Start: 29 @38459 has 114 MA's),

Gene: CactusRose\_59 Start: 40649, Stop: 40563, Start Num: 29

Candidate Starts for CactusRose\_59:

(20, 40679), (21, 40673), (Start: 29 @40649 has 114 MA's),

Gene: Carlyle\_60 Start: 39245, Stop: 39159, Start Num: 29

Candidate Starts for Carlyle\_60:

(11, 39329), (Start: 29 @39245 has 114 MA's), (30, 39200),

Gene: Ciao\_59 Start: 39917, Stop: 39831, Start Num: 29

Candidate Starts for Ciao\_59:

(Start: 29 @39917 has 114 MA's), (32, 39848),

Gene: ConceptII\_63 Start: 41983, Stop: 41897, Start Num: 29

Candidate Starts for ConceptII\_63:

(Start: 29 @41983 has 114 MA's), (31, 41926), (32, 41914),

Gene: Corvo\_61 Start: 41462, Stop: 41376, Start Num: 29

Candidate Starts for Corvo\_61:

(Start: 29 @41462 has 114 MA's), (30, 41417),

Gene: Crispicous1\_58 Start: 39702, Stop: 39616, Start Num: 29

Candidate Starts for Crispicous1\_58:

(Start: 29 @39702 has 114 MA's),

Gene: Dexes\_60 Start: 40821, Stop: 40735, Start Num: 29

Candidate Starts for Dexes\_60:

(Start: 29 @40821 has 114 MA's), (31, 40764),

Gene: Doom\_59 Start: 41395, Stop: 41309, Start Num: 29

Candidate Starts for Doom\_59:

(Start: 29 @41395 has 114 MA's), (31, 41338),

Gene: DreamCatcher\_64 Start: 41458, Stop: 41372, Start Num: 29

Candidate Starts for DreamCatcher\_64:

(2, 41659), (15, 41515), (16, 41512), (Start: 29 @41458 has 114 MA's), (31, 41401),

Gene: Dreamboat\_61 Start: 39688, Stop: 39602, Start Num: 29

Candidate Starts for Dreamboat\_61:

(Start: 29 @39688 has 114 MA's), (30, 39643),

Gene: Dynamix\_62 Start: 40205, Stop: 40119, Start Num: 29

Candidate Starts for Dynamix\_62:

(5, 40343), (Start: 29 @40205 has 114 MA's),

Gene: Edtherson\_60 Start: 41389, Stop: 41303, Start Num: 29

Candidate Starts for Edtherson\_60:

(Start: 29 @41389 has 114 MA's),

Gene: Euphoria\_58 Start: 40112, Stop: 40026, Start Num: 29

Candidate Starts for Euphoria\_58:

(Start: 29 @40112 has 114 MA's), (31, 40055),

Gene: Eyeball\_62 Start: 41559, Stop: 41473, Start Num: 29

Candidate Starts for Eyeball\_62:

(Start: 28 @41571 has 4 MA's), (Start: 29 @41559 has 114 MA's),

Gene: Fajezeel\_61 Start: 40257, Stop: 40171, Start Num: 29

Candidate Starts for Fajezeel\_61:

(14, 40317), (Start: 29 @40257 has 114 MA's), (31, 40200),

Gene: Forsytheast\_59 Start: 39678, Stop: 39592, Start Num: 29  
Candidate Starts for Forsytheast\_59:  
(Start: 28 @39690 has 4 MA's), (Start: 29 @39678 has 114 MA's), (32, 39609),

Gene: Francis47\_59 Start: 41463, Stop: 41377, Start Num: 29  
Candidate Starts for Francis47\_59:  
(Start: 29 @41463 has 114 MA's), (31, 41406), (32, 41394),

Gene: Froghopper\_58 Start: 39483, Stop: 39397, Start Num: 29  
Candidate Starts for Froghopper\_58:  
(22, 39513), (26, 39504), (Start: 29 @39483 has 114 MA's), (31, 39426),

Gene: Fushigi\_57 Start: 38939, Stop: 38853, Start Num: 29  
Candidate Starts for Fushigi\_57:  
(Start: 29 @38939 has 114 MA's), (32, 38870),

Gene: GageAP\_61 Start: 41027, Stop: 40941, Start Num: 29  
Candidate Starts for GageAP\_61:  
(Start: 29 @41027 has 114 MA's), (30, 40982),

Gene: Gandalf20\_63 Start: 42121, Stop: 42035, Start Num: 29  
Candidate Starts for Gandalf20\_63:  
(Start: 29 @42121 has 114 MA's), (31, 42064), (32, 42052),

Gene: Gompeii16\_60 Start: 42547, Stop: 42461, Start Num: 29  
Candidate Starts for Gompeii16\_60:  
(Start: 29 @42547 has 114 MA's),

Gene: Graduation\_64 Start: 41860, Stop: 41774, Start Num: 29  
Candidate Starts for Graduation\_64:  
(Start: 29 @41860 has 114 MA's), (30, 41815),

Gene: GrecoEtereo\_60 Start: 40025, Stop: 39939, Start Num: 29  
Candidate Starts for GrecoEtereo\_60:  
(Start: 29 @40025 has 114 MA's), (31, 39968),

Gene: Greg\_61 Start: 40257, Stop: 40171, Start Num: 29  
Candidate Starts for Greg\_61:  
(14, 40317), (Start: 29 @40257 has 114 MA's), (31, 40200),

Gene: Gwendoluna\_63 Start: 42377, Stop: 42291, Start Num: 29  
Candidate Starts for Gwendoluna\_63:  
(Start: 17 @42422 has 2 MA's), (Start: 28 @42389 has 4 MA's), (Start: 29 @42377 has 114 MA's),

Gene: HanShotFirst\_62 Start: 42534, Stop: 42448, Start Num: 29  
Candidate Starts for HanShotFirst\_62:  
(Start: 29 @42534 has 114 MA's), (32, 42465),

Gene: HermioneGrange\_62 Start: 41601, Stop: 41515, Start Num: 29  
Candidate Starts for HermioneGrange\_62:  
(Start: 29 @41601 has 114 MA's), (30, 41556),

Gene: Hope4ever\_62 Start: 41007, Stop: 40921, Start Num: 29



Candidate Starts for Hope4ever\_62:  
(1, 41217), (2, 41208), (15, 41064), (16, 41061), (Start: 29 @41007 has 114 MA's), (32, 40938),

Gene: Ichabod\_64 Start: 41728, Stop: 41642, Start Num: 29  
Candidate Starts for Ichabod\_64:  
(Start: 29 @41728 has 114 MA's), (30, 41683),

Gene: IgnatiusPatJac\_60 Start: 40321, Stop: 40235, Start Num: 29  
Candidate Starts for IgnatiusPatJac\_60:  
(Start: 28 @40333 has 4 MA's), (Start: 29 @40321 has 114 MA's),

Gene: JC27\_63 Start: 41045, Stop: 40959, Start Num: 29  
Candidate Starts for JC27\_63:  
(Start: 28 @41057 has 4 MA's), (Start: 29 @41045 has 114 MA's), (32, 40976),

Gene: JackSparrow\_63 Start: 40917, Stop: 40831, Start Num: 29  
Candidate Starts for JackSparrow\_63:  
(Start: 29 @40917 has 114 MA's),

Gene: Jorgensen\_61 Start: 40326, Stop: 40240, Start Num: 29  
Candidate Starts for Jorgensen\_61:  
(10, 40416), (13, 40398), (18, 40371), (23, 40356), (Start: 29 @40326 has 114 MA's),

Gene: JuliaChild\_62 Start: 41341, Stop: 41255, Start Num: 29  
Candidate Starts for JuliaChild\_62:  
(Start: 29 @41341 has 114 MA's), (31, 41284),

Gene: KSSJEB\_61 Start: 40326, Stop: 40240, Start Num: 29  
Candidate Starts for KSSJEB\_61:  
(Start: 29 @40326 has 114 MA's),

Gene: Kanely\_62 Start: 40905, Stop: 40819, Start Num: 29  
Candidate Starts for Kanely\_62:  
(Start: 29 @40905 has 114 MA's), (32, 40836),

Gene: Killigrew\_60 Start: 41100, Stop: 41014, Start Num: 29  
Candidate Starts for Killigrew\_60:  
(Start: 29 @41100 has 114 MA's), (32, 41031),

Gene: Kugel\_60 Start: 41153, Stop: 41067, Start Num: 29  
Candidate Starts for Kugel\_60:  
(7, 41258), (9, 41249), (27, 41165), (Start: 29 @41153 has 114 MA's),

Gene: KyMonks1A\_64 Start: 40904, Stop: 40818, Start Num: 29  
Candidate Starts for KyMonks1A\_64:  
(2, 41105), (15, 40961), (16, 40958), (Start: 29 @40904 has 114 MA's),

Gene: Kykar\_61 Start: 41163, Stop: 41032, Start Num: 17  
Candidate Starts for Kykar\_61:  
(Start: 17 @41163 has 2 MA's), (25, 41142), (Start: 28 @41130 has 4 MA's), (Start: 29 @41118 has 114 MA's),

Gene: Lamina13\_64 Start: 41951, Stop: 41820, Start Num: 17

Candidate Starts for Lamina13\_64:  
(Start: 17 @41951 has 2 MA's), (25, 41930), (Start: 28 @41918 has 4 MA's), (Start: 29 @41906 has 114 MA's),

Gene: Lesedi\_56 Start: 38890, Stop: 38804, Start Num: 29  
Candidate Starts for Lesedi\_56:  
(14, 38950), (Start: 29 @38890 has 114 MA's),

Gene: Licorice\_62 Start: 42392, Stop: 42306, Start Num: 29  
Candidate Starts for Licorice\_62:  
(Start: 29 @42392 has 114 MA's), (32, 42323),

Gene: MPlant7149\_60 Start: 39489, Stop: 39403, Start Num: 29  
Candidate Starts for MPlant7149\_60:  
(Start: 29 @39489 has 114 MA's), (30, 39444),

Gene: Magnar\_58 Start: 40505, Stop: 40419, Start Num: 29  
Candidate Starts for Magnar\_58:  
(19, 40544), (25, 40526), (Start: 29 @40505 has 114 MA's),

Gene: Makemake\_62 Start: 41962, Stop: 41876, Start Num: 29  
Candidate Starts for Makemake\_62:  
(Start: 29 @41962 has 114 MA's), (30, 41917),

Gene: Marcell\_57 Start: 39512, Stop: 39426, Start Num: 29  
Candidate Starts for Marcell\_57:  
(Start: 29 @39512 has 114 MA's), (32, 39443),

Gene: Marchy\_55 Start: 37600, Stop: 37514, Start Num: 29  
Candidate Starts for Marchy\_55:  
(Start: 29 @37600 has 114 MA's), (32, 37531),

Gene: Marsha\_60 Start: 41987, Stop: 41901, Start Num: 29  
Candidate Starts for Marsha\_60:  
(Start: 29 @41987 has 114 MA's), (31, 41930), (32, 41918),

Gene: McGuire\_62 Start: 40165, Stop: 40079, Start Num: 29  
Candidate Starts for McGuire\_62:  
(Start: 29 @40165 has 114 MA's), (32, 40096),

Gene: Michley\_63 Start: 41093, Stop: 41007, Start Num: 29  
Candidate Starts for Michley\_63:  
(Start: 28 @41105 has 4 MA's), (Start: 29 @41093 has 114 MA's),

Gene: Moose\_59 Start: 39678, Stop: 39592, Start Num: 29  
Candidate Starts for Moose\_59:  
(Start: 28 @39690 has 4 MA's), (Start: 29 @39678 has 114 MA's), (32, 39609),

Gene: MrGordo\_60 Start: 40333, Stop: 40247, Start Num: 29  
Candidate Starts for MrGordo\_60:  
(4, 40504), (Start: 29 @40333 has 114 MA's),

Gene: Mryolo\_57 Start: 40375, Stop: 40289, Start Num: 29

Candidate Starts for Mryolo\_57:  
(Start: 29 @40375 has 114 MA's),

Gene: Nerujay\_63 Start: 42121, Stop: 42035, Start Num: 29  
Candidate Starts for Nerujay\_63:  
(Start: 29 @42121 has 114 MA's), (31, 42064), (32, 42052),

Gene: Nhonho\_59 Start: 41389, Stop: 41303, Start Num: 29  
Candidate Starts for Nhonho\_59:  
(Start: 29 @41389 has 114 MA's),

Gene: Niza\_62 Start: 41988, Stop: 41902, Start Num: 29  
Candidate Starts for Niza\_62:  
(Start: 29 @41988 has 114 MA's), (31, 41931), (32, 41919),

Gene: Oogway\_60 Start: 41660, Stop: 41547, Start Num: 24  
Candidate Starts for Oogway\_60:  
(Start: 24 @41660 has 3 MA's), (Start: 28 @41645 has 4 MA's), (Start: 29 @41633 has 114 MA's),

Gene: PacerPaul\_60 Start: 40830, Stop: 40744, Start Num: 29  
Candidate Starts for PacerPaul\_60:  
(Start: 29 @40830 has 114 MA's), (31, 40773), (32, 40761),

Gene: Papez\_63 Start: 42358, Stop: 42272, Start Num: 29  
Candidate Starts for Papez\_63:  
(Start: 29 @42358 has 114 MA's),

Gene: Paphu\_60 Start: 41264, Stop: 41178, Start Num: 29  
Candidate Starts for Paphu\_60:  
(Start: 17 @41309 has 2 MA's), (25, 41288), (Start: 28 @41276 has 4 MA's), (Start: 29 @41264 has 114 MA's),

Gene: Paraselene\_58 Start: 40895, Stop: 40809, Start Num: 29  
Candidate Starts for Paraselene\_58:  
(Start: 29 @40895 has 114 MA's), (30, 40850),

Gene: Pari\_63 Start: 40356, Stop: 40270, Start Num: 29  
Candidate Starts for Pari\_63:  
(Start: 29 @40356 has 114 MA's), (30, 40311),

Gene: Parliament\_62 Start: 43056, Stop: 42970, Start Num: 29  
Candidate Starts for Parliament\_62:  
(Start: 17 @43101 has 2 MA's), (25, 43080), (Start: 28 @43068 has 4 MA's), (Start: 29 @43056 has 114 MA's),

Gene: PattyP\_63 Start: 42048, Stop: 41962, Start Num: 29  
Candidate Starts for PattyP\_63:  
(Start: 29 @42048 has 114 MA's), (32, 41979),

Gene: Pelly\_61 Start: 42060, Stop: 41974, Start Num: 29  
Candidate Starts for Pelly\_61:  
(Start: 29 @42060 has 114 MA's), (31, 42003),

Gene: Pepe\_57 Start: 39121, Stop: 39023, Start Num: 28  
Candidate Starts for Pepe\_57:  
(Start: 28 @39121 has 4 MA's), (Start: 29 @39109 has 114 MA's),

Gene: Petp2012\_62 Start: 42556, Stop: 42470, Start Num: 29  
Candidate Starts for Petp2012\_62:  
(3, 42742), (Start: 29 @42556 has 114 MA's), (31, 42499),

Gene: Petruccio\_59 Start: 39783, Stop: 39697, Start Num: 29  
Candidate Starts for Petruccio\_59:  
(Start: 29 @39783 has 114 MA's),

Gene: PherrisBueller\_59 Start: 39225, Stop: 39139, Start Num: 29  
Candidate Starts for PherrisBueller\_59:  
(Start: 29 @39225 has 114 MA's), (30, 39180),

Gene: PhrostyMug\_61 Start: 42378, Stop: 42292, Start Num: 29  
Candidate Starts for PhrostyMug\_61:  
(Start: 29 @42378 has 114 MA's), (32, 42309),

Gene: Pinto\_61 Start: 40708, Stop: 40622, Start Num: 29  
Candidate Starts for Pinto\_61:  
(2, 40909), (15, 40765), (16, 40762), (Start: 29 @40708 has 114 MA's), (31, 40651),

Gene: Pippin\_61 Start: 40310, Stop: 40224, Start Num: 29  
Candidate Starts for Pippin\_61:  
(Start: 29 @40310 has 114 MA's), (32, 40241),

Gene: QTRlifeCrisis\_61 Start: 41246, Stop: 41160, Start Num: 29  
Candidate Starts for QTRlifeCrisis\_61:  
(Start: 29 @41246 has 114 MA's), (31, 41189),

Gene: RidgeCB\_60 Start: 40684, Stop: 40598, Start Num: 29  
Candidate Starts for RidgeCB\_60:  
(Start: 29 @40684 has 114 MA's), (31, 40627),

Gene: Ringer\_60 Start: 41576, Stop: 41490, Start Num: 29  
Candidate Starts for Ringer\_60:  
(15, 41633), (Start: 29 @41576 has 114 MA's), (30, 41531),

Gene: Rufus\_62 Start: 41185, Stop: 41099, Start Num: 29  
Candidate Starts for Rufus\_62:  
(2, 41386), (15, 41242), (16, 41239), (Start: 29 @41185 has 114 MA's), (31, 41128),

Gene: Ruotula\_63 Start: 42698, Stop: 42612, Start Num: 29  
Candidate Starts for Ruotula\_63:  
(Start: 29 @42698 has 114 MA's),

Gene: Sagefire\_63 Start: 42564, Stop: 42478, Start Num: 29  
Candidate Starts for Sagefire\_63:  
(Start: 29 @42564 has 114 MA's), (31, 42507),

Gene: SarFire\_57 Start: 39630, Stop: 39544, Start Num: 29

Candidate Starts for SarFire\_57:  
(6, 39738), (8, 39726), (Start: 17 @39675 has 2 MA's), (Start: 29 @39630 has 114 MA's), (30, 39585),

Gene: Scowl\_61 Start: 40456, Stop: 40370, Start Num: 29  
Candidate Starts for Scowl\_61:  
(Start: 29 @40456 has 114 MA's), (30, 40411),

Gene: Seabiscuit\_64 Start: 40427, Stop: 40341, Start Num: 29  
Candidate Starts for Seabiscuit\_64:  
(Start: 29 @40427 has 114 MA's), (32, 40358),

Gene: Seanderson\_60 Start: 41890, Stop: 41804, Start Num: 29  
Candidate Starts for Seanderson\_60:  
(Start: 28 @41902 has 4 MA's), (Start: 29 @41890 has 114 MA's), (32, 41821),

Gene: Sibs6\_63 Start: 39536, Stop: 39450, Start Num: 29  
Candidate Starts for Sibs6\_63:  
(Start: 29 @39536 has 114 MA's), (32, 39467),

Gene: SkiPole\_65 Start: 41165, Stop: 41067, Start Num: 28  
Candidate Starts for SkiPole\_65:  
(Start: 28 @41165 has 4 MA's), (Start: 29 @41153 has 114 MA's),

Gene: Snazzy\_59 Start: 39990, Stop: 39904, Start Num: 29  
Candidate Starts for Snazzy\_59:  
(Start: 29 @39990 has 114 MA's),

Gene: Solon\_58 Start: 39862, Stop: 39776, Start Num: 29  
Candidate Starts for Solon\_58:  
(14, 39922), (Start: 29 @39862 has 114 MA's),

Gene: Squee\_61 Start: 40708, Stop: 40622, Start Num: 29  
Candidate Starts for Squee\_61:  
(Start: 29 @40708 has 114 MA's), (30, 40663),

Gene: Sunshine924\_63 Start: 40103, Stop: 40017, Start Num: 29  
Candidate Starts for Sunshine924\_63:  
(Start: 17 @40145 has 2 MA's), (Start: 29 @40103 has 114 MA's), (30, 40058),

Gene: SwissCheese\_61 Start: 40178, Stop: 40092, Start Num: 29  
Candidate Starts for SwissCheese\_61:  
(Start: 28 @40190 has 4 MA's), (Start: 29 @40178 has 114 MA's), (32, 40109),

Gene: Switzer\_61 Start: 42225, Stop: 42139, Start Num: 29  
Candidate Starts for Switzer\_61:  
(Start: 29 @42225 has 114 MA's),

Gene: Tasp14\_64 Start: 42545, Stop: 42459, Start Num: 29  
Candidate Starts for Tasp14\_64:  
(Start: 17 @42590 has 2 MA's), (25, 42569), (Start: 28 @42557 has 4 MA's), (Start: 29 @42545 has 114 MA's),

Gene: Teodoridan\_58 Start: 39685, Stop: 39587, Start Num: 28

Candidate Starts for Teodoridan\_58:  
(Start: 28 @39685 has 4 MA's), (Start: 29 @39673 has 114 MA's),

Gene: TheloniousMonk\_61 Start: 42308, Stop: 42222, Start Num: 29  
Candidate Starts for TheloniousMonk\_61:  
(12, 42380), (Start: 29 @42308 has 114 MA's),

Gene: Thor\_57 Start: 38988, Stop: 38902, Start Num: 29  
Candidate Starts for Thor\_57:  
(6, 39096), (8, 39084), (Start: 17 @39033 has 2 MA's), (Start: 29 @38988 has 114 MA's), (30, 38943),

Gene: Tote\_57 Start: 38082, Stop: 37996, Start Num: 29  
Candidate Starts for Tote\_57:  
(Start: 29 @38082 has 114 MA's), (31, 38025),

Gene: Traft412\_63 Start: 41489, Stop: 41403, Start Num: 29  
Candidate Starts for Traft412\_63:  
(Start: 29 @41489 has 114 MA's),

Gene: Tripl3t\_63 Start: 43200, Stop: 43114, Start Num: 29  
Candidate Starts for Tripl3t\_63:  
(Start: 24 @43227 has 3 MA's), (Start: 28 @43212 has 4 MA's), (Start: 29 @43200 has 114 MA's),

Gene: Trouble\_62 Start: 41402, Stop: 41316, Start Num: 29  
Candidate Starts for Trouble\_62:  
(Start: 29 @41402 has 114 MA's), (32, 41333),

Gene: Turj99\_59 Start: 41800, Stop: 41714, Start Num: 29  
Candidate Starts for Turj99\_59:  
(2, 42001), (15, 41857), (16, 41854), (Start: 29 @41800 has 114 MA's),

Gene: Watermelon\_61 Start: 40365, Stop: 40279, Start Num: 29  
Candidate Starts for Watermelon\_61:  
(Start: 29 @40365 has 114 MA's), (32, 40296),

Gene: Zeeculate\_58 Start: 41115, Stop: 41029, Start Num: 29  
Candidate Starts for Zeeculate\_58:  
(Start: 29 @41115 has 114 MA's), (31, 41058), (32, 41046),

Gene: Zephyr\_62 Start: 40532, Stop: 40446, Start Num: 29  
Candidate Starts for Zephyr\_62:  
(Start: 29 @40532 has 114 MA's), (32, 40463),

Gene: Zeuska\_60 Start: 41858, Stop: 41760, Start Num: 28  
Candidate Starts for Zeuska\_60:  
(Start: 28 @41858 has 4 MA's), (Start: 29 @41846 has 114 MA's),