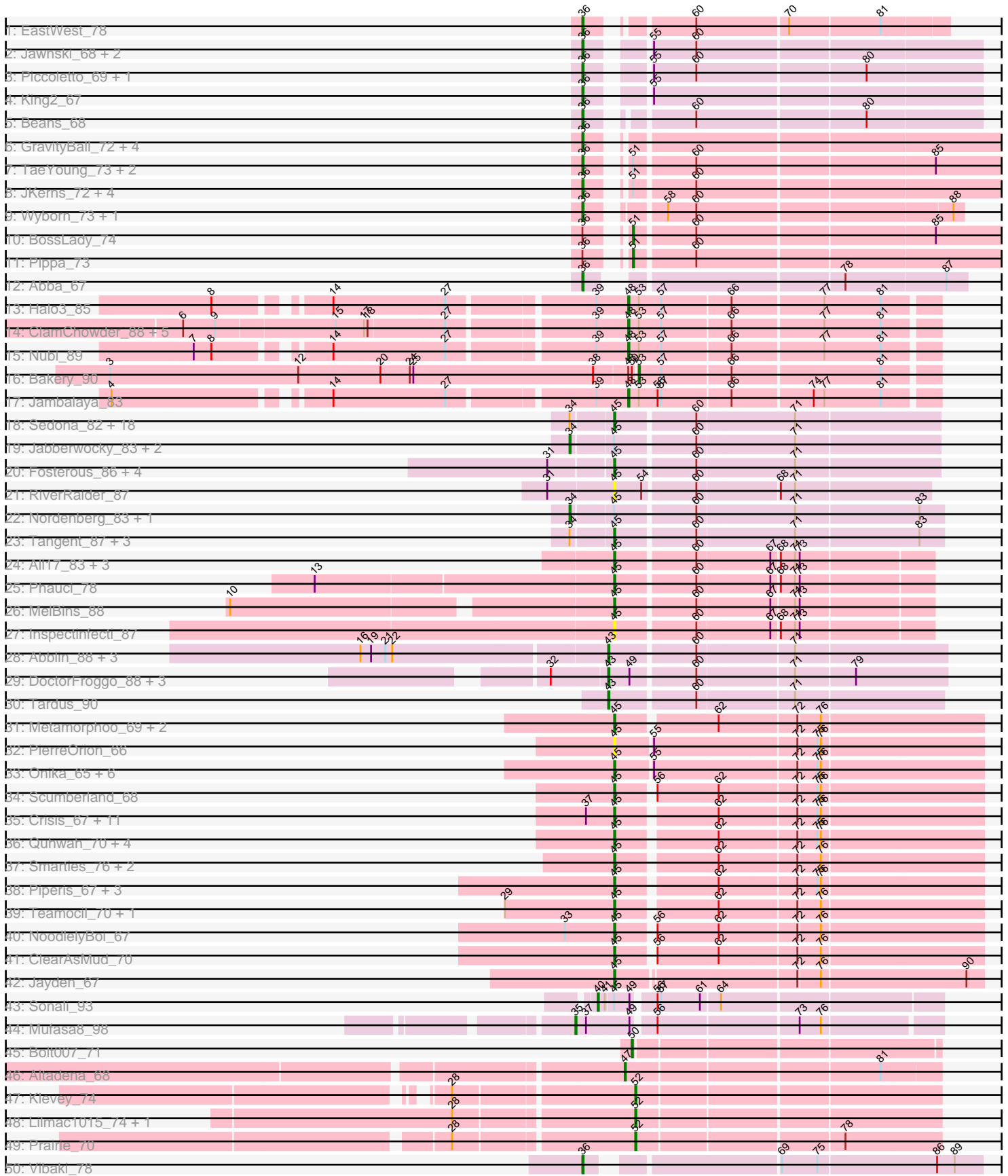
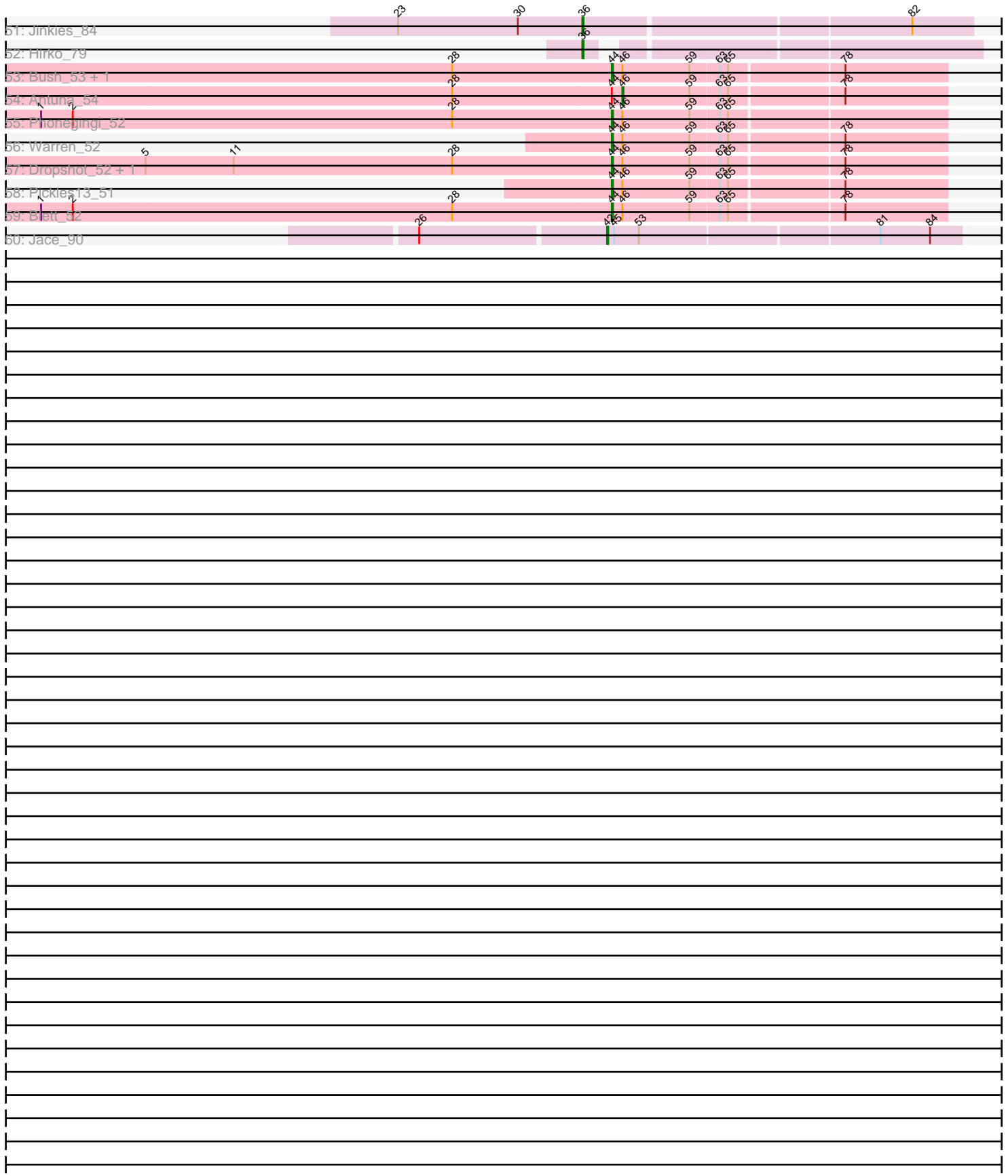


Pham 171257



# Pham 171257



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 171257 Report

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

Pham number 171257 has 148 members, 11 are drafts.

Phages represented in each track:

- Track 1 : EastWest\_78
- Track 2 : Jawnski\_68, Brent\_69, Franzy\_67
- Track 3 : Piccoletto\_69, NathanVaag\_68
- Track 4 : King2\_67
- Track 5 : Beans\_68
- Track 6 : GravityBall\_72, Timinator\_73, LeeroyJ\_73, StevieBAY\_73, BarretLemon\_72
- Track 7 : TaeYoung\_73, Grekaycon\_73, Martha\_72
- Track 8 : JKerns\_72, Shade\_72, Sonny\_72, Jordan\_73, Zartrosa\_74
- Track 9 : Wyborn\_73, Sicarius2\_74
- Track 10 : BossLady\_74
- Track 11 : Pippa\_73
- Track 12 : Abba\_67
- Track 13 : Halo3\_85
- Track 14 : ClamChowder\_88, Barb\_89, Danyall\_86, YungMoney\_85, Fugax\_89, Mutzi\_85
- Track 15 : Nubi\_89
- Track 16 : Bakery\_90
- Track 17 : Jambalaya\_83
- Track 18 : Sedona\_82, Paries\_88, Lennon\_84, BobBob\_86, Stultus\_79, Fitzgerald\_82, ChadMasterC\_83, Angelicage\_83, Shivanishola\_86, Sanjuju\_82, Ailee\_82, Bibwit\_82, Affeca\_86, McKinley\_87, Sitar\_83, Love\_90, Brandonk123\_88, Baddon\_82, Kewpiedoll\_85
- Track 19 : Jabberwocky\_83, MoontowerMania\_85, Keitabear\_82
- Track 20 : Fosterous\_86, Kamashten\_85, Galadriel\_85, Thing3\_85, Rofo\_84
- Track 21 : RiverRaider\_87
- Track 22 : Nordenberg\_83, Charming\_87
- Track 23 : Tangent\_87, Vivi2\_88, Barsten\_87, Geodirt\_84
- Track 24 : Ali17\_83, Leonard\_86, Hans\_87, Phinally\_86
- Track 25 : Phauci\_78
- Track 26 : MelBins\_88
- Track 27 : Inspectinfecti\_87
- Track 28 : Abblin\_88, Natkenzie\_88, Sampson\_90, Scioto\_88
- Track 29 : DoctorFroggo\_88, Verity\_87, Zipp\_88, Delrey21\_88
- Track 30 : Tardus\_90
- Track 31 : Metamorphoo\_69, Tyumbra\_65, RobsFeet\_70
- Track 32 : PierreOrion\_66

- Track 33 : Onika\_65, Kowalski\_65, Paschalis\_66, BrazzalePHS\_65, Jollipop\_67, PiperSansNom\_67, Ramiel05\_65
- Track 34 : Scumberland\_68
- Track 35 : Crisis\_67, Antares\_66, Shotgun\_66, Phorgeous\_66, CrazyRich\_65, Honeyfin\_67, Jefe\_66, Busephilis\_65, Ganandorf\_65, Selwyn23\_67, Pulchra\_68, Phrancesco\_66
- Track 36 : Quhwah\_70, Hermeonysus\_66, Savannah\_65, LittleFortune\_68, Cranjis\_67
- Track 37 : Smarties\_76, Fireman\_69, Ariadne\_76
- Track 38 : Piperis\_67, KaiHaiDragon\_67, Yeti\_66, EarickHC\_67
- Track 39 : Teamocil\_70, Gina\_70
- Track 40 : NoodlelyBoi\_67
- Track 41 : ClearAsMud\_70
- Track 42 : Jayden\_67
- Track 43 : Sonali\_93
- Track 44 : Mufasa8\_98
- Track 45 : Bolt007\_71
- Track 46 : Altadena\_68
- Track 47 : Klevey\_74
- Track 48 : Lilmac1015\_74, CalWood4100\_74
- Track 49 : Prairie\_70
- Track 50 : Vibaki\_78
- Track 51 : Jinkies\_84
- Track 52 : Hirko\_79
- Track 53 : Bush\_53, MenE\_57
- Track 54 : Antuna\_54
- Track 55 : Phonegingi\_52
- Track 56 : Warren\_52
- Track 57 : Dropshot\_52, Appa\_52
- Track 58 : Pickles13\_51
- Track 59 : Blett\_52
- Track 60 : Jace\_90

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

The start number called the most often in the published annotations is 45, it was called in 72 of the 137 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca\_86, Ailee\_82, Ali17\_83, Angelicage\_83, Antares\_66, Ariadne\_76, Baddon\_82, Barsten\_87, Bibwit\_82, BobBob\_86, Brandonk123\_88, BrazzalePHS\_65, Busephilis\_65, ChadMasterC\_83, ClearAsMud\_70, Cranjis\_67, CrazyRich\_65, Crisis\_67, EarickHC\_67, Fireman\_69, Fitzgerald\_82, Fosterous\_86, Galadriel\_85, Ganandorf\_65, Geodirt\_84, Gina\_70, Hans\_87, Hermeonysus\_66, Honeyfin\_67, Inspectinfecti\_87, Jayden\_67, Jefe\_66, Jollipop\_67, KaiHaiDragon\_67, Kamashten\_85, Kewpiedoll\_85, Kowalski\_65, Lennon\_84, Leonard\_86, LittleFortune\_68, Love\_90, McKinley\_87, MelBins\_88, Metamorphoo\_69, NoodlelyBoi\_67, Onika\_65, Paries\_88, Paschalis\_66, Phauci\_78, Phinally\_86, Phorgeous\_66, Phrancesco\_66, PierreOrion\_66, PiperSansNom\_67, Piperis\_67, Pulchra\_68, Quhwah\_70, Ramiel05\_65, RiverRaider\_87, RobsFeet\_70, Rofo\_84,

Sanjuju\_82, Savannah\_65, Scumberland\_68, Sedona\_82, Selwyn23\_67, Shivanishola\_86, Shotgun\_66, Sitar\_83, Smarties\_76, Stultus\_79, Tangent\_87, Teamocil\_70, Thing3\_85, Tyrumbra\_65, Vivi2\_88, Yeti\_66,

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

• Charming\_87, Jabberwocky\_83, Jace\_90, Keitabear\_82, MoontowerMania\_85, Nordenberg\_83, Sonali\_93,

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

• Abba\_67, Abblin\_88, Altadena\_68, Antuna\_54, Appa\_52, Bakery\_90, Barb\_89, BarretLemon\_72, Beans\_68, Blett\_52, Bolt007\_71, BossLady\_74, Brent\_69, Bush\_53, CalWood4100\_74, ClamChowder\_88, Danyall\_86, Delrey21\_88, DoctorFroggo\_88, Dropshot\_52, EastWest\_78, Franzy\_67, Fugax\_89, GravityBall\_72, Grekaycon\_73, Halo3\_85, Hirko\_79, JKerns\_72, Jambalaya\_83, Jawnski\_68, Jinkies\_84, Jordan\_73, King2\_67, Klevey\_74, LeeroyJ\_73, Lilmac1015\_74, Martha\_72, MenE\_57, Mufasa8\_98, Mutzi\_85, NathanVaag\_68, Natkenzie\_88, Nubi\_89, Phonegingi\_52, Piccoletto\_69, Pickles13\_51, Pippa\_73, Prairie\_70, Sampson\_90, Scioto\_88, Shade\_72, Sicarius2\_74, Sonny\_72, StevieBAY\_73, TaeYoung\_73, Tardus\_90, Timinator\_73, Verity\_87, Vibaki\_78, Warren\_52, Wyborn\_73, YungMoney\_85, Zartrosa\_74, Zipp\_88,

### Summary by start number:

Start 34:

- Found in 28 of 148 ( 18.9% ) of genes in pham
- Manual Annotations of this start: 5 of 137
- Called 17.9% of time when present
- Phage (with cluster) where this start called: Charming\_87 (DE1), Jabberwocky\_83 (DE1), Keitabear\_82 (DE1), MoontowerMania\_85 (DE1), Nordenberg\_83 (DE1),

Start 35:

- Found in 1 of 148 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mufasa8\_98 (FG),

Start 36:

- Found in 29 of 148 ( 19.6% ) of genes in pham
- Manual Annotations of this start: 26 of 137
- Called 93.1% of time when present
- Phage (with cluster) where this start called: Abba\_67 (AO3), BarretLemon\_72 (AO2), Beans\_68 (AO1), Brent\_69 (AO1), EastWest\_78 (AO), Franzy\_67 (AO1), GravityBall\_72 (AO2), Grekaycon\_73 (AO2), Hirko\_79 (FL), JKerns\_72 (AO2), Jawnski\_68 (AO1), Jinkies\_84 (FL), Jordan\_73 (AO2), King2\_67 (AO1), LeeroyJ\_73 (AO2), Martha\_72 (AO2), NathanVaag\_68 (AO1), Piccoletto\_69 (AO1), Shade\_72 (AO2), Sicarius2\_74 (AO2), Sonny\_72 (AO2), StevieBAY\_73 (AO2), TaeYoung\_73 (AO2), Timinator\_73 (AO2), Vibaki\_78 (FL), Wyborn\_73 (AO2), Zartrosa\_74 (AO2),

Start 40:

- Found in 1 of 148 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Sonali\_93 (FG),

Start 42:

- Found in 1 of 148 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jace\_90 (singleton),

Start 43:

- Found in 9 of 148 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 6 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abblin\_88 (DE4), Delrey21\_88 (DE4), DoctorFroggo\_88 (DE4), Natkenzie\_88 (DE4), Sampson\_90 (DE4), Scioto\_88 (DE4), Tardus\_90 (DE4), Verity\_87 (DE4), Zipp\_88 (DE4),

Start 44:

- Found in 9 of 148 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 7 of 137
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Appa\_52 (GA), Blett\_52 (GA), Bush\_53 (GA), Dropshot\_52 (GA), MenE\_57 (GA), Phonegingi\_52 (GA), Pickles13\_51 (GA), Warren\_52 (GA),

Start 45:

- Found in 84 of 148 ( 56.8% ) of genes in pham
- Manual Annotations of this start: 72 of 137
- Called 91.7% of time when present
- Phage (with cluster) where this start called: Affeca\_86 (DE1), Ailee\_82 (DE1), Ali17\_83 (DE2), Angelicage\_83 (DE1), Antares\_66 (EC), Ariadne\_76 (EC), Baddon\_82 (DE1), Barsten\_87 (DE1), Bibwit\_82 (DE1), BobBob\_86 (DE1), Brandonk123\_88 (DE1), BrazzalePHS\_65 (EC), Busephilis\_65 (EC), ChadMasterC\_83 (DE1), ClearAsMud\_70 (EC), Cranjis\_67 (EC), CrazyRich\_65 (EC), Crisis\_67 (EC), EarickHC\_67 (EC), Fireman\_69 (EC), Fitzgerald\_82 (DE1), Fosterous\_86 (DE1), Galadriel\_85 (DE1), Ganandorf\_65 (EC), Geodirt\_84 (DE1), Gina\_70 (EC), Hans\_87 (DE2), Hermeonysus\_66 (EC), Honeyfin\_67 (EC), Inspectinfecti\_87 (DE2), Jayden\_67 (EC), Jefe\_66 (EC), Jollipop\_67 (EC), KaiHaiDragon\_67 (EC), Kamashten\_85 (DE1), Kewpiedoll\_85 (DE1), Kowalski\_65 (EC), Lennon\_84 (DE1), Leonard\_86 (DE2), LittleFortune\_68 (EC), Love\_90 (DE1), McKinley\_87 (DE1), MelBins\_88 (DE2), Metamorphoo\_69 (EC), NoodlelyBoi\_67 (EC), Onika\_65 (EC), Paries\_88 (DE1), Paschalis\_66 (EC), Phauci\_78 (DE2), Phinally\_86 (DE2), Phorgeous\_66 (EC), Phrancesco\_66 (EC), PierreOrion\_66 (EC), PiperSansNom\_67 (EC), Piperis\_67 (EC), Pulchra\_68 (EC), Quhwah\_70 (EC), Ramiel05\_65 (EC), RiverRaider\_87 (DE1), RobsFeet\_70 (EC), Rofo\_84 (DE1), Sanjuju\_82 (DE1), Savannah\_65 (EC), Scumberland\_68 (EC), Sedona\_82 (DE1), Selwyn23\_67 (EC), Shivanishola\_86 (DE1), Shotgun\_66 (EC), Sitar\_83 (DE1), Smarties\_76 (EC), Stultus\_79 (DE1), Tangent\_87 (DE1), Teamocil\_70 (EC), Thing3\_85 (DE1), Tyumbra\_65 (EC), Vivi2\_88 (DE1), Yeti\_66 (EC),

Start 46:

- Found in 9 of 148 ( 6.1% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 11.1% of time when present
- Phage (with cluster) where this start called: Antuna\_54 (GA),

Start 47:

- Found in 1 of 148 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altadena\_68 (FH),

Start 48:

- Found in 10 of 148 ( 6.8% ) of genes in pham
- Manual Annotations of this start: 9 of 137
- Called 90.0% of time when present
- Phage (with cluster) where this start called: Barb\_89 (DC1), ClamChowder\_88 (DC1), Danyall\_86 (DC1), Fugax\_89 (DC1), Halo3\_85 (DC1), Jambalaya\_83 (DC1), Mutzi\_85 (DC1), Nubi\_89 (DC1), YungMoney\_85 (DC1),

Start 50:

- Found in 2 of 148 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Bolt007\_71 (FH),

Start 51:

- Found in 10 of 148 ( 6.8% ) of genes in pham
- Manual Annotations of this start: 2 of 137
- Called 20.0% of time when present
- Phage (with cluster) where this start called: BossLady\_74 (AO2), Pippa\_73 (AO2),

Start 52:

- Found in 4 of 148 ( 2.7% ) of genes in pham
- Manual Annotations of this start: 3 of 137
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CalWood4100\_74 (FH), Klevey\_74 (FH), Lilmac1015\_74 (FH), Prairie\_70 (FH),

Start 53:

- Found in 11 of 148 ( 7.4% ) of genes in pham
- Manual Annotations of this start: 1 of 137
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Bakery\_90 (DC1),

**Summary by clusters:**

There are 14 clusters represented in this pham: singleton, AO1, AO, DE1, DE2, DE4, EC, AO3, AO2, GA, FG, FH, FL, DC1,

Info for manual annotations of cluster AO:

- Start number 36 was manually annotated 1 time for cluster AO.

Info for manual annotations of cluster AO1:

- Start number 36 was manually annotated 7 times for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 36 was manually annotated 14 times for cluster AO2.

- Start number 51 was manually annotated 2 times for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 36 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster DC1:

- Start number 48 was manually annotated 9 times for cluster DC1.
- Start number 53 was manually annotated 1 time for cluster DC1.

Info for manual annotations of cluster DE1:

- Start number 34 was manually annotated 5 times for cluster DE1.
- Start number 45 was manually annotated 27 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 45 was manually annotated 6 times for cluster DE2.

Info for manual annotations of cluster DE4:

- Start number 43 was manually annotated 6 times for cluster DE4.

Info for manual annotations of cluster EC:

- Start number 45 was manually annotated 39 times for cluster EC.

Info for manual annotations of cluster FG:

- Start number 35 was manually annotated 1 time for cluster FG.
- Start number 40 was manually annotated 1 time for cluster FG.

Info for manual annotations of cluster FH:

- Start number 47 was manually annotated 1 time for cluster FH.
- Start number 50 was manually annotated 1 time for cluster FH.
- Start number 52 was manually annotated 3 times for cluster FH.

Info for manual annotations of cluster FL:

- Start number 36 was manually annotated 3 times for cluster FL.

Info for manual annotations of cluster GA:

- Start number 44 was manually annotated 7 times for cluster GA.
- Start number 46 was manually annotated 1 time for cluster GA.

### ***Gene Information:***

Gene: Abba\_67 Start: 42825, Stop: 42538, Start Num: 36

Candidate Starts for Abba\_67:

(Start: 36 @42825 has 26 MA's), (78, 42639), (87, 42555),

Gene: Abblin\_88 Start: 58873, Stop: 59145, Start Num: 43

Candidate Starts for Abblin\_88:

(16, 58672), (19, 58681), (21, 58693), (22, 58699), (Start: 43 @58873 has 6 MA's), (60, 58942), (71, 59020),

Gene: Affeca\_86 Start: 58157, Stop: 58420, Start Num: 45

Candidate Starts for Affeca\_86:



(Start: 34 @58124 has 5 MA's), (Start: 45 @58157 has 72 MA's), (60, 58220), (71, 58301),

Gene: Ailee\_82 Start: 57328, Stop: 57591, Start Num: 45

Candidate Starts for Ailee\_82:

(Start: 34 @57295 has 5 MA's), (Start: 45 @57328 has 72 MA's), (60, 57391), (71, 57472),

Gene: Ali17\_83 Start: 57614, Stop: 57865, Start Num: 45

Candidate Starts for Ali17\_83:

(Start: 45 @57614 has 72 MA's), (60, 57677), (67, 57737), (68, 57743), (71, 57755), (73, 57758),

Gene: Altadena\_68 Start: 43198, Stop: 42947, Start Num: 47

Candidate Starts for Altadena\_68:

(Start: 47 @43198 has 1 MA's), (81, 42994),

Gene: Angelicage\_83 Start: 58231, Stop: 58494, Start Num: 45

Candidate Starts for Angelicage\_83:

(Start: 34 @58198 has 5 MA's), (Start: 45 @58231 has 72 MA's), (60, 58294), (71, 58375),

Gene: Antares\_66 Start: 41631, Stop: 41924, Start Num: 45

Candidate Starts for Antares\_66:

(37, 41607), (Start: 45 @41631 has 72 MA's), (62, 41709), (72, 41772), (75, 41787), (76, 41790),

Gene: Antuna\_54 Start: 32652, Stop: 32918, Start Num: 46

Candidate Starts for Antuna\_54:

(28, 32508), (Start: 44 @32643 has 7 MA's), (Start: 46 @32652 has 1 MA's), (59, 32709), (63, 32733), (65, 32739), (78, 32832),

Gene: Appa\_52 Start: 32408, Stop: 32683, Start Num: 44

Candidate Starts for Appa\_52:

(5, 32012), (11, 32087), (28, 32273), (Start: 44 @32408 has 7 MA's), (Start: 46 @32417 has 1 MA's), (59, 32474), (63, 32498), (65, 32504), (78, 32597),

Gene: Ariadne\_76 Start: 43251, Stop: 43544, Start Num: 45

Candidate Starts for Ariadne\_76:

(Start: 45 @43251 has 72 MA's), (62, 43329), (72, 43392), (76, 43410),

Gene: Baddon\_82 Start: 57243, Stop: 57506, Start Num: 45

Candidate Starts for Baddon\_82:

(Start: 34 @57210 has 5 MA's), (Start: 45 @57243 has 72 MA's), (60, 57306), (71, 57387),

Gene: Bakery\_90 Start: 58633, Stop: 58391, Start Num: 53

Candidate Starts for Bakery\_90:

(3, 59074), (12, 58915), (20, 58846), (24, 58822), (25, 58819), (38, 58666), (Start: 48 @58639 has 9 MA's), (Start: 50 @58636 has 1 MA's), (Start: 53 @58633 has 1 MA's), (57, 58615), (66, 58558), (81, 58435),

Gene: Barb\_89 Start: 56790, Stop: 56539, Start Num: 48

Candidate Starts for Barb\_89:

(6, 57147), (9, 57120), (15, 57021), (17, 56997), (18, 56994), (27, 56931), (39, 56817), (Start: 48 @56790 has 9 MA's), (Start: 53 @56781 has 1 MA's), (57, 56763), (66, 56706), (77, 56631), (81, 56583),

Gene: BarretLemon\_72 Start: 46543, Stop: 46214, Start Num: 36

Candidate Starts for BarretLemon\_72:

(Start: 36 @46543 has 26 MA's),

Gene: Barsten\_87 Start: 58499, Stop: 58765, Start Num: 45

Candidate Starts for Barsten\_87:

(Start: 34 @58466 has 5 MA's), (Start: 45 @58499 has 72 MA's), (60, 58562), (71, 58643), (83, 58745),

Gene: Beans\_68 Start: 45863, Stop: 45561, Start Num: 36

Candidate Starts for Beans\_68:

(Start: 36 @45863 has 26 MA's), (60, 45794), (80, 45656),

Gene: Bibwit\_82 Start: 56692, Stop: 56955, Start Num: 45

Candidate Starts for Bibwit\_82:

(Start: 34 @56659 has 5 MA's), (Start: 45 @56692 has 72 MA's), (60, 56755), (71, 56836),

Gene: Blett\_52 Start: 32593, Stop: 32868, Start Num: 44

Candidate Starts for Blett\_52:

(1, 32110), (2, 32137), (28, 32458), (Start: 44 @32593 has 7 MA's), (Start: 46 @32602 has 1 MA's), (59, 32659), (63, 32683), (65, 32689), (78, 32782),

Gene: BobBob\_86 Start: 57531, Stop: 57794, Start Num: 45

Candidate Starts for BobBob\_86:

(Start: 34 @57498 has 5 MA's), (Start: 45 @57531 has 72 MA's), (60, 57594), (71, 57675),

Gene: Bolt007\_71 Start: 45075, Stop: 44833, Start Num: 50

Candidate Starts for Bolt007\_71:

(Start: 50 @45075 has 1 MA's),

Gene: BossLady\_74 Start: 47057, Stop: 46746, Start Num: 51

Candidate Starts for BossLady\_74:

(Start: 36 @47078 has 26 MA's), (Start: 51 @47057 has 2 MA's), (60, 47009), (85, 46814),

Gene: Brandonk123\_88 Start: 57696, Stop: 57959, Start Num: 45

Candidate Starts for Brandonk123\_88:

(Start: 34 @57663 has 5 MA's), (Start: 45 @57696 has 72 MA's), (60, 57759), (71, 57840),

Gene: BrazzalePHS\_65 Start: 41393, Stop: 41692, Start Num: 45

Candidate Starts for BrazzalePHS\_65:

(Start: 45 @41393 has 72 MA's), (55, 41423), (72, 41540), (75, 41555), (76, 41558),

Gene: Brent\_69 Start: 46039, Stop: 45731, Start Num: 36

Candidate Starts for Brent\_69:

(Start: 36 @46039 has 26 MA's), (55, 46000), (60, 45964),

Gene: Busephilis\_65 Start: 41338, Stop: 41631, Start Num: 45

Candidate Starts for Busephilis\_65:

(37, 41314), (Start: 45 @41338 has 72 MA's), (62, 41416), (72, 41479), (75, 41494), (76, 41497),

Gene: Bush\_53 Start: 32542, Stop: 32817, Start Num: 44

Candidate Starts for Bush\_53:

(28, 32407), (Start: 44 @32542 has 7 MA's), (Start: 46 @32551 has 1 MA's), (59, 32608), (63, 32632), (65, 32638), (78, 32731),

Gene: CalWood4100\_74 Start: 45377, Stop: 45132, Start Num: 52  
Candidate Starts for CalWood4100\_74:  
(28, 45521), (Start: 52 @45377 has 3 MA's),

Gene: ChadMasterC\_83 Start: 58686, Stop: 58949, Start Num: 45  
Candidate Starts for ChadMasterC\_83:  
(Start: 34 @58653 has 5 MA's), (Start: 45 @58686 has 72 MA's), (60, 58749), (71, 58830),

Gene: Charming\_87 Start: 56965, Stop: 57264, Start Num: 34  
Candidate Starts for Charming\_87:  
(Start: 34 @56965 has 5 MA's), (Start: 45 @56998 has 72 MA's), (60, 57061), (71, 57142), (83, 57244),

Gene: ClamChowder\_88 Start: 56790, Stop: 56539, Start Num: 48  
Candidate Starts for ClamChowder\_88:  
(6, 57147), (9, 57120), (15, 57021), (17, 56997), (18, 56994), (27, 56931), (39, 56817), (Start: 48 @56790 has 9 MA's), (Start: 53 @56781 has 1 MA's), (57, 56763), (66, 56706), (77, 56631), (81, 56583),

Gene: ClearAsMud\_70 Start: 41913, Stop: 42206, Start Num: 45  
Candidate Starts for ClearAsMud\_70:  
(Start: 45 @41913 has 72 MA's), (56, 41940), (62, 41991), (72, 42054), (76, 42072),

Gene: Cranjjs\_67 Start: 41586, Stop: 41879, Start Num: 45  
Candidate Starts for Cranjjs\_67:  
(Start: 45 @41586 has 72 MA's), (62, 41664), (72, 41727), (75, 41742), (76, 41745),

Gene: CrazyRich\_65 Start: 41392, Stop: 41685, Start Num: 45  
Candidate Starts for CrazyRich\_65:  
(37, 41368), (Start: 45 @41392 has 72 MA's), (62, 41470), (72, 41533), (75, 41548), (76, 41551),

Gene: Crisis\_67 Start: 41401, Stop: 41694, Start Num: 45  
Candidate Starts for Crisis\_67:  
(37, 41377), (Start: 45 @41401 has 72 MA's), (62, 41479), (72, 41542), (75, 41557), (76, 41560),

Gene: Danyall\_86 Start: 55971, Stop: 55720, Start Num: 48  
Candidate Starts for Danyall\_86:  
(6, 56328), (9, 56301), (15, 56202), (17, 56178), (18, 56175), (27, 56112), (39, 55998), (Start: 48 @55971 has 9 MA's), (Start: 53 @55962 has 1 MA's), (57, 55944), (66, 55887), (77, 55812), (81, 55764),

Gene: Delrey21\_88 Start: 60349, Stop: 60621, Start Num: 43  
Candidate Starts for Delrey21\_88:  
(32, 60304), (Start: 43 @60349 has 6 MA's), (49, 60367), (60, 60418), (71, 60496), (79, 60544),

Gene: DoctorFroggo\_88 Start: 60349, Stop: 60621, Start Num: 43  
Candidate Starts for DoctorFroggo\_88:  
(32, 60304), (Start: 43 @60349 has 6 MA's), (49, 60367), (60, 60418), (71, 60496), (79, 60544),

Gene: Dropshot\_52 Start: 32243, Stop: 32518, Start Num: 44  
Candidate Starts for Dropshot\_52:

(5, 31847), (11, 31922), (28, 32108), (Start: 44 @32243 has 7 MA's), (Start: 46 @32252 has 1 MA's), (59, 32309), (63, 32333), (65, 32339), (78, 32432),

Gene: EarickHC\_67 Start: 41323, Stop: 41616, Start Num: 45

Candidate Starts for EarickHC\_67:

(Start: 45 @41323 has 72 MA's), (62, 41401), (72, 41464), (75, 41479), (76, 41482),

Gene: EastWest\_78 Start: 46071, Stop: 45799, Start Num: 36

Candidate Starts for EastWest\_78:

(Start: 36 @46071 has 26 MA's), (60, 46002), (70, 45927), (81, 45852),

Gene: Fireman\_69 Start: 43363, Stop: 43656, Start Num: 45

Candidate Starts for Fireman\_69:

(Start: 45 @43363 has 72 MA's), (62, 43441), (72, 43504), (76, 43522),

Gene: Fitzgerald\_82 Start: 57842, Stop: 58105, Start Num: 45

Candidate Starts for Fitzgerald\_82:

(Start: 34 @57809 has 5 MA's), (Start: 45 @57842 has 72 MA's), (60, 57905), (71, 57986),

Gene: Fosterous\_86 Start: 57990, Stop: 58253, Start Num: 45

Candidate Starts for Fosterous\_86:

(31, 57939), (Start: 45 @57990 has 72 MA's), (60, 58053), (71, 58134),

Gene: Franzy\_67 Start: 46121, Stop: 45813, Start Num: 36

Candidate Starts for Franzy\_67:

(Start: 36 @46121 has 26 MA's), (55, 46082), (60, 46046),

Gene: Fugax\_89 Start: 56782, Stop: 56531, Start Num: 48

Candidate Starts for Fugax\_89:

(6, 57139), (9, 57112), (15, 57013), (17, 56989), (18, 56986), (27, 56923), (39, 56809), (Start: 48 @56782 has 9 MA's), (Start: 53 @56773 has 1 MA's), (57, 56755), (66, 56698), (77, 56623), (81, 56575),

Gene: Galadriel\_85 Start: 58206, Stop: 58469, Start Num: 45

Candidate Starts for Galadriel\_85:

(31, 58155), (Start: 45 @58206 has 72 MA's), (60, 58269), (71, 58350),

Gene: Ganandorf\_65 Start: 41419, Stop: 41712, Start Num: 45

Candidate Starts for Ganandorf\_65:

(37, 41395), (Start: 45 @41419 has 72 MA's), (62, 41497), (72, 41560), (75, 41575), (76, 41578),

Gene: Geodirt\_84 Start: 58493, Stop: 58759, Start Num: 45

Candidate Starts for Geodirt\_84:

(Start: 34 @58460 has 5 MA's), (Start: 45 @58493 has 72 MA's), (60, 58556), (71, 58637), (83, 58739),

Gene: Gina\_70 Start: 41480, Stop: 41773, Start Num: 45

Candidate Starts for Gina\_70:

(29, 41387), (Start: 45 @41480 has 72 MA's), (62, 41558), (72, 41621), (76, 41639),

Gene: GravityBall\_72 Start: 46734, Stop: 46405, Start Num: 36

Candidate Starts for GravityBall\_72:

(Start: 36 @46734 has 26 MA's),

Gene: Grekaycon\_73 Start: 46991, Stop: 46659, Start Num: 36

Candidate Starts for Grekaycon\_73:

(Start: 36 @46991 has 26 MA's), (Start: 51 @46970 has 2 MA's), (60, 46922), (85, 46727),

Gene: Halo3\_85 Start: 56796, Stop: 56545, Start Num: 48

Candidate Starts for Halo3\_85:

(8, 57108), (14, 57030), (27, 56937), (39, 56823), (Start: 48 @56796 has 9 MA's), (Start: 53 @56787 has 1 MA's), (57, 56769), (66, 56712), (77, 56637), (81, 56589),

Gene: Hans\_87 Start: 58571, Stop: 58822, Start Num: 45

Candidate Starts for Hans\_87:

(Start: 45 @58571 has 72 MA's), (60, 58634), (67, 58694), (68, 58700), (71, 58712), (73, 58715),

Gene: Hermeonysus\_66 Start: 41314, Stop: 41607, Start Num: 45

Candidate Starts for Hermeonysus\_66:

(Start: 45 @41314 has 72 MA's), (62, 41392), (72, 41455), (75, 41470), (76, 41473),

Gene: Hirko\_79 Start: 48513, Stop: 48205, Start Num: 36

Candidate Starts for Hirko\_79:

(Start: 36 @48513 has 26 MA's),

Gene: Honeyfin\_67 Start: 41574, Stop: 41867, Start Num: 45

Candidate Starts for Honeyfin\_67:

(37, 41550), (Start: 45 @41574 has 72 MA's), (62, 41652), (72, 41715), (75, 41730), (76, 41733),

Gene: Inspectinfecti\_87 Start: 58519, Stop: 58770, Start Num: 45

Candidate Starts for Inspectinfecti\_87:

(Start: 45 @58519 has 72 MA's), (60, 58582), (67, 58642), (68, 58648), (71, 58660), (73, 58663),

Gene: JKerns\_72 Start: 46983, Stop: 46651, Start Num: 36

Candidate Starts for JKerns\_72:

(Start: 36 @46983 has 26 MA's), (Start: 51 @46962 has 2 MA's), (60, 46914),

Gene: Jabberwocky\_83 Start: 58270, Stop: 58566, Start Num: 34

Candidate Starts for Jabberwocky\_83:

(Start: 34 @58270 has 5 MA's), (Start: 45 @58303 has 72 MA's), (60, 58366), (71, 58447),

Gene: Jace\_90 Start: 50456, Stop: 50166, Start Num: 42

Candidate Starts for Jace\_90:

(26, 50609), (Start: 42 @50456 has 1 MA's), (Start: 45 @50450 has 72 MA's), (Start: 53 @50429 has 1 MA's), (81, 50234), (84, 50192),

Gene: Jambalaya\_83 Start: 55378, Stop: 55127, Start Num: 48

Candidate Starts for Jambalaya\_83:

(4, 55774), (14, 55612), (27, 55519), (39, 55405), (Start: 48 @55378 has 9 MA's), (Start: 53 @55369 has 1 MA's), (56, 55354), (57, 55351), (66, 55294), (74, 55228), (77, 55219), (81, 55171),

Gene: Jawnski\_68 Start: 45564, Stop: 45256, Start Num: 36

Candidate Starts for Jawnski\_68:

(Start: 36 @45564 has 26 MA's), (55, 45525), (60, 45489),

Gene: Jayden\_67 Start: 41914, Stop: 42210, Start Num: 45

Candidate Starts for Jayden\_67:  
(Start: 45 @41914 has 72 MA's), (72, 42058), (76, 42076), (90, 42196),

Gene: Jefe\_66 Start: 41369, Stop: 41662, Start Num: 45  
Candidate Starts for Jefe\_66:  
(37, 41345), (Start: 45 @41369 has 72 MA's), (62, 41447), (72, 41510), (75, 41525), (76, 41528),

Gene: Jinkies\_84 Start: 48737, Stop: 48420, Start Num: 36  
Candidate Starts for Jinkies\_84:  
(23, 48893), (30, 48791), (Start: 36 @48737 has 26 MA's), (82, 48470),

Gene: Jollipop\_67 Start: 41751, Stop: 42050, Start Num: 45  
Candidate Starts for Jollipop\_67:  
(Start: 45 @41751 has 72 MA's), (55, 41781), (72, 41898), (75, 41913), (76, 41916),

Gene: Jordan\_73 Start: 47141, Stop: 46809, Start Num: 36  
Candidate Starts for Jordan\_73:  
(Start: 36 @47141 has 26 MA's), (Start: 51 @47120 has 2 MA's), (60, 47072),

Gene: KaiHaiDragon\_67 Start: 41323, Stop: 41616, Start Num: 45  
Candidate Starts for KaiHaiDragon\_67:  
(Start: 45 @41323 has 72 MA's), (62, 41401), (72, 41464), (75, 41479), (76, 41482),

Gene: Kamashten\_85 Start: 58100, Stop: 58363, Start Num: 45  
Candidate Starts for Kamashten\_85:  
(31, 58049), (Start: 45 @58100 has 72 MA's), (60, 58163), (71, 58244),

Gene: Keitabear\_82 Start: 58580, Stop: 58876, Start Num: 34  
Candidate Starts for Keitabear\_82:  
(Start: 34 @58580 has 5 MA's), (Start: 45 @58613 has 72 MA's), (60, 58676), (71, 58757),

Gene: Kewpiedoll\_85 Start: 58474, Stop: 58737, Start Num: 45  
Candidate Starts for Kewpiedoll\_85:  
(Start: 34 @58441 has 5 MA's), (Start: 45 @58474 has 72 MA's), (60, 58537), (71, 58618),

Gene: King2\_67 Start: 46100, Stop: 45792, Start Num: 36  
Candidate Starts for King2\_67:  
(Start: 36 @46100 has 26 MA's), (55, 46061),

Gene: Klevey\_74 Start: 45284, Stop: 45039, Start Num: 52  
Candidate Starts for Klevey\_74:  
(28, 45428), (Start: 52 @45284 has 3 MA's),

Gene: Kowalski\_65 Start: 41388, Stop: 41687, Start Num: 45  
Candidate Starts for Kowalski\_65:  
(Start: 45 @41388 has 72 MA's), (55, 41418), (72, 41535), (75, 41550), (76, 41553),

Gene: LeeroyJ\_73 Start: 46660, Stop: 46331, Start Num: 36  
Candidate Starts for LeeroyJ\_73:  
(Start: 36 @46660 has 26 MA's),

Gene: Lennon\_84 Start: 59043, Stop: 59306, Start Num: 45  
Candidate Starts for Lennon\_84:

(Start: 34 @59010 has 5 MA's), (Start: 45 @59043 has 72 MA's), (60, 59106), (71, 59187),

Gene: Leonard\_86 Start: 58581, Stop: 58832, Start Num: 45

Candidate Starts for Leonard\_86:

(Start: 45 @58581 has 72 MA's), (60, 58644), (67, 58704), (68, 58710), (71, 58722), (73, 58725),

Gene: Lilmac1015\_74 Start: 45377, Stop: 45132, Start Num: 52

Candidate Starts for Lilmac1015\_74:

(28, 45521), (Start: 52 @45377 has 3 MA's),

Gene: LittleFortune\_68 Start: 41679, Stop: 41972, Start Num: 45

Candidate Starts for LittleFortune\_68:

(Start: 45 @41679 has 72 MA's), (62, 41757), (72, 41820), (75, 41835), (76, 41838),

Gene: Love\_90 Start: 58854, Stop: 59117, Start Num: 45

Candidate Starts for Love\_90:

(Start: 34 @58821 has 5 MA's), (Start: 45 @58854 has 72 MA's), (60, 58917), (71, 58998),

Gene: Martha\_72 Start: 46927, Stop: 46595, Start Num: 36

Candidate Starts for Martha\_72:

(Start: 36 @46927 has 26 MA's), (Start: 51 @46906 has 2 MA's), (60, 46858), (85, 46663),

Gene: McKinley\_87 Start: 57834, Stop: 58097, Start Num: 45

Candidate Starts for McKinley\_87:

(Start: 34 @57801 has 5 MA's), (Start: 45 @57834 has 72 MA's), (60, 57897), (71, 57978),

Gene: MelBins\_88 Start: 59070, Stop: 59321, Start Num: 45

Candidate Starts for MelBins\_88:

(10, 58767), (Start: 45 @59070 has 72 MA's), (60, 59133), (67, 59193), (71, 59211), (73, 59214),

Gene: MenE\_57 Start: 32665, Stop: 32940, Start Num: 44

Candidate Starts for MenE\_57:

(28, 32530), (Start: 44 @32665 has 7 MA's), (Start: 46 @32674 has 1 MA's), (59, 32731), (63, 32755), (65, 32761), (78, 32854),

Gene: Metamorphoo\_69 Start: 42657, Stop: 42950, Start Num: 45

Candidate Starts for Metamorphoo\_69:

(Start: 45 @42657 has 72 MA's), (62, 42735), (72, 42798), (76, 42816),

Gene: MoontowerMania\_85 Start: 58915, Stop: 59211, Start Num: 34

Candidate Starts for MoontowerMania\_85:

(Start: 34 @58915 has 5 MA's), (Start: 45 @58948 has 72 MA's), (60, 59011), (71, 59092),

Gene: Mufasa8\_98 Start: 57231, Stop: 56944, Start Num: 35

Candidate Starts for Mufasa8\_98:

(Start: 35 @57231 has 1 MA's), (37, 57222), (49, 57186), (56, 57171), (73, 57057), (76, 57039),

Gene: Mutzi\_85 Start: 56931, Stop: 56680, Start Num: 48

Candidate Starts for Mutzi\_85:

(6, 57288), (9, 57261), (15, 57162), (17, 57138), (18, 57135), (27, 57072), (39, 56958), (Start: 48 @56931 has 9 MA's), (Start: 53 @56922 has 1 MA's), (57, 56904), (66, 56847), (77, 56772), (81, 56724),

Gene: NathanVaag\_68 Start: 45795, Stop: 45487, Start Num: 36  
Candidate Starts for NathanVaag\_68:  
(Start: 36 @45795 has 26 MA's), (55, 45756), (60, 45720), (80, 45582),

Gene: Natkenzie\_88 Start: 58873, Stop: 59145, Start Num: 43  
Candidate Starts for Natkenzie\_88:  
(16, 58672), (19, 58681), (21, 58693), (22, 58699), (Start: 43 @58873 has 6 MA's), (60, 58942), (71, 59020),

Gene: NoodlelyBoi\_67 Start: 42162, Stop: 42455, Start Num: 45  
Candidate Starts for NoodlelyBoi\_67:  
(33, 42120), (Start: 45 @42162 has 72 MA's), (56, 42189), (62, 42240), (72, 42303), (76, 42321),

Gene: Nordenberg\_83 Start: 56540, Stop: 56839, Start Num: 34  
Candidate Starts for Nordenberg\_83:  
(Start: 34 @56540 has 5 MA's), (Start: 45 @56573 has 72 MA's), (60, 56636), (71, 56717), (83, 56819),

Gene: Nubi\_89 Start: 56334, Stop: 56083, Start Num: 48  
Candidate Starts for Nubi\_89:  
(7, 56661), (8, 56646), (14, 56568), (27, 56475), (39, 56361), (Start: 48 @56334 has 9 MA's), (Start: 53 @56325 has 1 MA's), (57, 56307), (66, 56250), (77, 56175), (81, 56127),

Gene: Onika\_65 Start: 41397, Stop: 41696, Start Num: 45  
Candidate Starts for Onika\_65:  
(Start: 45 @41397 has 72 MA's), (55, 41427), (72, 41544), (75, 41559), (76, 41562),

Gene: Paries\_88 Start: 59125, Stop: 59388, Start Num: 45  
Candidate Starts for Paries\_88:  
(Start: 34 @59092 has 5 MA's), (Start: 45 @59125 has 72 MA's), (60, 59188), (71, 59269),

Gene: Paschalis\_66 Start: 41416, Stop: 41715, Start Num: 45  
Candidate Starts for Paschalis\_66:  
(Start: 45 @41416 has 72 MA's), (55, 41446), (72, 41563), (75, 41578), (76, 41581),

Gene: Phauci\_78 Start: 55646, Stop: 55897, Start Num: 45  
Candidate Starts for Phauci\_78:  
(13, 55400), (Start: 45 @55646 has 72 MA's), (60, 55709), (67, 55769), (68, 55775), (71, 55787), (73, 55790),

Gene: Phinally\_86 Start: 58578, Stop: 58829, Start Num: 45  
Candidate Starts for Phinally\_86:  
(Start: 45 @58578 has 72 MA's), (60, 58641), (67, 58701), (68, 58707), (71, 58719), (73, 58722),

Gene: Phonegingi\_52 Start: 32447, Stop: 32722, Start Num: 44  
Candidate Starts for Phonegingi\_52:  
(1, 31964), (2, 31991), (28, 32312), (Start: 44 @32447 has 7 MA's), (Start: 46 @32456 has 1 MA's), (59, 32513), (63, 32537), (65, 32543),

Gene: Phorgeous\_66 Start: 41205, Stop: 41498, Start Num: 45  
Candidate Starts for Phorgeous\_66:  
(37, 41181), (Start: 45 @41205 has 72 MA's), (62, 41283), (72, 41346), (75, 41361), (76, 41364),



Gene: Phrancesco\_66 Start: 41528, Stop: 41821, Start Num: 45  
Candidate Starts for Phrancesco\_66:  
(37, 41504), (Start: 45 @41528 has 72 MA's), (62, 41606), (72, 41669), (75, 41684), (76, 41687),

Gene: Piccoletto\_69 Start: 45957, Stop: 45649, Start Num: 36  
Candidate Starts for Piccoletto\_69:  
(Start: 36 @45957 has 26 MA's), (55, 45918), (60, 45882), (80, 45744),

Gene: Pickles13\_51 Start: 32723, Stop: 32998, Start Num: 44  
Candidate Starts for Pickles13\_51:  
(Start: 44 @32723 has 7 MA's), (Start: 46 @32732 has 1 MA's), (59, 32789), (63, 32813), (65, 32819),  
(78, 32912),

Gene: PierreOrion\_66 Start: 41628, Stop: 41927, Start Num: 45  
Candidate Starts for PierreOrion\_66:  
(Start: 45 @41628 has 72 MA's), (55, 41658), (72, 41775), (75, 41790), (76, 41793),

Gene: PiperSansNom\_67 Start: 41707, Stop: 42006, Start Num: 45  
Candidate Starts for PiperSansNom\_67:  
(Start: 45 @41707 has 72 MA's), (55, 41737), (72, 41854), (75, 41869), (76, 41872),

Gene: Piperis\_67 Start: 41330, Stop: 41623, Start Num: 45  
Candidate Starts for Piperis\_67:  
(Start: 45 @41330 has 72 MA's), (62, 41408), (72, 41471), (75, 41486), (76, 41489),

Gene: Pippa\_73 Start: 46951, Stop: 46640, Start Num: 51  
Candidate Starts for Pippa\_73:  
(Start: 36 @46972 has 26 MA's), (Start: 51 @46951 has 2 MA's), (60, 46903),

Gene: Prairie\_70 Start: 44683, Stop: 44438, Start Num: 52  
Candidate Starts for Prairie\_70:  
(28, 44827), (Start: 52 @44683 has 3 MA's), (78, 44518),

Gene: Pulchra\_68 Start: 41726, Stop: 42019, Start Num: 45  
Candidate Starts for Pulchra\_68:  
(37, 41702), (Start: 45 @41726 has 72 MA's), (62, 41804), (72, 41867), (75, 41882), (76, 41885),

Gene: Quhwah\_70 Start: 42015, Stop: 42308, Start Num: 45  
Candidate Starts for Quhwah\_70:  
(Start: 45 @42015 has 72 MA's), (62, 42093), (72, 42156), (75, 42171), (76, 42174),

Gene: Ramiel05\_65 Start: 41388, Stop: 41687, Start Num: 45  
Candidate Starts for Ramiel05\_65:  
(Start: 45 @41388 has 72 MA's), (55, 41418), (72, 41535), (75, 41550), (76, 41553),

Gene: RiverRaider\_87 Start: 55943, Stop: 56194, Start Num: 45  
Candidate Starts for RiverRaider\_87:  
(31, 55889), (Start: 45 @55943 has 72 MA's), (54, 55964), (60, 56006), (68, 56072), (71, 56084),

Gene: RobsFeet\_70 Start: 42943, Stop: 43236, Start Num: 45  
Candidate Starts for RobsFeet\_70:  
(Start: 45 @42943 has 72 MA's), (62, 43021), (72, 43084), (76, 43102),

Gene: Rofo\_84 Start: 57573, Stop: 57836, Start Num: 45  
Candidate Starts for Rofo\_84:  
(31, 57522), (Start: 45 @57573 has 72 MA's), (60, 57636), (71, 57717),

Gene: Sampson\_90 Start: 59024, Stop: 59296, Start Num: 43  
Candidate Starts for Sampson\_90:  
(16, 58823), (19, 58832), (21, 58844), (22, 58850), (Start: 43 @59024 has 6 MA's), (60, 59093), (71, 59171),

Gene: Sanjuju\_82 Start: 57928, Stop: 58191, Start Num: 45  
Candidate Starts for Sanjuju\_82:  
(Start: 34 @57895 has 5 MA's), (Start: 45 @57928 has 72 MA's), (60, 57991), (71, 58072),

Gene: Savannah\_65 Start: 41445, Stop: 41738, Start Num: 45  
Candidate Starts for Savannah\_65:  
(Start: 45 @41445 has 72 MA's), (62, 41523), (72, 41586), (75, 41601), (76, 41604),

Gene: Scioto\_88 Start: 58874, Stop: 59146, Start Num: 43  
Candidate Starts for Scioto\_88:  
(16, 58673), (19, 58682), (21, 58694), (22, 58700), (Start: 43 @58874 has 6 MA's), (60, 58943), (71, 59021),

Gene: Scumberland\_68 Start: 41640, Stop: 41933, Start Num: 45  
Candidate Starts for Scumberland\_68:  
(Start: 45 @41640 has 72 MA's), (56, 41667), (62, 41718), (72, 41781), (75, 41796), (76, 41799),

Gene: Sedona\_82 Start: 58425, Stop: 58688, Start Num: 45  
Candidate Starts for Sedona\_82:  
(Start: 34 @58392 has 5 MA's), (Start: 45 @58425 has 72 MA's), (60, 58488), (71, 58569),

Gene: Selwyn23\_67 Start: 41557, Stop: 41850, Start Num: 45  
Candidate Starts for Selwyn23\_67:  
(37, 41533), (Start: 45 @41557 has 72 MA's), (62, 41635), (72, 41698), (75, 41713), (76, 41716),

Gene: Shade\_72 Start: 46747, Stop: 46415, Start Num: 36  
Candidate Starts for Shade\_72:  
(Start: 36 @46747 has 26 MA's), (Start: 51 @46726 has 2 MA's), (60, 46678),

Gene: Shivanishola\_86 Start: 56589, Stop: 56852, Start Num: 45  
Candidate Starts for Shivanishola\_86:  
(Start: 34 @56556 has 5 MA's), (Start: 45 @56589 has 72 MA's), (60, 56652), (71, 56733),

Gene: Shotgun\_66 Start: 41324, Stop: 41617, Start Num: 45  
Candidate Starts for Shotgun\_66:  
(37, 41300), (Start: 45 @41324 has 72 MA's), (62, 41402), (72, 41465), (75, 41480), (76, 41483),

Gene: Sicarius2\_74 Start: 44932, Stop: 44645, Start Num: 36  
Candidate Starts for Sicarius2\_74:  
(Start: 36 @44932 has 26 MA's), (58, 44884), (60, 44860), (88, 44653),

Gene: Sitar\_83 Start: 58447, Stop: 58710, Start Num: 45  
Candidate Starts for Sitar\_83:  
(Start: 34 @58414 has 5 MA's), (Start: 45 @58447 has 72 MA's), (60, 58510), (71, 58591),

Gene: Smarties\_76 Start: 43251, Stop: 43544, Start Num: 45  
Candidate Starts for Smarties\_76:  
(Start: 45 @43251 has 72 MA's), (62, 43329), (72, 43392), (76, 43410),

Gene: Sonali\_93 Start: 57959, Stop: 57690, Start Num: 40  
Candidate Starts for Sonali\_93:  
(Start: 40 @57959 has 1 MA's), (41, 57953), (Start: 45 @57947 has 72 MA's), (49, 57935), (56, 57920), (57, 57917), (61, 57884), (64, 57869),

Gene: Sonny\_72 Start: 46702, Stop: 46370, Start Num: 36  
Candidate Starts for Sonny\_72:  
(Start: 36 @46702 has 26 MA's), (Start: 51 @46681 has 2 MA's), (60, 46633),

Gene: StevieBAY\_73 Start: 46953, Stop: 46624, Start Num: 36  
Candidate Starts for StevieBAY\_73:  
(Start: 36 @46953 has 26 MA's),

Gene: Stultus\_79 Start: 56719, Stop: 56982, Start Num: 45  
Candidate Starts for Stultus\_79:  
(Start: 34 @56686 has 5 MA's), (Start: 45 @56719 has 72 MA's), (60, 56782), (71, 56863),

Gene: TaeYoung\_73 Start: 46899, Stop: 46567, Start Num: 36  
Candidate Starts for TaeYoung\_73:  
(Start: 36 @46899 has 26 MA's), (Start: 51 @46878 has 2 MA's), (60, 46830), (85, 46635),

Gene: Tangent\_87 Start: 57279, Stop: 57545, Start Num: 45  
Candidate Starts for Tangent\_87:  
(Start: 34 @57246 has 5 MA's), (Start: 45 @57279 has 72 MA's), (60, 57342), (71, 57423), (83, 57525),

Gene: Tardus\_90 Start: 59420, Stop: 59689, Start Num: 43  
Candidate Starts for Tardus\_90:  
(Start: 43 @59420 has 6 MA's), (60, 59489), (71, 59567),

Gene: Teamocil\_70 Start: 41573, Stop: 41866, Start Num: 45  
Candidate Starts for Teamocil\_70:  
(29, 41480), (Start: 45 @41573 has 72 MA's), (62, 41651), (72, 41714), (76, 41732),

Gene: Thing3\_85 Start: 58100, Stop: 58363, Start Num: 45  
Candidate Starts for Thing3\_85:  
(31, 58049), (Start: 45 @58100 has 72 MA's), (60, 58163), (71, 58244),

Gene: Timinator\_73 Start: 46773, Stop: 46444, Start Num: 36  
Candidate Starts for Timinator\_73:  
(Start: 36 @46773 has 26 MA's),

Gene: Tyrumbra\_65 Start: 42225, Stop: 42518, Start Num: 45  
Candidate Starts for Tyrumbra\_65:  
(Start: 45 @42225 has 72 MA's), (62, 42303), (72, 42366), (76, 42384),

Gene: Verity\_87 Start: 60121, Stop: 60393, Start Num: 43  
Candidate Starts for Verity\_87:

(32, 60076), (Start: 43 @60121 has 6 MA's), (49, 60139), (60, 60190), (71, 60268), (79, 60316),

Gene: Vibaki\_78 Start: 47924, Stop: 47616, Start Num: 36

Candidate Starts for Vibaki\_78:

(Start: 36 @47924 has 26 MA's), (69, 47783), (75, 47753), (86, 47654), (89, 47639),

Gene: Vivi2\_88 Start: 58335, Stop: 58601, Start Num: 45

Candidate Starts for Vivi2\_88:

(Start: 34 @58302 has 5 MA's), (Start: 45 @58335 has 72 MA's), (60, 58398), (71, 58479), (83, 58581),

Gene: Warren\_52 Start: 32462, Stop: 32737, Start Num: 44

Candidate Starts for Warren\_52:

(Start: 44 @32462 has 7 MA's), (Start: 46 @32471 has 1 MA's), (59, 32528), (63, 32552), (65, 32558), (78, 32651),

Gene: Wyborn\_73 Start: 45667, Stop: 45380, Start Num: 36

Candidate Starts for Wyborn\_73:

(Start: 36 @45667 has 26 MA's), (58, 45619), (60, 45595), (88, 45388),

Gene: Yeti\_66 Start: 41362, Stop: 41655, Start Num: 45

Candidate Starts for Yeti\_66:

(Start: 45 @41362 has 72 MA's), (62, 41440), (72, 41503), (75, 41518), (76, 41521),

Gene: YungMoney\_85 Start: 57771, Stop: 57520, Start Num: 48

Candidate Starts for YungMoney\_85:

(6, 58128), (9, 58101), (15, 58002), (17, 57978), (18, 57975), (27, 57912), (39, 57798), (Start: 48 @57771 has 9 MA's), (Start: 53 @57762 has 1 MA's), (57, 57744), (66, 57687), (77, 57612), (81, 57564),

Gene: Zartrosa\_74 Start: 46999, Stop: 46667, Start Num: 36

Candidate Starts for Zartrosa\_74:

(Start: 36 @46999 has 26 MA's), (Start: 51 @46978 has 2 MA's), (60, 46930),

Gene: Zipp\_88 Start: 60092, Stop: 60364, Start Num: 43

Candidate Starts for Zipp\_88:

(32, 60047), (Start: 43 @60092 has 6 MA's), (49, 60110), (60, 60161), (71, 60239), (79, 60287),