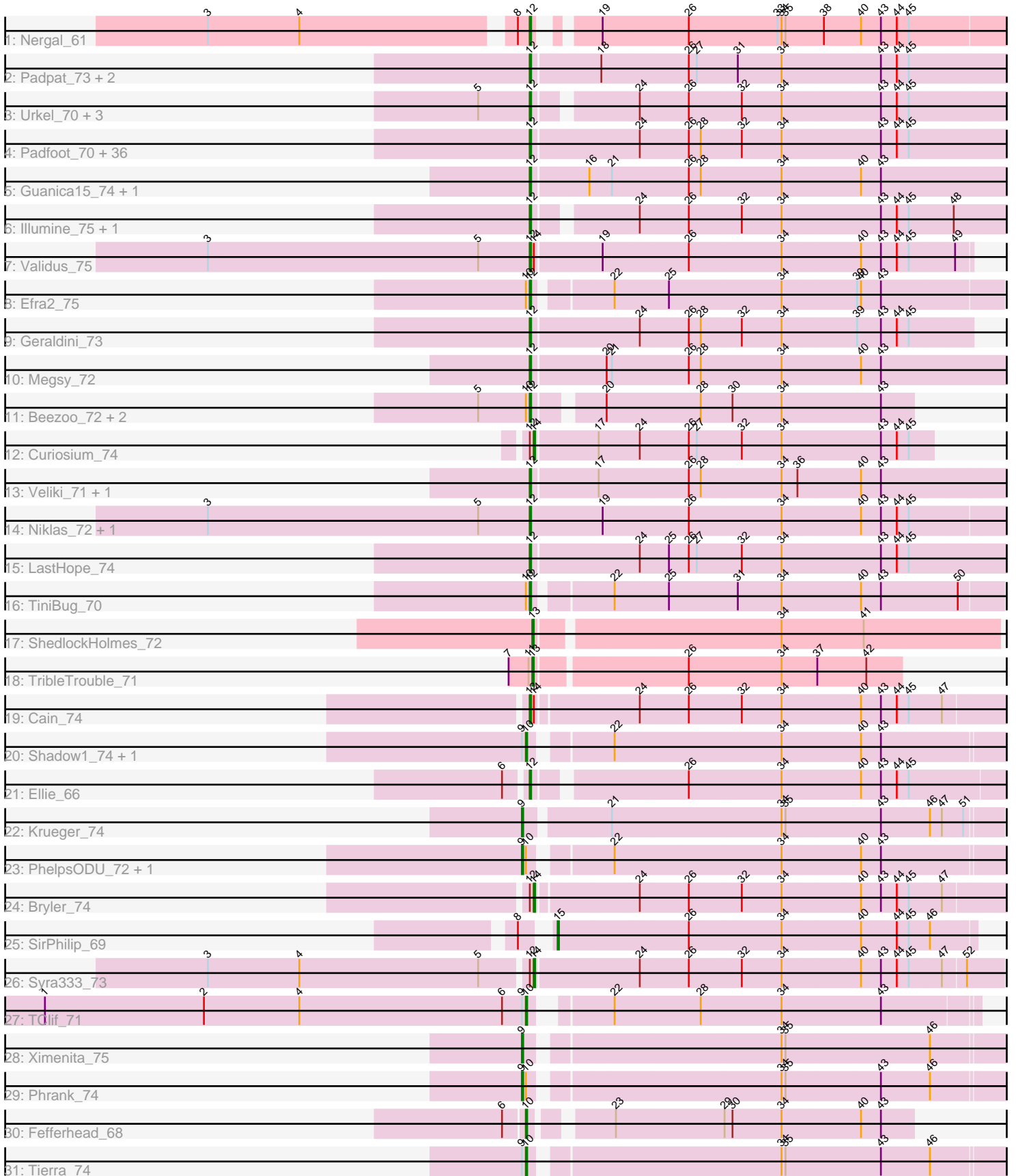


Pham 192523



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 192523 Report

This analysis was run 11/02/24 on database version 579.

Pham number 192523 has 80 members, 0 are drafts.

Phages represented in each track:

- Track 1 : Nergal\_61
- Track 2 : Padpat\_73, Ageofdapage\_73, Emerson\_72
- Track 3 : Urkel\_70, Bella96\_70, SamuelLPlaqson\_70, DrHayes\_70
- Track 4 : Padfoot\_70, Twitch\_70, Durfee\_70, Boiii\_70, Llorens\_70, ActinUp\_70, BaghaKamala\_69, Jarvi\_70, Topper\_70, Peel\_70, Joy99\_70, Apocalypse\_72, Dalmuri\_70, MeaningOfLife\_71, BGIluviae\_70, ShiaSurprise\_71, Atiba\_71, Spock\_70, Zavala\_73, CheetoDust\_69, Asayake\_70, BEEST\_70, Tiri\_70, Capricorn\_70, Jeckyll\_70, Rosmarinus\_70, Belladonna\_70, Jayhawk\_72, TruffulaTree\_71, Rapunzel97\_72, Slimphazie\_71, Lunahalos\_70, CaseJules\_72, Zabiza\_65, Inky\_70, Blizzard\_70, Tachez\_70
- Track 5 : Guanica15\_74, Yunkel11\_74
- Track 6 : Illumine\_75, Devera\_77
- Track 7 : Validus\_75
- Track 8 : Efra2\_75
- Track 9 : Geraldini\_73
- Track 10 : Megsy\_72
- Track 11 : Beezoo\_72, YoureAdopted\_69, Pokerus\_70
- Track 12 : Curiosium\_74
- Track 13 : Veliki\_71, Ramen\_71
- Track 14 : Niklas\_72, Peanam\_72
- Track 15 : LastHope\_74
- Track 16 : TiniBug\_70
- Track 17 : ShedlockHolmes\_72
- Track 18 : TribbleTrouble\_71
- Track 19 : Cain\_74
- Track 20 : Shadow1\_74, Sunflower1121\_75
- Track 21 : Ellie\_66
- Track 22 : Krueger\_74
- Track 23 : PhelpsODU\_72, Unicorn\_72
- Track 24 : Bryler\_74
- Track 25 : SirPhilip\_69
- Track 26 : Syra333\_73
- Track 27 : TClif\_71
- Track 28 : Ximenita\_75
- Track 29 : Phrank\_74
- Track 30 : Fefferhead\_68
- Track 31 : Tierra\_74

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

The start number called the most often in the published annotations is 12, it was called in 64 of the 80 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_70, Ageofdapage\_73, Apocalypse\_72, Asayake\_70, Atiba\_71, BEEST\_70, BGlluviae\_70, BaghaKamala\_69, Beezoo\_72, Bella96\_70, Belladonna\_70, Blizzard\_70, Boiiii\_70, Cain\_74, Capricorn\_70, CaseJules\_72, CheetoDust\_69, Dalmuri\_70, Devera\_77, DrHayes\_70, Durfee\_70, Efra2\_75, Ellie\_66, Emerson\_72, Geraldini\_73, Guanica15\_74, Illumine\_75, Inky\_70, Jarvi\_70, Jayhawk\_72, Jeckyll\_70, Joy99\_70, LastHope\_74, Llorens\_70, Lunahalos\_70, MeaningOfLife\_71, Megsy\_72, Nergal\_61, Niklas\_72, Padfoot\_70, Padpat\_73, Peanam\_72, Peel\_70, Pokerus\_70, Ramen\_71, Rapunzel97\_72, Rosmarinus\_70, SamuelLPlaqson\_70, ShiaSurprise\_71, Slimphazie\_71, Spock\_70, Tachez\_70, TiniBug\_70, Tiri\_70, Topper\_70, TruffulaTree\_71, Twitch\_70, Urkel\_70, Validus\_75, Veliki\_71, YoureAdopted\_69, Yunkel11\_74, Zabiza\_65, Zavala\_73,

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

- Bryler\_74, Curiosium\_74, Syra333\_73,

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

- Fefferhead\_68, Krueger\_74, PhelpsODU\_72, Phrank\_74, Shadow1\_74, ShedlockHolmes\_72, SirPhilip\_69, Sunflower1121\_75, TClif\_71, Tierra\_74, TribbleTrouble\_71, Unicorn\_72, Ximenita\_75,

### **Summary by start number:**

Start 9:

- Found in 9 of 80 ( 11.2% ) of genes in pham
- Manual Annotations of this start: 5 of 80
- Called 55.6% of time when present
- Phage (with cluster) where this start called: Krueger\_74 (K6), PhelpsODU\_72 (K6), Phrank\_74 (K6), Unicorn\_72 (K6), Ximenita\_75 (K6),

Start 10:

- Found in 13 of 80 ( 16.2% ) of genes in pham
- Manual Annotations of this start: 5 of 80
- Called 38.5% of time when present
- Phage (with cluster) where this start called: Fefferhead\_68 (K6), Shadow1\_74 (K6), Sunflower1121\_75 (K6), TClif\_71 (K6), Tierra\_74 (K6),

Start 12:

- Found in 67 of 80 ( 83.8% ) of genes in pham
- Manual Annotations of this start: 64 of 80
- Called 95.5% of time when present
- Phage (with cluster) where this start called: ActinUp\_70 (K1), Ageofdapage\_73 (K1), Apocalypse\_72 (K1), Asayake\_70 (K1), Atiba\_71 (K1), BEEST\_70 (K1), BGlluviae\_70 (K1), BaghaKamala\_69 (K1), Beezoo\_72 (K1), Bella96\_70 (K1),

Belladonna\_70 (K1), Blizzard\_70 (K1), Boiii\_70 (K1), Cain\_74 (K6), Capricorn\_70 (K1), CaseJules\_72 (K1), CheetoDust\_69 (K1), Dalmuri\_70 (K1), Devera\_77 (K1), DrHayes\_70 (K1), Durfee\_70 (K1), Efra2\_75 (K1), Ellie\_66 (K6), Emerson\_72 (K1), Geraldini\_73 (K1), Guanica15\_74 (K1), Illumine\_75 (K1), Inky\_70 (K1), Jarvi\_70 (K1), Jayhawk\_72 (K1), Jeckyll\_70 (K1), Joy99\_70 (K1), LastHope\_74 (K1), Llorens\_70 (K1), Lunahalos\_70 (K1), MeaningOfLife\_71 (K1), Megsy\_72 (K1), Nergal\_61 (AG), Niklas\_72 (K1), Padfoot\_70 (K1), Padpat\_73 (K1), Peanam\_72 (K1), Peel\_70 (K1), Pokerus\_70 (K1), Ramen\_71 (K1), Rapunzel97\_72 (K1), Rosmarinus\_70 (K1), SamuelLPlaqson\_70 (K1), ShiaSurprise\_71 (K1), Slimphazie\_71 (K1), Spock\_70 (K1), Tachez\_70 (K1), TiniBug\_70 (K1), Tiri\_70 (K1), Topper\_70 (K1), TruffulaTree\_71 (K1), Twitch\_70 (K1), Urkel\_70 (K1), Validus\_75 (K1), Veliki\_71 (K1), YoureAdopted\_69 (K1), Yunkel11\_74 (K1), Zabiza\_65 (K1), Zavala\_73 (K1),

Start 13:

- Found in 2 of 80 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 2 of 80
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ShedlockHolmes\_72 (K3),  
TribelTrouble\_71 (K3),

Start 14:

- Found in 5 of 80 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 3 of 80
- Called 60.0% of time when present
- Phage (with cluster) where this start called: Bryler\_74 (K6), Curiosium\_74 (K1),  
Syra333\_73 (K6),

Start 15:

- Found in 1 of 80 ( 1.2% ) of genes in pham
- Manual Annotations of this start: 1 of 80
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SirPhilip\_69 (K6),

### **Summary by clusters:**

There are 4 clusters represented in this pham: K3, K1, K6, AG,

Info for manual annotations of cluster AG:

- Start number 12 was manually annotated 1 time for cluster AG.

Info for manual annotations of cluster K1:

- Start number 12 was manually annotated 61 times for cluster K1.
- Start number 14 was manually annotated 1 time for cluster K1.

Info for manual annotations of cluster K3:

- Start number 13 was manually annotated 2 times for cluster K3.

Info for manual annotations of cluster K6:

- Start number 9 was manually annotated 5 times for cluster K6.
- Start number 10 was manually annotated 5 times for cluster K6.
- Start number 12 was manually annotated 2 times for cluster K6.
- Start number 14 was manually annotated 2 times for cluster K6.
- Start number 15 was manually annotated 1 time for cluster K6.

**Gene Information:**

Gene: ActinUp\_70 Start: 46973, Stop: 47329, Start Num: 12

Candidate Starts for ActinUp\_70:

(Start: 12 @46973 has 64 MA's), (24, 47051), (26, 47087), (28, 47096), (32, 47126), (34, 47156), (43, 47228), (44, 47240), (45, 47249),

Gene: Ageofdapage\_73 Start: 48168, Stop: 48524, Start Num: 12

Candidate Starts for Ageofdapage\_73:

(Start: 12 @48168 has 64 MA's), (18, 48219), (26, 48282), (27, 48288), (31, 48318), (34, 48351), (43, 48423), (44, 48435), (45, 48444),

Gene: Apocalypse\_72 Start: 47693, Stop: 48049, Start Num: 12

Candidate Starts for Apocalypse\_72:

(Start: 12 @47693 has 64 MA's), (24, 47771), (26, 47807), (28, 47816), (32, 47846), (34, 47876), (43, 47948), (44, 47960), (45, 47969),

Gene: Asayake\_70 Start: 47325, Stop: 47681, Start Num: 12

Candidate Starts for Asayake\_70:

(Start: 12 @47325 has 64 MA's), (24, 47403), (26, 47439), (28, 47448), (32, 47478), (34, 47508), (43, 47580), (44, 47592), (45, 47601),

Gene: Atiba\_71 Start: 46973, Stop: 47329, Start Num: 12

Candidate Starts for Atiba\_71:

(Start: 12 @46973 has 64 MA's), (24, 47051), (26, 47087), (28, 47096), (32, 47126), (34, 47156), (43, 47228), (44, 47240), (45, 47249),

Gene: BEEST\_70 Start: 47325, Stop: 47681, Start Num: 12

Candidate Starts for BEEST\_70:

(Start: 12 @47325 has 64 MA's), (24, 47403), (26, 47439), (28, 47448), (32, 47478), (34, 47508), (43, 47580), (44, 47592), (45, 47601),

Gene: BGlluviae\_70 Start: 47128, Stop: 47484, Start Num: 12

Candidate Starts for BGlluviae\_70:

(Start: 12 @47128 has 64 MA's), (24, 47206), (26, 47242), (28, 47251), (32, 47281), (34, 47311), (43, 47383), (44, 47395), (45, 47404),

Gene: BaghaKamala\_69 Start: 46559, Stop: 46915, Start Num: 12

Candidate Starts for BaghaKamala\_69:

(Start: 12 @46559 has 64 MA's), (24, 46637), (26, 46673), (28, 46682), (32, 46712), (34, 46742), (43, 46814), (44, 46826), (45, 46835),

Gene: Beezoo\_72 Start: 47929, Stop: 48195, Start Num: 12

Candidate Starts for Beezoo\_72:

(5, 47890), (Start: 10 @47926 has 5 MA's), (Start: 12 @47929 has 64 MA's), (20, 47971), (28, 48040), (30, 48064), (34, 48100), (43, 48172),

Gene: Bella96\_70 Start: 47481, Stop: 47825, Start Num: 12

Candidate Starts for Bella96\_70:

(5, 47442), (Start: 12 @47481 has 64 MA's), (24, 47547), (26, 47583), (32, 47622), (34, 47652), (43, 47724), (44, 47736), (45, 47745),

Gene: Belladonna\_70 Start: 47128, Stop: 47484, Start Num: 12

Candidate Starts for Belladonna\_70:

(Start: 12 @47128 has 64 MA's), (24, 47206), (26, 47242), (28, 47251), (32, 47281), (34, 47311), (43, 47383), (44, 47395), (45, 47404),

Gene: Blizzard\_70 Start: 47325, Stop: 47681, Start Num: 12

Candidate Starts for Blizzard\_70:

(Start: 12 @47325 has 64 MA's), (24, 47403), (26, 47439), (28, 47448), (32, 47478), (34, 47508), (43, 47580), (44, 47592), (45, 47601),

Gene: Boiiii\_70 Start: 47327, Stop: 47683, Start Num: 12

Candidate Starts for Boiiii\_70:

(Start: 12 @47327 has 64 MA's), (24, 47405), (26, 47441), (28, 47450), (32, 47480), (34, 47510), (43, 47582), (44, 47594), (45, 47603),

Gene: Bryler\_74 Start: 46880, Stop: 47230, Start Num: 14

Candidate Starts for Bryler\_74:

(Start: 12 @46877 has 64 MA's), (Start: 14 @46880 has 3 MA's), (24, 46952), (26, 46988), (32, 47027), (34, 47057), (40, 47114), (43, 47129), (44, 47141), (45, 47150), (47, 47174),

Gene: Cain\_74 Start: 46865, Stop: 47218, Start Num: 12

Candidate Starts for Cain\_74:

(Start: 12 @46865 has 64 MA's), (Start: 14 @46868 has 3 MA's), (24, 46940), (26, 46976), (32, 47015), (34, 47045), (40, 47102), (43, 47117), (44, 47129), (45, 47138), (47, 47162),

Gene: Capricorn\_70 Start: 47128, Stop: 47460, Start Num: 12

Candidate Starts for Capricorn\_70:

(Start: 12 @47128 has 64 MA's), (24, 47206), (26, 47242), (28, 47251), (32, 47281), (34, 47311), (43, 47383), (44, 47395), (45, 47404),

Gene: CaseJules\_72 Start: 47325, Stop: 47681, Start Num: 12

Candidate Starts for CaseJules\_72:

(Start: 12 @47325 has 64 MA's), (24, 47403), (26, 47439), (28, 47448), (32, 47478), (34, 47508), (43, 47580), (44, 47592), (45, 47601),

Gene: CheetoDust\_69 Start: 46606, Stop: 46962, Start Num: 12

Candidate Starts for CheetoDust\_69:

(Start: 12 @46606 has 64 MA's), (24, 46684), (26, 46720), (28, 46729), (32, 46759), (34, 46789), (43, 46861), (44, 46873), (45, 46882),

Gene: Curiosium\_74 Start: 46635, Stop: 46925, Start Num: 14

Candidate Starts for Curiosium\_74:

(Start: 12 @46632 has 64 MA's), (Start: 14 @46635 has 3 MA's), (17, 46680), (24, 46710), (26, 46746), (27, 46752), (32, 46785), (34, 46815), (43, 46887), (44, 46899), (45, 46908),

Gene: Dalmuri\_70 Start: 47128, Stop: 47484, Start Num: 12

Candidate Starts for Dalmuri\_70:

(Start: 12 @47128 has 64 MA's), (24, 47206), (26, 47242), (28, 47251), (32, 47281), (34, 47311), (43, 47383), (44, 47395), (45, 47404),

Gene: Devera\_77 Start: 48731, Stop: 49075, Start Num: 12

Candidate Starts for Devera\_77:

(Start: 12 @48731 has 64 MA's), (24, 48797), (26, 48833), (32, 48872), (34, 48902), (43, 48974), (44, 48986), (45, 48995), (48, 49028),

Gene: DrHayes\_70 Start: 47635, Stop: 47979, Start Num: 12

Candidate Starts for DrHayes\_70:

(5, 47596), (Start: 12 @47635 has 64 MA's), (24, 47701), (26, 47737), (32, 47776), (34, 47806), (43, 47878), (44, 47890), (45, 47899),

Gene: Durfee\_70 Start: 47325, Stop: 47681, Start Num: 12

Candidate Starts for Durfee\_70:

(Start: 12 @47325 has 64 MA's), (24, 47403), (26, 47439), (28, 47448), (32, 47478), (34, 47508), (43, 47580), (44, 47592), (45, 47601),

Gene: Efra2\_75 Start: 47471, Stop: 47806, Start Num: 12

Candidate Starts for Efra2\_75:

(Start: 10 @47468 has 5 MA's), (Start: 12 @47471 has 64 MA's), (22, 47522), (25, 47561), (34, 47645), (39, 47699), (40, 47702), (43, 47717),

Gene: Ellie\_66 Start: 46854, Stop: 47198, Start Num: 12

Candidate Starts for Ellie\_66:

(6, 46839), (Start: 12 @46854 has 64 MA's), (26, 46956), (34, 47025), (40, 47082), (43, 47097), (44, 47109), (45, 47118),

Gene: Emerson\_72 Start: 47445, Stop: 47801, Start Num: 12

Candidate Starts for Emerson\_72:

(Start: 12 @47445 has 64 MA's), (18, 47496), (26, 47559), (27, 47565), (31, 47595), (34, 47628), (43, 47700), (44, 47712), (45, 47721),

Gene: Fefferhead\_68 Start: 46763, Stop: 47029, Start Num: 10

Candidate Starts for Fefferhead\_68:

(6, 46748), (Start: 10 @46763 has 5 MA's), (23, 46811), (29, 46892), (30, 46898), (34, 46934), (40, 46991), (43, 47006),

Gene: Geraldini\_73 Start: 48007, Stop: 48327, Start Num: 12

Candidate Starts for Geraldini\_73:

(Start: 12 @48007 has 64 MA's), (24, 48085), (26, 48121), (28, 48130), (32, 48160), (34, 48190), (39, 48244), (43, 48262), (44, 48274), (45, 48283),

Gene: Guanica15\_74 Start: 47209, Stop: 47565, Start Num: 12

Candidate Starts for Guanica15\_74:

(Start: 12 @47209 has 64 MA's), (16, 47251), (21, 47266), (26, 47323), (28, 47332), (34, 47392), (40, 47449), (43, 47464),

Gene: Illumine\_75 Start: 48733, Stop: 49077, Start Num: 12

Candidate Starts for Illumine\_75:

(Start: 12 @48733 has 64 MA's), (24, 48799), (26, 48835), (32, 48874), (34, 48904), (43, 48976), (44, 48988), (45, 48997), (48, 49030),

Gene: Inky\_70 Start: 47128, Stop: 47484, Start Num: 12

Candidate Starts for Inky\_70:

(Start: 12 @47128 has 64 MA's), (24, 47206), (26, 47242), (28, 47251), (32, 47281), (34, 47311), (43, 47383), (44, 47395), (45, 47404),

Gene: Jarvi\_70 Start: 47128, Stop: 47484, Start Num: 12

Candidate Starts for Jarvi\_70:

(Start: 12 @47128 has 64 MA's), (24, 47206), (26, 47242), (28, 47251), (32, 47281), (34, 47311), (43, 47383), (44, 47395), (45, 47404),

Gene: Jayhawk\_72 Start: 47471, Stop: 47827, Start Num: 12

Candidate Starts for Jayhawk\_72:

(Start: 12 @47471 has 64 MA's), (24, 47549), (26, 47585), (28, 47594), (32, 47624), (34, 47654), (43, 47726), (44, 47738), (45, 47747),

Gene: Jeckyll\_70 Start: 47128, Stop: 47484, Start Num: 12

Candidate Starts for Jeckyll\_70:

(Start: 12 @47128 has 64 MA's), (24, 47206), (26, 47242), (28, 47251), (32, 47281), (34, 47311), (43, 47383), (44, 47395), (45, 47404),

Gene: Joy99\_70 Start: 47057, Stop: 47413, Start Num: 12

Candidate Starts for Joy99\_70:

(Start: 12 @47057 has 64 MA's), (24, 47135), (26, 47171), (28, 47180), (32, 47210), (34, 47240), (43, 47312), (44, 47324), (45, 47333),

Gene: Krueger\_74 Start: 47000, Stop: 47341, Start Num: 9

Candidate Starts for Krueger\_74:

(Start: 9 @47000 has 5 MA's), (21, 47057), (34, 47183), (35, 47186), (43, 47255), (46, 47291), (47, 47300), (51, 47315),

Gene: LastHope\_74 Start: 46319, Stop: 46675, Start Num: 12

Candidate Starts for LastHope\_74:

(Start: 12 @46319 has 64 MA's), (24, 46397), (25, 46418), (26, 46433), (27, 46439), (32, 46472), (34, 46502), (43, 46574), (44, 46586), (45, 46595),

Gene: Llorens\_70 Start: 47128, Stop: 47484, Start Num: 12

Candidate Starts for Llorens\_70:

(Start: 12 @47128 has 64 MA's), (24, 47206), (26, 47242), (28, 47251), (32, 47281), (34, 47311), (43, 47383), (44, 47395), (45, 47404),

Gene: Lunahalos\_70 Start: 47128, Stop: 47484, Start Num: 12

Candidate Starts for Lunahalos\_70:

(Start: 12 @47128 has 64 MA's), (24, 47206), (26, 47242), (28, 47251), (32, 47281), (34, 47311), (43, 47383), (44, 47395), (45, 47404),

Gene: MeaningOfLife\_71 Start: 47880, Stop: 48236, Start Num: 12

Candidate Starts for MeaningOfLife\_71:

(Start: 12 @47880 has 64 MA's), (24, 47958), (26, 47994), (28, 48003), (32, 48033), (34, 48063), (43, 48135), (44, 48147), (45, 48156),

Gene: Megsy\_72 Start: 47305, Stop: 47661, Start Num: 12

Candidate Starts for Megsy\_72:

(Start: 12 @47305 has 64 MA's), (20, 47359), (21, 47362), (26, 47419), (28, 47428), (34, 47488), (40, 47545), (43, 47560),



Gene: Nergal\_61 Start: 43426, Stop: 43770, Start Num: 12

Candidate Starts for Nergal\_61:

(3, 43198), (4, 43267), (8, 43417), (Start: 12 @43426 has 64 MA's), (19, 43456), (26, 43519), (33, 43585), (34, 43588), (35, 43591), (38, 43618), (40, 43645), (43, 43660), (44, 43672), (45, 43681),

Gene: Niklas\_72 Start: 47424, Stop: 47780, Start Num: 12

Candidate Starts for Niklas\_72:

(3, 47181), (5, 47385), (Start: 12 @47424 has 64 MA's), (19, 47478), (26, 47541), (34, 47610), (40, 47667), (43, 47682), (44, 47694), (45, 47703),

Gene: Padfoot\_70 Start: 47325, Stop: 47681, Start Num: 12

Candidate Starts for Padfoot\_70:

(Start: 12 @47325 has 64 MA's), (24, 47403), (26, 47439), (28, 47448), (32, 47478), (34, 47508), (43, 47580), (44, 47592), (45, 47601),

Gene: Padpat\_73 Start: 47445, Stop: 47801, Start Num: 12

Candidate Starts for Padpat\_73:

(Start: 12 @47445 has 64 MA's), (18, 47496), (26, 47559), (27, 47565), (31, 47595), (34, 47628), (43, 47700), (44, 47712), (45, 47721),

Gene: Peanam\_72 Start: 47381, Stop: 47683, Start Num: 12

Candidate Starts for Peanam\_72:

(3, 47138), (5, 47342), (Start: 12 @47381 has 64 MA's), (19, 47435), (26, 47498), (34, 47567), (40, 47624), (43, 47639), (44, 47651), (45, 47660),

Gene: Peel\_70 Start: 47130, Stop: 47486, Start Num: 12

Candidate Starts for Peel\_70:

(Start: 12 @47130 has 64 MA's), (24, 47208), (26, 47244), (28, 47253), (32, 47283), (34, 47313), (43, 47385), (44, 47397), (45, 47406),

Gene: PhelpsODU\_72 Start: 46792, Stop: 47142, Start Num: 9

Candidate Starts for PhelpsODU\_72:

(Start: 9 @46792 has 5 MA's), (Start: 10 @46795 has 5 MA's), (22, 46846), (34, 46969), (40, 47026), (43, 47041),

Gene: Phrank\_74 Start: 46855, Stop: 47205, Start Num: 9

Candidate Starts for Phrank\_74:

(Start: 9 @46855 has 5 MA's), (Start: 10 @46858 has 5 MA's), (34, 47032), (35, 47035), (43, 47104), (46, 47140),

Gene: Pokerus\_70 Start: 47476, Stop: 47742, Start Num: 12

Candidate Starts for Pokerus\_70:

(5, 47437), (Start: 10 @47473 has 5 MA's), (Start: 12 @47476 has 64 MA's), (20, 47518), (28, 47587), (30, 47611), (34, 47647), (43, 47719),

Gene: Ramen\_71 Start: 46975, Stop: 47331, Start Num: 12

Candidate Starts for Ramen\_71:

(Start: 12 @46975 has 64 MA's), (17, 47023), (26, 47089), (28, 47098), (34, 47158), (36, 47170), (40, 47215), (43, 47230),

Gene: Rapunzel97\_72 Start: 47426, Stop: 47782, Start Num: 12

Candidate Starts for Rapunzel97\_72:

(Start: 12 @47426 has 64 MA's), (24, 47504), (26, 47540), (28, 47549), (32, 47579), (34, 47609), (43, 47681), (44, 47693), (45, 47702),

Gene: Rosmarinus\_70 Start: 47116, Stop: 47472, Start Num: 12

Candidate Starts for Rosmarinus\_70:

(Start: 12 @47116 has 64 MA's), (24, 47194), (26, 47230), (28, 47239), (32, 47269), (34, 47299), (43, 47371), (44, 47383), (45, 47392),

Gene: SamuelLPlaqson\_70 Start: 47635, Stop: 47979, Start Num: 12

Candidate Starts for SamuelLPlaqson\_70:

(5, 47596), (Start: 12 @47635 has 64 MA's), (24, 47701), (26, 47737), (32, 47776), (34, 47806), (43, 47878), (44, 47890), (45, 47899),

Gene: Shadow1\_74 Start: 47155, Stop: 47502, Start Num: 10

Candidate Starts for Shadow1\_74:

(Start: 9 @47152 has 5 MA's), (Start: 10 @47155 has 5 MA's), (22, 47206), (34, 47329), (40, 47386), (43, 47401),

Gene: ShedlockHolmes\_72 Start: 47403, Stop: 47735, Start Num: 13

Candidate Starts for ShedlockHolmes\_72:

(Start: 13 @47403 has 2 MA's), (34, 47574), (41, 47634),

Gene: ShiaSurprise\_71 Start: 47325, Stop: 47681, Start Num: 12

Candidate Starts for ShiaSurprise\_71:

(Start: 12 @47325 has 64 MA's), (24, 47403), (26, 47439), (28, 47448), (32, 47478), (34, 47508), (43, 47580), (44, 47592), (45, 47601),

Gene: SirPhilip\_69 Start: 47533, Stop: 47838, Start Num: 15

Candidate Starts for SirPhilip\_69:

(8, 47518), (Start: 15 @47533 has 1 MA's), (26, 47629), (34, 47698), (40, 47755), (44, 47782), (45, 47791), (46, 47806),

Gene: Slimphazie\_71 Start: 47426, Stop: 47782, Start Num: 12

Candidate Starts for Slimphazie\_71:

(Start: 12 @47426 has 64 MA's), (24, 47504), (26, 47540), (28, 47549), (32, 47579), (34, 47609), (43, 47681), (44, 47693), (45, 47702),

Gene: Spock\_70 Start: 47129, Stop: 47485, Start Num: 12

Candidate Starts for Spock\_70:

(Start: 12 @47129 has 64 MA's), (24, 47207), (26, 47243), (28, 47252), (32, 47282), (34, 47312), (43, 47384), (44, 47396), (45, 47405),

Gene: Sunflower1121\_75 Start: 47301, Stop: 47648, Start Num: 10

Candidate Starts for Sunflower1121\_75:

(Start: 9 @47298 has 5 MA's), (Start: 10 @47301 has 5 MA's), (22, 47352), (34, 47475), (40, 47532), (43, 47547),

Gene: Syra333\_73 Start: 47015, Stop: 47353, Start Num: 14

Candidate Starts for Syra333\_73:

(3, 46775), (4, 46844), (5, 46979), (Start: 12 @47012 has 64 MA's), (Start: 14 @47015 has 3 MA's), (24, 47090), (26, 47126), (32, 47165), (34, 47195), (40, 47252), (43, 47267), (44, 47279), (45, 47288), (47, 47312), (52, 47327),

Gene: TClif\_71 Start: 46972, Stop: 47280, Start Num: 10

Candidate Starts for TClif\_71:

(1, 46609), (2, 46729), (4, 46801), (6, 46954), (Start: 9 @46969 has 5 MA's), (Start: 10 @46972 has 5 MA's), (22, 47017), (28, 47080), (34, 47140), (43, 47212),

Gene: Tachez\_70 Start: 46973, Stop: 47329, Start Num: 12

Candidate Starts for Tachez\_70:

(Start: 12 @46973 has 64 MA's), (24, 47051), (26, 47087), (28, 47096), (32, 47126), (34, 47156), (43, 47228), (44, 47240), (45, 47249),

Gene: Tierra\_74 Start: 47669, Stop: 48016, Start Num: 10

Candidate Starts for Tierra\_74:

(Start: 9 @47666 has 5 MA's), (Start: 10 @47669 has 5 MA's), (34, 47843), (35, 47846), (43, 47915), (46, 47951),

Gene: TiniBug\_70 Start: 47631, Stop: 47966, Start Num: 12

Candidate Starts for TiniBug\_70:

(Start: 10 @47628 has 5 MA's), (Start: 12 @47631 has 64 MA's), (22, 47682), (25, 47721), (31, 47772), (34, 47805), (40, 47862), (43, 47877), (50, 47934),

Gene: Tiri\_70 Start: 47029, Stop: 47385, Start Num: 12

Candidate Starts for Tiri\_70:

(Start: 12 @47029 has 64 MA's), (24, 47107), (26, 47143), (28, 47152), (32, 47182), (34, 47212), (43, 47284), (44, 47296), (45, 47305),

Gene: Topper\_70 Start: 47128, Stop: 47484, Start Num: 12

Candidate Starts for Topper\_70:

(Start: 12 @47128 has 64 MA's), (24, 47206), (26, 47242), (28, 47251), (32, 47281), (34, 47311), (43, 47383), (44, 47395), (45, 47404),

Gene: TribelTrouble\_71 Start: 47859, Stop: 48122, Start Num: 13

Candidate Starts for TribelTrouble\_71:

(7, 47841), (11, 47856), (Start: 13 @47859 has 2 MA's), (26, 47964), (34, 48033), (37, 48060), (42, 48096),

Gene: TruffulaTree\_71 Start: 47422, Stop: 47778, Start Num: 12

Candidate Starts for TruffulaTree\_71:

(Start: 12 @47422 has 64 MA's), (24, 47500), (26, 47536), (28, 47545), (32, 47575), (34, 47605), (43, 47677), (44, 47689), (45, 47698),

Gene: Twitch\_70 Start: 47130, Stop: 47486, Start Num: 12

Candidate Starts for Twitch\_70:

(Start: 12 @47130 has 64 MA's), (24, 47208), (26, 47244), (28, 47253), (32, 47283), (34, 47313), (43, 47385), (44, 47397), (45, 47406),

Gene: Unicorn\_72 Start: 46792, Stop: 47142, Start Num: 9

Candidate Starts for Unicorn\_72:

(Start: 9 @46792 has 5 MA's), (Start: 10 @46795 has 5 MA's), (22, 46846), (34, 46969), (40, 47026), (43, 47041),

Gene: Urkel\_70 Start: 47635, Stop: 47979, Start Num: 12

Candidate Starts for Urkel\_70:

(5, 47596), (Start: 12 @47635 has 64 MA's), (24, 47701), (26, 47737), (32, 47776), (34, 47806), (43, 47878), (44, 47890), (45, 47899),

Gene: Validus\_75 Start: 47975, Stop: 48295, Start Num: 12

Candidate Starts for Validus\_75:

(3, 47732), (5, 47936), (Start: 12 @47975 has 64 MA's), (Start: 14 @47978 has 3 MA's), (19, 48026), (26, 48089), (34, 48158), (40, 48215), (43, 48230), (44, 48242), (45, 48251), (49, 48284),

Gene: Veliki\_71 Start: 47162, Stop: 47518, Start Num: 12

Candidate Starts for Veliki\_71:

(Start: 12 @47162 has 64 MA's), (17, 47210), (26, 47276), (28, 47285), (34, 47345), (36, 47357), (40, 47402), (43, 47417),

Gene: Ximenita\_75 Start: 47341, Stop: 47691, Start Num: 9

Candidate Starts for Ximenita\_75:

(Start: 9 @47341 has 5 MA's), (34, 47518), (35, 47521), (46, 47626),

Gene: YoureAdopted\_69 Start: 47314, Stop: 47580, Start Num: 12

Candidate Starts for YoureAdopted\_69:

(5, 47275), (Start: 10 @47311 has 5 MA's), (Start: 12 @47314 has 64 MA's), (20, 47356), (28, 47425), (30, 47449), (34, 47485), (43, 47557),

Gene: Yunkel11\_74 Start: 47214, Stop: 47570, Start Num: 12

Candidate Starts for Yunkel11\_74:

(Start: 12 @47214 has 64 MA's), (16, 47256), (21, 47271), (26, 47328), (28, 47337), (34, 47397), (40, 47454), (43, 47469),

Gene: Zabiza\_65 Start: 43278, Stop: 43634, Start Num: 12

Candidate Starts for Zabiza\_65:

(Start: 12 @43278 has 64 MA's), (24, 43356), (26, 43392), (28, 43401), (32, 43431), (34, 43461), (43, 43533), (44, 43545), (45, 43554),

Gene: Zavala\_73 Start: 47700, Stop: 48056, Start Num: 12

Candidate Starts for Zavala\_73:

(Start: 12 @47700 has 64 MA's), (24, 47778), (26, 47814), (28, 47823), (32, 47853), (34, 47883), (43, 47955), (44, 47967), (45, 47976),