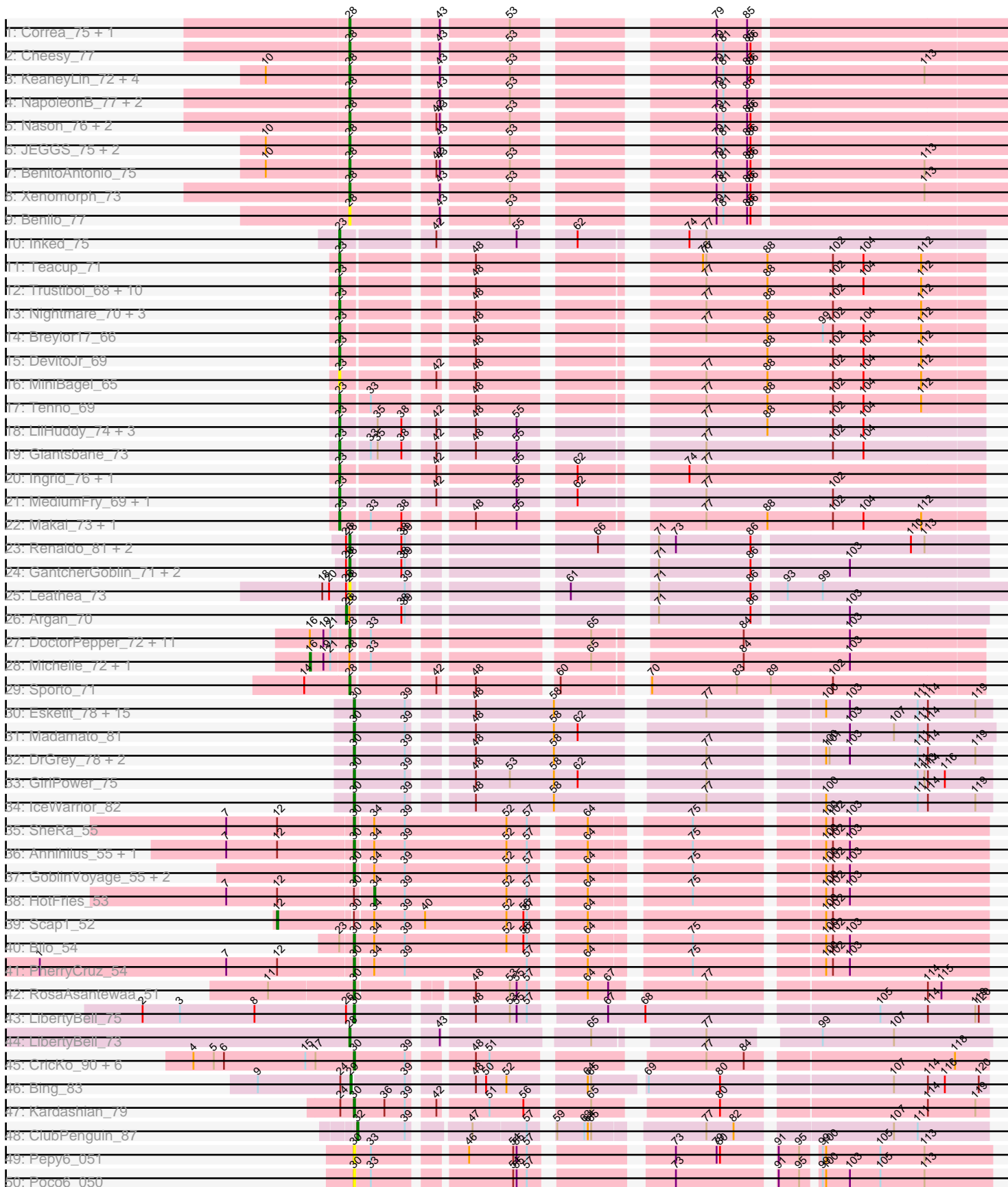
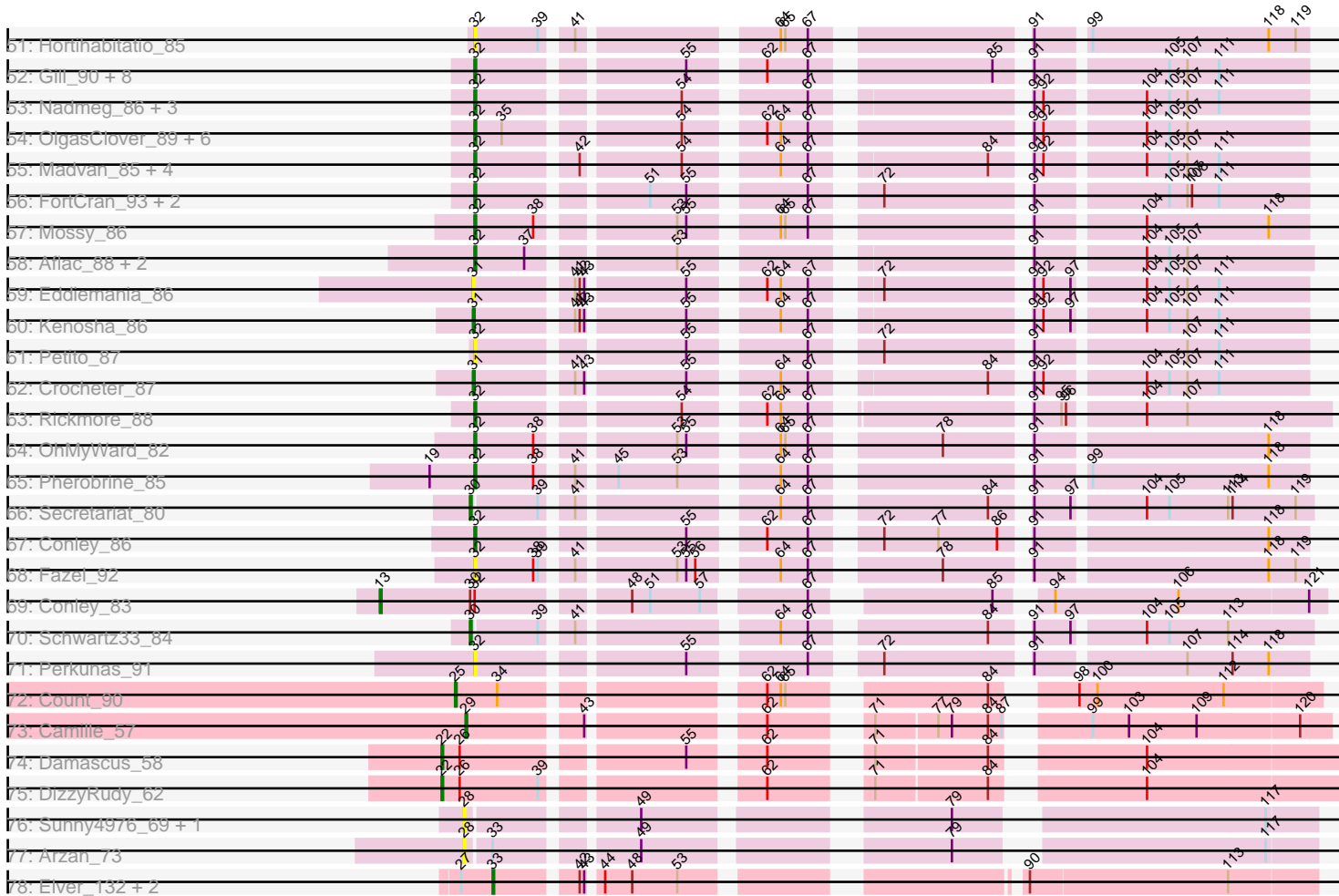


Pham 157626



Pham 157626



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 157626 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157626 has 178 members, 33 are drafts.

Phages represented in each track:

- Track 1 : Correa\_75, Tribby\_80
- Track 2 : Cheesy\_77
- Track 3 : KeaneyLin\_72, Kardesai\_76, Mooshroom\_76, Circum\_78, GoCrazy\_73
- Track 4 : NapoleonB\_77, Dynamite\_76, Hankly\_76
- Track 5 : Nason\_76, Elsa\_76, Arcadia\_76
- Track 6 : JEGGS\_75, Heisenberger\_75, Mudcat\_72
- Track 7 : BenitoAntonio\_75
- Track 8 : Xenomorph\_73
- Track 9 : Benllo\_77
- Track 10 : Inked\_75
- Track 11 : Teacup\_71
- Track 12 : Trustiboi\_68, Gordon\_67, Tatanka\_63, Darby\_67, Brunswick\_67, ElephantMan\_70, CastorTray\_73, Niktson\_70, ScienceWizSam\_71, Issa\_68, CapnMurica\_67
- Track 13 : Nightmare\_70, Nivinsha\_72, AreFloNak\_73, Synopsis\_66
- Track 14 : Breylor17\_66
- Track 15 : DevitoJr\_69
- Track 16 : MiniBagel\_65
- Track 17 : Tenno\_69
- Track 18 : LilHuddy\_74, Shepard\_74, Phaby\_74, Tokki\_79
- Track 19 : Giantsbane\_73
- Track 20 : Ingrid\_76, Loretta\_72
- Track 21 : MediumFry\_69, Caterpillar\_69
- Track 22 : Makai\_73, Truckee\_71
- Track 23 : Renaldo\_81, BarbieDoll\_77, Lewando\_77
- Track 24 : GantcherGoblin\_71, Uzumaki\_70, Zeina\_76
- Track 25 : Leathea\_73
- Track 26 : Argan\_70
- Track 27 : DoctorPepper\_72, Raunak\_73, MrAaronian\_72, Djungelskog\_71, Linda\_72, Sloopyjoe\_72, StarLord\_72, ProfFrink\_73, Salk\_72, Egad\_72, BronxBay\_72, Shiba\_71
- Track 28 : Michelle\_72, Stayer\_72
- Track 29 : Sporto\_71
- Track 30 : Esketit\_78, TaidaOne\_82, Spectropatronm\_81, Rima\_83, OlympicHelado\_84, Jaylociraptor\_82, Meibysrarus\_80, TieDye\_78, FidgetOrca\_84, Soshi\_81, TonyStarch\_81, Hoshi\_83, Maya\_82, Namu\_84, CherryBlossom\_82, Indigenous\_84

- Track 31 : Madamato\_81
- Track 32 : DrGrey\_78, FrodoSwaggins\_80, Popy\_80
- Track 33 : GirlPower\_75
- Track 34 : IceWarrior\_82
- Track 35 : SheRa\_55
- Track 36 : Annihilus\_55, Moozy\_54
- Track 37 : GoblinVoyage\_55, RavenPuff\_55, Doxi13\_56
- Track 38 : HotFries\_53
- Track 39 : Scap1\_52
- Track 40 : Bilo\_54
- Track 41 : PherryCruz\_54
- Track 42 : RosaAsantewaa\_51
- Track 43 : LibertyBell\_75
- Track 44 : LibertyBell\_73
- Track 45 : CricKo\_90, Regigigas\_90, FromIndy\_88, SendItCS\_82, Miek\_84, Thiqqums\_90, Rainydai\_87
- Track 46 : Bing\_83
- Track 47 : Kardashian\_79
- Track 48 : ClubPenguin\_87
- Track 49 : Pepy6\_051
- Track 50 : Poco6\_050
- Track 51 : Hortihabitatio\_85
- Track 52 : Gill\_90, Magel\_91, Roney\_88, Capybara\_90, Kerry\_89, Tanis\_89, Odesza\_88, Captrips\_88, Gravy\_89
- Track 53 : Nadmeg\_86, Vardy\_86, Burley\_86, Runhaar\_85
- Track 54 : OlgasClover\_89, Figliar\_86, Duffington\_88, Nithya\_87, Chikenjars\_88, EndAve\_89, AlainaMarie\_88
- Track 55 : Madvan\_85, Untouchable\_89, Zeph\_92, Hydrus\_87, Phepper\_88
- Track 56 : FortCran\_93, Avazak\_89, Artorias\_88
- Track 57 : Mossy\_86
- Track 58 : Aflac\_88, Jodelie19\_87, TenaciousP\_94
- Track 59 : Eddiemania\_86
- Track 60 : Kenosha\_86
- Track 61 : Petite\_87
- Track 62 : Crocheter\_87
- Track 63 : Rickmore\_88
- Track 64 : OhMyWard\_82
- Track 65 : Pherobrine\_85
- Track 66 : Secretariat\_80
- Track 67 : Conley\_86
- Track 68 : Fazel\_92
- Track 69 : Conley\_83
- Track 70 : Schwartz33\_84
- Track 71 : Perkunas\_91
- Track 72 : Count\_90
- Track 73 : Camille\_57
- Track 74 : Damascus\_58
- Track 75 : DizzyRudy\_62
- Track 76 : Sunny4976\_69, Jazzy4900\_70
- Track 77 : Arzan\_73
- Track 78 : Elver\_132, Paella\_134, Qui\_134

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

The start number called the most often in the published annotations is 30, it was called in 40 of the 145 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Annihilus\_55, Bilo\_54, CherryBlossom\_82, CricKo\_90, Doxi13\_56, DrGrey\_78, Esketit\_78, FidgetOrca\_84, FrodoSwaggins\_80, FromIndy\_88, GirlPower\_75, GoblinVoyage\_55, Hoshi\_83, IceWarrior\_82, Indigenous\_84, Jaylociraptor\_82, Kardashian\_79, LibertyBell\_75, Madamato\_81, Maya\_82, Meibysrarus\_80, Miek\_84, Moozy\_54, Namu\_84, OlympicHelado\_84, Pepy6\_051, PherryCruz\_54, Poco6\_050, Popy\_80, Rainydai\_87, RavenPuff\_55, Regigigas\_90, Rima\_83, RosaAsantewaa\_51, Schwartz33\_84, Secretariat\_80, SendItCS\_82, SheRa\_55, Soshi\_81, Spectropatronm\_81, TaidaOne\_82, Thiqqums\_90, TieDye\_78, TonyStarch\_81,

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

- Conley\_83, HotFries\_53, Scap1\_52,

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

- Aflac\_88, AlainaMarie\_88, Arcadia\_76, AreFloNak\_73, Argan\_70, Artorias\_88, Arzan\_73, Avazak\_89, BarbieDoll\_77, BenitoAntonio\_75, Benllo\_77, Bing\_83, Breylor17\_66, BronxBay\_72, Brunswick\_67, Burley\_86, Camille\_57, CapnMurica\_67, Captrips\_88, Capybara\_90, CastorTray\_73, Caterpillar\_69, Cheesy\_77, Chikenjars\_88, Circum\_78, ClubPenguin\_87, Conley\_86, Correa\_75, Count\_90, Crocheter\_87, Damascus\_58, Darby\_67, DevitoJr\_69, DizzyRudy\_62, Djungelskog\_71, DoctorPepper\_72, Duffington\_88, Dynamite\_76, Eddiemania\_86, Egad\_72, ElephantMan\_70, Elsa\_76, Elver\_132, EndAve\_89, Fazel\_92, Figliar\_86, FortCran\_93, GantcherGoblin\_71, Giantsbane\_73, Gill\_90, GoCrazy\_73, Gordon\_67, Gravy\_89, Hankly\_76, Heisenberger\_75, Hortihabitatio\_85, Hydrus\_87, Ingrid\_76, Inked\_75, Issa\_68, JEGGS\_75, Jazzy4900\_70, Jodelie19\_87, Kardesai\_76, KeaneyLin\_72, Kenosha\_86, Kerry\_89, Leathea\_73, Lewando\_77, LibertyBell\_73, LilHuddy\_74, Linda\_72, Loretta\_72, Madvan\_85, Magel\_91, Makai\_73, MediumFry\_69, Michelle\_72, MiniBagel\_65, Mooshroom\_76, Mossy\_86, MrAaronian\_72, Mudcat\_72, Nadmeg\_86, NapoleonB\_77, Nason\_76, Nightmare\_70, Niktson\_70, Nithya\_87, Nivinsha\_72, Odesza\_88, OhMyWard\_82, OlgasClover\_89, Paella\_134, Perkunas\_91, Petite\_87, Phaby\_74, Phepper\_88, Pherobrine\_85, ProfFrink\_73, Qui\_134, Raunak\_73, Renaldo\_81, Rickmore\_88, Roney\_88, Runhaar\_85, Salk\_72, ScienceWizSam\_71, Shepard\_74, Shiba\_71, Sloopyjoe\_72, Sporto\_71, StarLord\_72, Stayer\_72, Sunny4976\_69, Synepsis\_66, Tanis\_89, Tatanka\_63, Teacup\_71, TenaciousP\_94, Tenno\_69, Tokki\_79, Tribby\_80, Truckee\_71, Trustiboi\_68, Untouchable\_89, Uzumaki\_70, Vardy\_86, Xenomorph\_73, Zeina\_76, Zeph\_92,

## **Summary by start number:**

Start 12:

- Found in 6 of 178 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 1 of 145
- Called 16.7% of time when present
- Phage (with cluster) where this start called: Scap1\_52 (BI2),

Start 13:

- Found in 1 of 178 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 145
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Conley\_83 (DJ),

#### Start 16:

- Found in 14 of 178 ( 7.9% ) of genes in pham
- Manual Annotations of this start: 2 of 145
- Called 14.3% of time when present
- Phage (with cluster) where this start called: Michelle\_72 (AW), Stayer\_72 (AW),

#### Start 22:

- Found in 2 of 178 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 145
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Damascus\_58 (EL), DizzyRudy\_62 (EL),

#### Start 23:

- Found in 33 of 178 ( 18.5% ) of genes in pham
- Manual Annotations of this start: 26 of 145
- Called 97.0% of time when present
- Phage (with cluster) where this start called: AreFloNak\_73 (AU1), Breylor17\_66 (AU1), Brunswick\_67 (AU1), CapnMurica\_67 (AU1), CastorTray\_73 (AU1), Caterpillar\_69 (AU4), Darby\_67 (AU1), DevitoJr\_69 (AU1), ElephantMan\_70 (AU1), Giantsbane\_73 (AU2), Gordon\_67 (AU1), Ingrid\_76 (AU3), Inked\_75 (AU), Issa\_68 (AU1), LilHuddy\_74 (AU2), Loretta\_72 (AU3), Makai\_73 (AU5), MediumFry\_69 (AU4), MiniBagel\_65 (AU1), Nightmare\_70 (AU1), Niktson\_70 (AU1), Nivinsha\_72 (AU1), Phaby\_74 (AU2), ScienceWizSam\_71 (AU1), Shepard\_74 (AU2), Synopsis\_66 (AU1), Tatanka\_63 (AU1), Teacup\_71 (AU1), Tenno\_69 (AU1), Tokki\_79 (AU2), Truckee\_71 (AU5), Trustiboi\_68 (AU1),

#### Start 25:

- Found in 1 of 178 ( 0.6% ) of genes in pham
- Manual Annotations of this start: 1 of 145
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Count\_90 (EL),

#### Start 26:

- Found in 11 of 178 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 1 of 145
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Argan\_70 (AU6),

#### Start 28:

- Found in 47 of 178 ( 26.4% ) of genes in pham
- Manual Annotations of this start: 33 of 145
- Called 93.6% of time when present
- Phage (with cluster) where this start called: Arcadia\_76 (AM), Arzan\_73 (FI), BarbieDoll\_77 (AU6), BenitoAntonio\_75 (AM), Benllo\_77 (AM), BronxBay\_72 (AW), Cheesy\_77 (AM), Circum\_78 (AM), Correa\_75 (AM), Djungelskog\_71 (AW), DoctorPepper\_72 (AW), Dynamite\_76 (AM), Egad\_72 (AW), Elsa\_76 (AM), GantcherGoblin\_71 (AU6), GoCrazy\_73 (AM), Hankly\_76 (AM), Heisenberger\_75 (AM), JEGGS\_75 (AM), Jazzy4900\_70 (FI), Kardesai\_76 (AM), KeaneyLin\_72 (AM),

Leathea\_73 (AU6), Lewando\_77 (AU6), LibertyBell\_73 (BI3), Linda\_72 (AW), Mooshroom\_76 (AM), MrAaronian\_72 (AW), Mudcat\_72 (AM), NapoleonB\_77 (AM), Nason\_76 (AM), ProfFrink\_73 (AW), Raunak\_73 (AW), Renaldo\_81 (AU6), Salk\_72 (AW), Shiba\_71 (AW), Sloopyjoe\_72 (AW), Sporto\_71 (AW), StarLord\_72 (AW), Sunny4976\_69 (FI), Tribby\_80 (AM), Uzumaki\_70 (AU6), Xenomorph\_73 (AM), Zeina\_76 (AU6),

Start 29:

- Found in 2 of 178 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 145
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Bing\_83 (BI5), Camille\_57 (EL),

Start 30:

- Found in 47 of 178 ( 26.4% ) of genes in pham
- Manual Annotations of this start: 40 of 145
- Called 93.6% of time when present
- Phage (with cluster) where this start called: Annihilus\_55 (BI2), Bilo\_54 (BI2), CherryBlossom\_82 (BI1), CricKo\_90 (BI4), Doxi13\_56 (BI2), DrGrey\_78 (BI1), Esketit\_78 (BI1), FidgetOrca\_84 (BI1), FrodoSwaggins\_80 (BI1), FromIndy\_88 (BI4), GirlPower\_75 (BI1), GoblinVoyage\_55 (BI2), Hoshi\_83 (BI1), IceWarrior\_82 (BI1), Indigenous\_84 (BI1), Jaylociraptor\_82 (BI1), Kardashian\_79 (BI6), LibertyBell\_75 (BI3), Madamato\_81 (BI1), Maya\_82 (BI1), Meibysrarus\_80 (BI1), Miek\_84 (BI4), Moozy\_54 (BI2), Namu\_84 (BI1), OlympicHelado\_84 (BI1), Pepy6\_051 (CC), PherryCruz\_54 (BI2), Poco6\_050 (CC), Popy\_80 (BI1), Rainydai\_87 (BI4), RavenPuff\_55 (BI2), Regigigas\_90 (BI4), Rima\_83 (BI1), RosaAsantewaa\_51 (BI2), Schwartz33\_84 (DJ), Secretariat\_80 (DJ), SendItCS\_82 (BI4), SheRa\_55 (BI2), Soshi\_81 (BI1), Spectropatronm\_81 (BI1), TaidaOne\_82 (BI1), Thiqqums\_90 (BI4), TieDye\_78 (BI1), TonyStarch\_81 (BI1),

Start 31:

- Found in 3 of 178 ( 1.7% ) of genes in pham
- Manual Annotations of this start: 2 of 145
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Crocheter\_87 (DJ), Eddiemania\_86 (DJ), Kenosha\_86 (DJ),

Start 32:

- Found in 42 of 178 ( 23.6% ) of genes in pham
- Manual Annotations of this start: 31 of 145
- Called 97.6% of time when present
- Phage (with cluster) where this start called: Aflac\_88 (DJ), AlainaMarie\_88 (DJ), Artorias\_88 (DJ), Avazak\_89 (DJ), Burley\_86 (DJ), Captrips\_88 (DJ), Capybara\_90 (DJ), Chikenjars\_88 (DJ), ClubPenguin\_87 (BI7), Conley\_86 (DJ), Duffington\_88 (DJ), EndAve\_89 (DJ), Fazel\_92 (DJ), Figliar\_86 (DJ), FortCran\_93 (DJ), Gill\_90 (DJ), Gravy\_89 (DJ), Hortihabitatio\_85 (DJ), Hydrus\_87 (DJ), Jodelie19\_87 (DJ), Kerry\_89 (DJ), Madvan\_85 (DJ), Magel\_91 (DJ), Mossy\_86 (DJ), Nadmeg\_86 (DJ), Nithya\_87 (DJ), Odesza\_88 (DJ), OhMyWard\_82 (DJ), OlgasClover\_89 (DJ), Perkunas\_91 (DJ), Petite\_87 (DJ), Phepper\_88 (DJ), Pherobrine\_85 (DJ), Rickmore\_88 (DJ), Roney\_88 (DJ), Runhaar\_85 (DJ), Tanis\_89 (DJ), TenaciousP\_94 (DJ), Untouchable\_89 (DJ), Vardy\_86 (DJ), Zeph\_92 (DJ),

Start 33:

- Found in 24 of 178 ( 13.5% ) of genes in pham
- Manual Annotations of this start: 2 of 145
- Called 12.5% of time when present
- Phage (with cluster) where this start called: Elver\_132 (FK), Paella\_134 (FK), Qui\_134 (FK),

Start 34:

- Found in 11 of 178 ( 6.2% ) of genes in pham
- Manual Annotations of this start: 1 of 145
- Called 9.1% of time when present
- Phage (with cluster) where this start called: HotFries\_53 (BI2),

### **Summary by clusters:**

There are 21 clusters represented in this pham: EL, BI5, DJ, AU5, CC, AM, AU1, AU3, AU2, AU, AU4, AW, AU6, BI6, FI, BI4, FK, BI2, BI3, BI7, BI1,

Info for manual annotations of cluster AM:

- Start number 28 was manually annotated 18 times for cluster AM.

Info for manual annotations of cluster AU:

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

Info for manual annotations of cluster AU1:

- Start number 23 was manually annotated 15 times for cluster AU1.

Info for manual annotations of cluster AU2:

- Start number 23 was manually annotated 4 times for cluster AU2.

Info for manual annotations of cluster AU3:

- Start number 23 was manually annotated 2 times for cluster AU3.

Info for manual annotations of cluster AU4:

- Start number 23 was manually annotated 2 times for cluster AU4.

Info for manual annotations of cluster AU5:

- Start number 23 was manually annotated 2 times for cluster AU5.

Info for manual annotations of cluster AU6:

- Start number 26 was manually annotated 1 time for cluster AU6.
- Start number 28 was manually annotated 4 times for cluster AU6.

Info for manual annotations of cluster AW:

- Start number 16 was manually annotated 2 times for cluster AW.
- Start number 28 was manually annotated 10 times for cluster AW.

Info for manual annotations of cluster BI1:

- Start number 30 was manually annotated 22 times for cluster BI1.

Info for manual annotations of cluster BI2:

- Start number 12 was manually annotated 1 time for cluster BI2.
- Start number 30 was manually annotated 9 times for cluster BI2.
- Start number 34 was manually annotated 1 time for cluster BI2.



Info for manual annotations of cluster BI3:

- Start number 28 was manually annotated 1 time for cluster BI3.
- Start number 30 was manually annotated 1 time for cluster BI3.

Info for manual annotations of cluster BI4:

- Start number 30 was manually annotated 5 times for cluster BI4.

Info for manual annotations of cluster BI5:

- Start number 29 was manually annotated 1 time for cluster BI5.

Info for manual annotations of cluster BI6:

- Start number 30 was manually annotated 1 time for cluster BI6.

Info for manual annotations of cluster BI7:

- Start number 32 was manually annotated 1 time for cluster BI7.

Info for manual annotations of cluster DJ:

- Start number 13 was manually annotated 1 time for cluster DJ.
- Start number 30 was manually annotated 2 times for cluster DJ.
- Start number 31 was manually annotated 2 times for cluster DJ.
- Start number 32 was manually annotated 30 times for cluster DJ.

Info for manual annotations of cluster EL:

- Start number 22 was manually annotated 2 times for cluster EL.
- Start number 25 was manually annotated 1 time for cluster EL.
- Start number 29 was manually annotated 1 time for cluster EL.

Info for manual annotations of cluster FK:

- Start number 33 was manually annotated 2 times for cluster FK.

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

Gene: Aflac\_88 Start: 56715, Stop: 57197, Start Num: 32

Candidate Starts for Aflac\_88:

(Start: 32 @56715 has 31 MA's), (37, 56748), (53, 56832), (91, 57021), (104, 57087), (105, 57102), (107, 57114),

Gene: AlainaMarie\_88 Start: 56739, Stop: 57221, Start Num: 32

Candidate Starts for AlainaMarie\_88:

(Start: 32 @56739 has 31 MA's), (35, 56757), (54, 56859), (62, 56901), (64, 56910), (67, 56928), (91, 57048), (92, 57054), (104, 57114), (105, 57129), (107, 57141),

Gene: Annihilus\_55 Start: 38912, Stop: 39421, Start Num: 30

Candidate Starts for Annihilus\_55:

(7, 38804), (Start: 12 @38849 has 1 MA's), (Start: 30 @38912 has 40 MA's), (Start: 34 @38927 has 1 MA's), (39, 38954), (52, 39044), (57, 39062), (64, 39101), (75, 39176), (100, 39278), (102, 39284), (103, 39299),

Gene: Arcadia\_76 Start: 45700, Stop: 46212, Start Num: 28

Candidate Starts for Arcadia\_76:

(Start: 28 @45700 has 33 MA's), (42, 45766), (43, 45769), (53, 45823), (79, 45967), (81, 45973), (85, 45994), (86, 45997),

Gene: AreFloNak\_73 Start: 46808, Stop: 47311, Start Num: 23

Candidate Starts for AreFloNak\_73:

(Start: 23 @46808 has 26 MA's), (48, 46907), (77, 47069), (88, 47123), (102, 47180), (112, 47258),

Gene: Argan\_70 Start: 44513, Stop: 45007, Start Num: 26

Candidate Starts for Argan\_70:

(Start: 26 @44513 has 1 MA's), (Start: 28 @44516 has 33 MA's), (38, 44558), (39, 44561), (71, 44729), (86, 44810), (103, 44888),

Gene: Artorias\_88 Start: 55253, Stop: 55735, Start Num: 32

Candidate Starts for Artorias\_88:

(Start: 32 @55253 has 31 MA's), (51, 55352), (55, 55376), (67, 55442), (72, 55475), (91, 55562), (105, 55643), (107, 55655), (108, 55658), (111, 55676),

Gene: Arzan\_73 Start: 46217, Stop: 46693, Start Num: 28

Candidate Starts for Arzan\_73:

(Start: 28 @46217 has 33 MA's), (Start: 33 @46232 has 2 MA's), (49, 46313), (79, 46481), (117, 46661),

Gene: Avazak\_89 Start: 55682, Stop: 56164, Start Num: 32

Candidate Starts for Avazak\_89:

(Start: 32 @55682 has 31 MA's), (51, 55781), (55, 55805), (67, 55871), (72, 55904), (91, 55991), (105, 56072), (107, 56084), (108, 56087), (111, 56105),

Gene: BarbieDoll\_77 Start: 46222, Stop: 46713, Start Num: 28

Candidate Starts for BarbieDoll\_77:

(Start: 26 @46219 has 1 MA's), (Start: 28 @46222 has 33 MA's), (38, 46264), (39, 46267), (66, 46405), (71, 46435), (73, 46450), (86, 46516), (110, 46648), (113, 46660),

Gene: BenitoAntonio\_75 Start: 45340, Stop: 45852, Start Num: 28

Candidate Starts for BenitoAntonio\_75:

(10, 45268), (Start: 28 @45340 has 33 MA's), (42, 45406), (43, 45409), (53, 45463), (79, 45607), (81, 45613), (85, 45634), (86, 45637), (113, 45781),

Gene: Benllo\_77 Start: 46018, Stop: 46530, Start Num: 28

Candidate Starts for Benllo\_77:

(Start: 28 @46018 has 33 MA's), (43, 46087), (53, 46141), (79, 46285), (81, 46291), (85, 46312), (86, 46315),

Gene: Bilo\_54 Start: 39203, Stop: 39715, Start Num: 30

Candidate Starts for Bilo\_54:

(Start: 23 @39194 has 26 MA's), (Start: 30 @39203 has 40 MA's), (Start: 34 @39221 has 1 MA's), (39, 39248), (52, 39338), (56, 39353), (57, 39356), (64, 39395), (75, 39470), (100, 39572), (102, 39578), (103, 39593),

Gene: Bing\_83 Start: 51639, Stop: 52142, Start Num: 29

Candidate Starts for Bing\_83:

(9, 51558), (24, 51630), (Start: 29 @51639 has 2 MA's), (39, 51684), (48, 51729), (50, 51738), (52, 51756), (64, 51813), (65, 51816), (69, 51858), (80, 51921), (107, 52059), (114, 52089), (116, 52104), (120, 52134),

Gene: Breylor17\_66 Start: 47201, Stop: 47704, Start Num: 23

Candidate Starts for Breylor17\_66:

(Start: 23 @47201 has 26 MA's), (48, 47300), (77, 47462), (88, 47516), (99, 47564), (102, 47573), (104, 47600), (112, 47651),

Gene: BronxBay\_72 Start: 45205, Stop: 45702, Start Num: 28

Candidate Starts for BronxBay\_72:

(Start: 16 @45172 has 2 MA's), (19, 45184), (21, 45190), (Start: 28 @45205 has 33 MA's), (Start: 33 @45220 has 2 MA's), (65, 45385), (84, 45493), (103, 45586),

Gene: Brunswick\_67 Start: 46642, Stop: 47145, Start Num: 23

Candidate Starts for Brunswick\_67:

(Start: 23 @46642 has 26 MA's), (48, 46741), (77, 46903), (88, 46957), (102, 47014), (104, 47041), (112, 47092),

Gene: Burley\_86 Start: 55548, Stop: 56027, Start Num: 32

Candidate Starts for Burley\_86:

(Start: 32 @55548 has 31 MA's), (54, 55668), (67, 55737), (91, 55854), (92, 55860), (104, 55920), (105, 55935), (107, 55947), (111, 55968),

Gene: Camille\_57 Start: 40747, Stop: 41235, Start Num: 29

Candidate Starts for Camille\_57:

(Start: 29 @40747 has 2 MA's), (43, 40816), (62, 40915), (71, 40963), (77, 41002), (79, 41011), (84, 41035), (87, 41044), (99, 41080), (103, 41104), (109, 41149), (120, 41215),

Gene: CapnMurica\_67 Start: 47359, Stop: 47862, Start Num: 23

Candidate Starts for CapnMurica\_67:

(Start: 23 @47359 has 26 MA's), (48, 47458), (77, 47620), (88, 47674), (102, 47731), (104, 47758), (112, 47809),

Gene: Captrips\_88 Start: 55033, Stop: 55515, Start Num: 32

Candidate Starts for Captrips\_88:

(Start: 32 @55033 has 31 MA's), (55, 55156), (62, 55195), (67, 55222), (85, 55327), (91, 55342), (105, 55423), (107, 55435), (111, 55456),

Gene: Capybara\_90 Start: 55256, Stop: 55738, Start Num: 32

Candidate Starts for Capybara\_90:

(Start: 32 @55256 has 31 MA's), (55, 55379), (62, 55418), (67, 55445), (85, 55550), (91, 55565), (105, 55646), (107, 55658), (111, 55679),

Gene: CastorTray\_73 Start: 47393, Stop: 47896, Start Num: 23

Candidate Starts for CastorTray\_73:

(Start: 23 @47393 has 26 MA's), (48, 47492), (77, 47654), (88, 47708), (102, 47765), (104, 47792), (112, 47843),

Gene: Caterpillar\_69 Start: 46228, Stop: 46731, Start Num: 23

Candidate Starts for Caterpillar\_69:

(Start: 23 @46228 has 26 MA's), (42, 46300), (55, 46363), (62, 46402), (77, 46489), (102, 46600),

Gene: Cheesy\_77 Start: 45492, Stop: 46004, Start Num: 28

Candidate Starts for Cheesy\_77:

(Start: 28 @45492 has 33 MA's), (43, 45561), (53, 45615), (79, 45759), (81, 45765), (85, 45786), (86, 45789),

Gene: CherryBlossom\_82 Start: 50872, Stop: 51381, Start Num: 30

Candidate Starts for CherryBlossom\_82:

(Start: 30 @50872 has 40 MA's), (39, 50917), (48, 50962), (58, 51031), (77, 51145), (100, 51235), (103, 51256), (111, 51316), (114, 51325), (119, 51367),

Gene: Chikenjars\_88 Start: 56967, Stop: 57449, Start Num: 32

Candidate Starts for Chikenjars\_88:

(Start: 32 @56967 has 31 MA's), (35, 56985), (54, 57087), (62, 57129), (64, 57138), (67, 57156), (91, 57276), (92, 57282), (104, 57342), (105, 57357), (107, 57369),

Gene: Circum\_78 Start: 46108, Stop: 46620, Start Num: 28

Candidate Starts for Circum\_78:

(10, 46036), (Start: 28 @46108 has 33 MA's), (43, 46177), (53, 46231), (79, 46375), (81, 46381), (85, 46402), (86, 46405), (113, 46549),

Gene: ClubPenguin\_87 Start: 51570, Stop: 52061, Start Num: 32

Candidate Starts for ClubPenguin\_87:

(Start: 32 @51570 has 31 MA's), (39, 51612), (47, 51657), (57, 51702), (59, 51714), (63, 51738), (64, 51741), (65, 51744), (77, 51828), (82, 51852), (107, 51978), (111, 51999),

Gene: Conley\_86 Start: 55548, Stop: 56030, Start Num: 32

Candidate Starts for Conley\_86:

(Start: 32 @55548 has 31 MA's), (55, 55671), (62, 55710), (67, 55737), (72, 55770), (77, 55806), (86, 55845), (91, 55857), (118, 56004),

Gene: Conley\_83 Start: 53384, Stop: 53935, Start Num: 13

Candidate Starts for Conley\_83:

(Start: 13 @53384 has 1 MA's), (Start: 30 @53444 has 40 MA's), (Start: 32 @53447 has 31 MA's), (48, 53534), (51, 53546), (57, 53579), (67, 53636), (85, 53735), (94, 53759), (106, 53840), (121, 53924),

Gene: Correa\_75 Start: 45066, Stop: 45578, Start Num: 28

Candidate Starts for Correa\_75:

(Start: 28 @45066 has 33 MA's), (43, 45135), (53, 45189), (79, 45333), (85, 45360),

Gene: Count\_90 Start: 59071, Stop: 59562, Start Num: 25

Candidate Starts for Count\_90:

(Start: 25 @59071 has 1 MA's), (Start: 34 @59098 has 1 MA's), (62, 59245), (64, 59254), (65, 59257), (84, 59368), (98, 59404), (100, 59416), (112, 59500),

Gene: CricKo\_90 Start: 53073, Stop: 53564, Start Num: 30

Candidate Starts for CricKo\_90:

(4, 52932), (5, 52950), (6, 52959), (15, 53031), (17, 53040), (Start: 30 @53073 has 40 MA's), (39, 53118), (48, 53163), (51, 53175), (77, 53331), (84, 53364), (118, 53535),

Gene: Crocheter\_87 Start: 55966, Stop: 56445, Start Num: 31

Candidate Starts for Crocheter\_87:

(Start: 31 @55966 has 2 MA's), (41, 56023), (43, 56029), (55, 56089), (64, 56137), (67, 56155), (84, 56254), (91, 56272), (92, 56278), (104, 56338), (105, 56353), (107, 56365), (111, 56386),

Gene: Damascus\_58 Start: 42170, Stop: 42682, Start Num: 22

Candidate Starts for Damascus\_58:

(Start: 22 @42170 has 2 MA's), (Start: 26 @42182 has 1 MA's), (55, 42314), (62, 42353), (71, 42401), (84, 42473), (104, 42554),

Gene: Darby\_67 Start: 46386, Stop: 46889, Start Num: 23

Candidate Starts for Darby\_67:

(Start: 23 @46386 has 26 MA's), (48, 46485), (77, 46647), (88, 46701), (102, 46758), (104, 46785), (112, 46836),

Gene: DevitoJr\_69 Start: 46771, Stop: 47274, Start Num: 23

Candidate Starts for DevitoJr\_69:

(Start: 23 @46771 has 26 MA's), (48, 46870), (88, 47086), (102, 47143), (104, 47170), (112, 47221),

Gene: DizzyRudy\_62 Start: 42057, Stop: 42569, Start Num: 22

Candidate Starts for DizzyRudy\_62:

(Start: 22 @42057 has 2 MA's), (Start: 26 @42069 has 1 MA's), (39, 42120), (62, 42240), (71, 42288), (84, 42360), (104, 42441),

Gene: Djungelskog\_71 Start: 45207, Stop: 45704, Start Num: 28

Candidate Starts for Djungelskog\_71:

(Start: 16 @45174 has 2 MA's), (19, 45186), (21, 45192), (Start: 28 @45207 has 33 MA's), (Start: 33 @45222 has 2 MA's), (65, 45387), (84, 45495), (103, 45588),

Gene: DoctorPepper\_72 Start: 44909, Stop: 45406, Start Num: 28

Candidate Starts for DoctorPepper\_72:

(Start: 16 @44876 has 2 MA's), (19, 44888), (21, 44894), (Start: 28 @44909 has 33 MA's), (Start: 33 @44924 has 2 MA's), (65, 45089), (84, 45197), (103, 45290),

Gene: Doxi13\_56 Start: 39042, Stop: 39551, Start Num: 30

Candidate Starts for Doxi13\_56:

(Start: 30 @39042 has 40 MA's), (Start: 34 @39057 has 1 MA's), (39, 39084), (52, 39174), (57, 39192), (64, 39231), (75, 39306), (100, 39408), (102, 39414), (103, 39429),

Gene: DrGrey\_78 Start: 51385, Stop: 51894, Start Num: 30

Candidate Starts for DrGrey\_78:

(Start: 30 @51385 has 40 MA's), (39, 51430), (48, 51475), (58, 51544), (77, 51658), (100, 51748), (101, 51751), (103, 51769), (111, 51829), (114, 51838), (119, 51880),

Gene: Duffington\_88 Start: 56767, Stop: 57249, Start Num: 32

Candidate Starts for Duffington\_88:

(Start: 32 @56767 has 31 MA's), (35, 56785), (54, 56887), (62, 56929), (64, 56938), (67, 56956), (91, 57076), (92, 57082), (104, 57142), (105, 57157), (107, 57169),

Gene: Dynamite\_76 Start: 45552, Stop: 46064, Start Num: 28

Candidate Starts for Dynamite\_76:

(Start: 28 @45552 has 33 MA's), (43, 45621), (53, 45675), (79, 45819), (81, 45825), (85, 45846),

Gene: Eddiemania\_86 Start: 56862, Stop: 57341, Start Num: 31

Candidate Starts for Eddiemania\_86:

(Start: 31 @56862 has 2 MA's), (41, 56919), (42, 56922), (43, 56925), (55, 56985), (62, 57024), (64, 57033), (67, 57051), (72, 57081), (91, 57168), (92, 57174), (97, 57192), (104, 57234), (105, 57249), (107, 57261), (111, 57282),

Gene: Egad\_72 Start: 45183, Stop: 45680, Start Num: 28

Candidate Starts for Egad\_72:

(Start: 16 @45150 has 2 MA's), (19, 45162), (21, 45168), (Start: 28 @45183 has 33 MA's), (Start: 33 @45198 has 2 MA's), (65, 45363), (84, 45471), (103, 45564),

Gene: ElephantMan\_70 Start: 47272, Stop: 47775, Start Num: 23

Candidate Starts for ElephantMan\_70:

(Start: 23 @47272 has 26 MA's), (48, 47371), (77, 47533), (88, 47587), (102, 47644), (104, 47671), (112, 47722),

Gene: Elsa\_76 Start: 45700, Stop: 46212, Start Num: 28

Candidate Starts for Elsa\_76:

(Start: 28 @45700 has 33 MA's), (42, 45766), (43, 45769), (53, 45823), (79, 45967), (81, 45973), (85, 45994), (86, 45997),

Gene: Elver\_132 Start: 71317, Stop: 71790, Start Num: 33

Candidate Starts for Elver\_132:

(27, 71296), (Start: 33 @71317 has 2 MA's), (42, 71365), (43, 71368), (44, 71374), (48, 71392), (53, 71422), (90, 71605), (113, 71734),

Gene: EndAve\_89 Start: 56677, Stop: 57159, Start Num: 32

Candidate Starts for EndAve\_89:

(Start: 32 @56677 has 31 MA's), (35, 56695), (54, 56797), (62, 56839), (64, 56848), (67, 56866), (91, 56986), (92, 56992), (104, 57052), (105, 57067), (107, 57079),

Gene: Esketit\_78 Start: 49973, Stop: 50482, Start Num: 30

Candidate Starts for Esketit\_78:

(Start: 30 @49973 has 40 MA's), (39, 50018), (48, 50063), (58, 50132), (77, 50246), (100, 50336), (103, 50357), (111, 50417), (114, 50426), (119, 50468),

Gene: Fazel\_92 Start: 55520, Stop: 56002, Start Num: 32

Candidate Starts for Fazel\_92:

(Start: 32 @55520 has 31 MA's), (38, 55559), (39, 55562), (41, 55577), (53, 55637), (55, 55643), (56, 55649), (64, 55691), (67, 55709), (78, 55781), (91, 55829), (118, 55976), (119, 55994),

Gene: FidgetOrca\_84 Start: 51423, Stop: 51932, Start Num: 30

Candidate Starts for FidgetOrca\_84:

(Start: 30 @51423 has 40 MA's), (39, 51468), (48, 51513), (58, 51582), (77, 51696), (100, 51786), (103, 51807), (111, 51867), (114, 51876), (119, 51918),

Gene: Figliar\_86 Start: 56571, Stop: 57053, Start Num: 32

Candidate Starts for Figliar\_86:

(Start: 32 @56571 has 31 MA's), (35, 56589), (54, 56691), (62, 56733), (64, 56742), (67, 56760), (91, 56880), (92, 56886), (104, 56946), (105, 56961), (107, 56973),

Gene: FortCran\_93 Start: 55254, Stop: 55736, Start Num: 32

Candidate Starts for FortCran\_93:

(Start: 32 @55254 has 31 MA's), (51, 55353), (55, 55377), (67, 55443), (72, 55476), (91, 55563), (105, 55644), (107, 55656), (108, 55659), (111, 55677),

Gene: FrodoSwaggins\_80 Start: 51780, Stop: 52289, Start Num: 30  
Candidate Starts for FrodoSwaggins\_80:  
(Start: 30 @51780 has 40 MA's), (39, 51825), (48, 51870), (58, 51939), (77, 52053), (100, 52143),  
(101, 52146), (103, 52164), (111, 52224), (114, 52233), (119, 52275),

Gene: FromIndy\_88 Start: 52273, Stop: 52764, Start Num: 30  
Candidate Starts for FromIndy\_88:  
(4, 52132), (5, 52150), (6, 52159), (15, 52231), (17, 52240), (Start: 30 @52273 has 40 MA's), (39,  
52318), (48, 52363), (51, 52375), (77, 52531), (84, 52564), (118, 52735),

Gene: GantcherGoblin\_71 Start: 44575, Stop: 45066, Start Num: 28  
Candidate Starts for GantcherGoblin\_71:  
(Start: 26 @44572 has 1 MA's), (Start: 28 @44575 has 33 MA's), (38, 44617), (39, 44620), (71,  
44788), (86, 44869), (103, 44947),

Gene: Giantsbane\_73 Start: 45925, Stop: 46428, Start Num: 23  
Candidate Starts for Giantsbane\_73:  
(Start: 23 @45925 has 26 MA's), (Start: 33 @45949 has 2 MA's), (35, 45955), (38, 45976), (42,  
45997), (48, 46024), (55, 46060), (77, 46186), (102, 46297), (104, 46324),

Gene: Gill\_90 Start: 55283, Stop: 55765, Start Num: 32  
Candidate Starts for Gill\_90:  
(Start: 32 @55283 has 31 MA's), (55, 55406), (62, 55445), (67, 55472), (85, 55577), (91, 55592), (105,  
55673), (107, 55685), (111, 55706),

Gene: GirlPower\_75 Start: 50852, Stop: 51361, Start Num: 30  
Candidate Starts for GirlPower\_75:  
(Start: 30 @50852 has 40 MA's), (39, 50897), (48, 50942), (53, 50972), (58, 51011), (62, 51032), (77,  
51125), (111, 51296), (113, 51302), (114, 51305), (116, 51320),

Gene: GoCrazy\_73 Start: 44995, Stop: 45507, Start Num: 28  
Candidate Starts for GoCrazy\_73:  
(10, 44923), (Start: 28 @44995 has 33 MA's), (43, 45064), (53, 45118), (79, 45262), (81, 45268), (85,  
45289), (86, 45292), (113, 45436),

Gene: GoblinVoyage\_55 Start: 38886, Stop: 39395, Start Num: 30  
Candidate Starts for GoblinVoyage\_55:  
(Start: 30 @38886 has 40 MA's), (Start: 34 @38901 has 1 MA's), (39, 38928), (52, 39018), (57,  
39036), (64, 39075), (75, 39150), (100, 39252), (102, 39258), (103, 39273),

Gene: Gordon\_67 Start: 47259, Stop: 47762, Start Num: 23  
Candidate Starts for Gordon\_67:  
(Start: 23 @47259 has 26 MA's), (48, 47358), (77, 47520), (88, 47574), (102, 47631), (104, 47658),  
(112, 47709),

Gene: Gravy\_89 Start: 54946, Stop: 55428, Start Num: 32  
Candidate Starts for Gravy\_89:  
(Start: 32 @54946 has 31 MA's), (55, 55069), (62, 55108), (67, 55135), (85, 55240), (91, 55255), (105,  
55336), (107, 55348), (111, 55369),

Gene: Hankly\_76 Start: 45190, Stop: 45702, Start Num: 28  
Candidate Starts for Hankly\_76:

(Start: 28 @45190 has 33 MA's), (43, 45259), (53, 45313), (79, 45457), (81, 45463), (85, 45484),

Gene: Heisenberger\_75 Start: 44957, Stop: 45469, Start Num: 28

Candidate Starts for Heisenberger\_75:

(10, 44885), (Start: 28 @44957 has 33 MA's), (43, 45026), (53, 45080), (79, 45224), (81, 45230), (85, 45251), (86, 45254),

Gene: Hortihabitatio\_85 Start: 55292, Stop: 55774, Start Num: 32

Candidate Starts for Hortihabitatio\_85:

(Start: 32 @55292 has 31 MA's), (39, 55334), (41, 55349), (64, 55463), (65, 55466), (67, 55481), (91, 55601), (99, 55631), (118, 55748), (119, 55766),

Gene: Hoshi\_83 Start: 51036, Stop: 51545, Start Num: 30

Candidate Starts for Hoshi\_83:

(Start: 30 @51036 has 40 MA's), (39, 51081), (48, 51126), (58, 51195), (77, 51309), (100, 51399), (103, 51420), (111, 51480), (114, 51489), (119, 51531),

Gene: HotFries\_53 Start: 39084, Stop: 39578, Start Num: 34

Candidate Starts for HotFries\_53:

(7, 38961), (Start: 12 @39006 has 1 MA's), (Start: 30 @39069 has 40 MA's), (Start: 34 @39084 has 1 MA's), (39, 39111), (52, 39201), (57, 39219), (64, 39258), (75, 39333), (100, 39435), (102, 39441), (103, 39456),

Gene: Hydrus\_87 Start: 56277, Stop: 56756, Start Num: 32

Candidate Starts for Hydrus\_87:

(Start: 32 @56277 has 31 MA's), (42, 56337), (54, 56397), (64, 56448), (67, 56466), (84, 56565), (91, 56583), (92, 56589), (104, 56649), (105, 56664), (107, 56676), (111, 56697),

Gene: IceWarrior\_82 Start: 50842, Stop: 51351, Start Num: 30

Candidate Starts for IceWarrior\_82:

(Start: 30 @50842 has 40 MA's), (39, 50887), (48, 50932), (58, 51001), (77, 51115), (100, 51205), (111, 51286), (114, 51295), (119, 51337),

Gene: Indigenous\_84 Start: 51428, Stop: 51937, Start Num: 30

Candidate Starts for Indigenous\_84:

(Start: 30 @51428 has 40 MA's), (39, 51473), (48, 51518), (58, 51587), (77, 51701), (100, 51791), (103, 51812), (111, 51872), (114, 51881), (119, 51923),

Gene: Ingrid\_76 Start: 47223, Stop: 47726, Start Num: 23

Candidate Starts for Ingrid\_76:

(Start: 23 @47223 has 26 MA's), (42, 47295), (55, 47358), (62, 47397), (74, 47469), (77, 47484),

Gene: Inked\_75 Start: 47849, Stop: 48352, Start Num: 23

Candidate Starts for Inked\_75:

(Start: 23 @47849 has 26 MA's), (42, 47921), (55, 47984), (62, 48023), (74, 48095), (77, 48110),

Gene: Issa\_68 Start: 46433, Stop: 46936, Start Num: 23

Candidate Starts for Issa\_68:

(Start: 23 @46433 has 26 MA's), (48, 46532), (77, 46694), (88, 46748), (102, 46805), (104, 46832), (112, 46883),

Gene: JEGGS\_75 Start: 45036, Stop: 45548, Start Num: 28

Candidate Starts for JEGGS\_75:



(10, 44964), (Start: 28 @45036 has 33 MA's), (43, 45105), (53, 45159), (79, 45303), (81, 45309), (85, 45330), (86, 45333),

Gene: Jaylociraptor\_82 Start: 51008, Stop: 51517, Start Num: 30

Candidate Starts for Jaylociraptor\_82:

(Start: 30 @51008 has 40 MA's), (39, 51053), (48, 51098), (58, 51167), (77, 51281), (100, 51371), (103, 51392), (111, 51452), (114, 51461), (119, 51503),

Gene: Jazzy4900\_70 Start: 47081, Stop: 47557, Start Num: 28

Candidate Starts for Jazzy4900\_70:

(Start: 28 @47081 has 33 MA's), (49, 47177), (79, 47345), (117, 47525),

Gene: Jodelie19\_87 Start: 57758, Stop: 58240, Start Num: 32

Candidate Starts for Jodelie19\_87:

(Start: 32 @57758 has 31 MA's), (37, 57791), (53, 57875), (91, 58064), (104, 58130), (105, 58145), (107, 58157),

Gene: Kardashian\_79 Start: 51398, Stop: 51889, Start Num: 30

Candidate Starts for Kardashian\_79:

(24, 51386), (Start: 30 @51398 has 40 MA's), (36, 51425), (39, 51443), (42, 51461), (51, 51500), (56, 51530), (65, 51575), (80, 51668), (114, 51836), (119, 51878),

Gene: Kardesai\_76 Start: 45309, Stop: 45821, Start Num: 28

Candidate Starts for Kardesai\_76:

(10, 45237), (Start: 28 @45309 has 33 MA's), (43, 45378), (53, 45432), (79, 45576), (81, 45582), (85, 45603), (86, 45606), (113, 45750),

Gene: KeaneyLin\_72 Start: 44995, Stop: 45507, Start Num: 28

Candidate Starts for KeaneyLin\_72:

(10, 44923), (Start: 28 @44995 has 33 MA's), (43, 45064), (53, 45118), (79, 45262), (81, 45268), (85, 45289), (86, 45292), (113, 45436),

Gene: Kenosha\_86 Start: 56334, Stop: 56813, Start Num: 31

Candidate Starts for Kenosha\_86:

(Start: 31 @56334 has 2 MA's), (41, 56391), (42, 56394), (43, 56397), (55, 56457), (64, 56505), (67, 56523), (91, 56640), (92, 56646), (97, 56664), (104, 56706), (105, 56721), (107, 56733), (111, 56754),

Gene: Kerry\_89 Start: 55009, Stop: 55491, Start Num: 32

Candidate Starts for Kerry\_89:

(Start: 32 @55009 has 31 MA's), (55, 55132), (62, 55171), (67, 55198), (85, 55303), (91, 55318), (105, 55399), (107, 55411), (111, 55432),

Gene: Leathea\_73 Start: 44483, Stop: 44992, Start Num: 28

Candidate Starts for Leathea\_73:

(18, 44459), (20, 44465), (Start: 26 @44480 has 1 MA's), (Start: 28 @44483 has 33 MA's), (39, 44528), (61, 44642), (71, 44696), (86, 44777), (93, 44801), (99, 44831),

Gene: Lewando\_77 Start: 46439, Stop: 46930, Start Num: 28

Candidate Starts for Lewando\_77:

(Start: 26 @46436 has 1 MA's), (Start: 28 @46439 has 33 MA's), (38, 46481), (39, 46484), (66, 46622), (71, 46652), (73, 46667), (86, 46733), (110, 46865), (113, 46877),

Gene: LibertyBell\_75 Start: 48093, Stop: 48605, Start Num: 30

Candidate Starts for LibertyBell\_75:

(2, 47907), (3, 47940), (8, 48006), (Start: 26 @48087 has 1 MA's), (Start: 30 @48093 has 40 MA's), (48, 48183), (53, 48213), (55, 48219), (57, 48228), (67, 48285), (68, 48318), (105, 48510), (114, 48552), (119, 48594), (120, 48597),

Gene: LibertyBell\_73 Start: 45969, Stop: 46457, Start Num: 28

Candidate Starts for LibertyBell\_73:

(Start: 28 @45969 has 33 MA's), (43, 46038), (65, 46152), (77, 46227), (99, 46308), (107, 46371),

Gene: LilHuddy\_74 Start: 47051, Stop: 47554, Start Num: 23

Candidate Starts for LilHuddy\_74:

(Start: 23 @47051 has 26 MA's), (35, 47081), (38, 47102), (42, 47123), (48, 47150), (55, 47186), (77, 47312), (88, 47366), (102, 47423), (104, 47450),

Gene: Linda\_72 Start: 45202, Stop: 45699, Start Num: 28

Candidate Starts for Linda\_72:

(Start: 16 @45169 has 2 MA's), (19, 45181), (21, 45187), (Start: 28 @45202 has 33 MA's), (Start: 33 @45217 has 2 MA's), (65, 45382), (84, 45490), (103, 45583),

Gene: Loretta\_72 Start: 47223, Stop: 47726, Start Num: 23

Candidate Starts for Loretta\_72:

(Start: 23 @47223 has 26 MA's), (42, 47295), (55, 47358), (62, 47397), (74, 47469), (77, 47484),

Gene: Madamoto\_81 Start: 50680, Stop: 51192, Start Num: 30

Candidate Starts for Madamoto\_81:

(Start: 30 @50680 has 40 MA's), (39, 50725), (48, 50770), (58, 50839), (62, 50860), (103, 51064), (107, 51103), (111, 51124), (114, 51133),

Gene: Madvan\_85 Start: 55589, Stop: 56068, Start Num: 32

Candidate Starts for Madvan\_85:

(Start: 32 @55589 has 31 MA's), (42, 55649), (54, 55709), (64, 55760), (67, 55778), (84, 55877), (91, 55895), (92, 55901), (104, 55961), (105, 55976), (107, 55988), (111, 56009),

Gene: Magel\_91 Start: 55198, Stop: 55680, Start Num: 32

Candidate Starts for Magel\_91:

(Start: 32 @55198 has 31 MA's), (55, 55321), (62, 55360), (67, 55387), (85, 55492), (91, 55507), (105, 55588), (107, 55600), (111, 55621),

Gene: Makai\_73 Start: 47336, Stop: 47839, Start Num: 23

Candidate Starts for Makai\_73:

(Start: 23 @47336 has 26 MA's), (Start: 33 @47360 has 2 MA's), (38, 47387), (48, 47435), (55, 47471), (77, 47597), (88, 47651), (102, 47708), (104, 47735), (112, 47786),

Gene: Maya\_82 Start: 51022, Stop: 51531, Start Num: 30

Candidate Starts for Maya\_82:

(Start: 30 @51022 has 40 MA's), (39, 51067), (48, 51112), (58, 51181), (77, 51295), (100, 51385), (103, 51406), (111, 51466), (114, 51475), (119, 51517),

Gene: MediumFry\_69 Start: 46566, Stop: 47069, Start Num: 23

Candidate Starts for MediumFry\_69:

(Start: 23 @46566 has 26 MA's), (42, 46638), (55, 46701), (62, 46740), (77, 46827), (102, 46938),

Gene: Meibysrurus\_80 Start: 50406, Stop: 50915, Start Num: 30

Candidate Starts for Meibysrarus\_80:

(Start: 30 @50406 has 40 MA's), (39, 50451), (48, 50496), (58, 50565), (77, 50679), (100, 50769), (103, 50790), (111, 50850), (114, 50859), (119, 50901),

Gene: Michelle\_72 Start: 45171, Stop: 45701, Start Num: 16

Candidate Starts for Michelle\_72:

(Start: 16 @45171 has 2 MA's), (19, 45183), (21, 45189), (Start: 28 @45204 has 33 MA's), (Start: 33 @45219 has 2 MA's), (65, 45384), (84, 45492), (103, 45585),

Gene: Miek\_84 Start: 51455, Stop: 51946, Start Num: 30

Candidate Starts for Miek\_84:

(4, 51314), (5, 51332), (6, 51341), (15, 51413), (17, 51422), (Start: 30 @51455 has 40 MA's), (39, 51500), (48, 51545), (51, 51557), (77, 51713), (84, 51746), (118, 51917),

Gene: MiniBagel\_65 Start: 47363, Stop: 47866, Start Num: 23

Candidate Starts for MiniBagel\_65:

(Start: 23 @47363 has 26 MA's), (42, 47435), (48, 47462), (77, 47624), (88, 47678), (102, 47735), (104, 47762), (112, 47813),

Gene: Mooshroom\_76 Start: 45309, Stop: 45821, Start Num: 28

Candidate Starts for Mooshroom\_76:

(10, 45237), (Start: 28 @45309 has 33 MA's), (43, 45378), (53, 45432), (79, 45576), (81, 45582), (85, 45603), (86, 45606), (113, 45750),

Gene: Moozy\_54 Start: 38896, Stop: 39405, Start Num: 30

Candidate Starts for Moozy\_54:

(7, 38788), (Start: 12 @38833 has 1 MA's), (Start: 30 @38896 has 40 MA's), (Start: 34 @38911 has 1 MA's), (39, 38938), (52, 39028), (57, 39046), (64, 39085), (75, 39160), (100, 39262), (102, 39268), (103, 39283),

Gene: Mossy\_86 Start: 56611, Stop: 57093, Start Num: 32

Candidate Starts for Mossy\_86:

(Start: 32 @56611 has 31 MA's), (38, 56650), (53, 56728), (55, 56734), (64, 56782), (65, 56785), (67, 56800), (91, 56920), (104, 56986), (118, 57067),

Gene: MrAaronian\_72 Start: 45204, Stop: 45701, Start Num: 28

Candidate Starts for MrAaronian\_72:

(Start: 16 @45171 has 2 MA's), (19, 45183), (21, 45189), (Start: 28 @45204 has 33 MA's), (Start: 33 @45219 has 2 MA's), (65, 45384), (84, 45492), (103, 45585),

Gene: Mudcat\_72 Start: 46394, Stop: 46906, Start Num: 28

Candidate Starts for Mudcat\_72:

(10, 46322), (Start: 28 @46394 has 33 MA's), (43, 46463), (53, 46517), (79, 46661), (81, 46667), (85, 46688), (86, 46691),

Gene: Nadmeg\_86 Start: 56574, Stop: 57053, Start Num: 32

Candidate Starts for Nadmeg\_86:

(Start: 32 @56574 has 31 MA's), (54, 56694), (67, 56763), (91, 56880), (92, 56886), (104, 56946), (105, 56961), (107, 56973), (111, 56994),

Gene: Namo\_84 Start: 51477, Stop: 51986, Start Num: 30

Candidate Starts for Namo\_84:

(Start: 30 @51477 has 40 MA's), (39, 51522), (48, 51567), (58, 51636), (77, 51750), (100, 51840), (103, 51861), (111, 51921), (114, 51930), (119, 51972),

Gene: NapoleonB\_77 Start: 45552, Stop: 46064, Start Num: 28

Candidate Starts for NapoleonB\_77:

(Start: 28 @45552 has 33 MA's), (43, 45621), (53, 45675), (79, 45819), (81, 45825), (85, 45846),

Gene: Nason\_76 Start: 45700, Stop: 46212, Start Num: 28

Candidate Starts for Nason\_76:

(Start: 28 @45700 has 33 MA's), (42, 45766), (43, 45769), (53, 45823), (79, 45967), (81, 45973), (85, 45994), (86, 45997),

Gene: Nightmare\_70 Start: 47676, Stop: 48179, Start Num: 23

Candidate Starts for Nightmare\_70:

(Start: 23 @47676 has 26 MA's), (48, 47775), (77, 47937), (88, 47991), (102, 48048), (112, 48126),

Gene: Niktson\_70 Start: 47272, Stop: 47775, Start Num: 23

Candidate Starts for Niktson\_70:

(Start: 23 @47272 has 26 MA's), (48, 47371), (77, 47533), (88, 47587), (102, 47644), (104, 47671), (112, 47722),

Gene: Nithya\_87 Start: 56516, Stop: 56998, Start Num: 32

Candidate Starts for Nithya\_87:

(Start: 32 @56516 has 31 MA's), (35, 56534), (54, 56636), (62, 56678), (64, 56687), (67, 56705), (91, 56825), (92, 56831), (104, 56891), (105, 56906), (107, 56918),

Gene: Nivinsha\_72 Start: 46808, Stop: 47311, Start Num: 23

Candidate Starts for Nivinsha\_72:

(Start: 23 @46808 has 26 MA's), (48, 46907), (77, 47069), (88, 47123), (102, 47180), (112, 47258),

Gene: Odesza\_88 Start: 55145, Stop: 55627, Start Num: 32

Candidate Starts for Odesza\_88:

(Start: 32 @55145 has 31 MA's), (55, 55268), (62, 55307), (67, 55334), (85, 55439), (91, 55454), (105, 55535), (107, 55547), (111, 55568),

Gene: OhMyWard\_82 Start: 56405, Stop: 56887, Start Num: 32

Candidate Starts for OhMyWard\_82:

(Start: 32 @56405 has 31 MA's), (38, 56444), (53, 56522), (55, 56528), (64, 56576), (65, 56579), (67, 56594), (78, 56666), (91, 56714), (118, 56861),

Gene: OlgasClover\_89 Start: 57350, Stop: 57832, Start Num: 32

Candidate Starts for OlgasClover\_89:

(Start: 32 @57350 has 31 MA's), (35, 57368), (54, 57470), (62, 57512), (64, 57521), (67, 57539), (91, 57659), (92, 57665), (104, 57725), (105, 57740), (107, 57752),

Gene: OlympicHelado\_84 Start: 51498, Stop: 52007, Start Num: 30

Candidate Starts for OlympicHelado\_84:

(Start: 30 @51498 has 40 MA's), (39, 51543), (48, 51588), (58, 51657), (77, 51771), (100, 51861), (103, 51882), (111, 51942), (114, 51951), (119, 51993),

Gene: Paella\_134 Start: 71880, Stop: 72353, Start Num: 33

Candidate Starts for Paella\_134:

(27, 71859), (Start: 33 @71880 has 2 MA's), (42, 71928), (43, 71931), (44, 71937), (48, 71955), (53, 71985), (90, 72168), (113, 72297),

Gene: Pepy6\_051 Start: 72091, Stop: 72582, Start Num: 30

Candidate Starts for Pepy6\_051:

(Start: 30 @72091 has 40 MA's), (Start: 33 @72106 has 2 MA's), (46, 72175), (54, 72214), (55, 72217), (57, 72226), (73, 72325), (79, 72361), (80, 72364), (91, 72403), (95, 72421), (99, 72433), (100, 72436), (105, 72484), (113, 72523),

Gene: Perkunas\_91 Start: 55043, Stop: 55525, Start Num: 32

Candidate Starts for Perkunas\_91:

(Start: 32 @55043 has 31 MA's), (55, 55166), (67, 55232), (72, 55265), (91, 55352), (107, 55445), (114, 55475), (118, 55499),

Gene: Petito\_87 Start: 55917, Stop: 56399, Start Num: 32

Candidate Starts for Petito\_87:

(Start: 32 @55917 has 31 MA's), (55, 56040), (67, 56106), (72, 56139), (91, 56226), (107, 56319), (111, 56340),

Gene: Phaby\_74 Start: 47582, Stop: 48085, Start Num: 23

Candidate Starts for Phaby\_74:

(Start: 23 @47582 has 26 MA's), (35, 47612), (38, 47633), (42, 47654), (48, 47681), (55, 47717), (77, 47843), (88, 47897), (102, 47954), (104, 47981),

Gene: Phepper\_88 Start: 56061, Stop: 56540, Start Num: 32

Candidate Starts for Phepper\_88:

(Start: 32 @56061 has 31 MA's), (42, 56121), (54, 56181), (64, 56232), (67, 56250), (84, 56349), (91, 56367), (92, 56373), (104, 56433), (105, 56448), (107, 56460), (111, 56481),

Gene: Pherobrine\_85 Start: 55751, Stop: 56233, Start Num: 32

Candidate Starts for Pherobrine\_85:

(19, 55721), (Start: 32 @55751 has 31 MA's), (38, 55790), (41, 55808), (45, 55829), (53, 55868), (64, 55922), (67, 55940), (91, 56060), (99, 56090), (118, 56207),

Gene: PherryCruz\_54 Start: 39085, Stop: 39594, Start Num: 30

Candidate Starts for PherryCruz\_54:

(1, 38812), (7, 38977), (Start: 12 @39022 has 1 MA's), (Start: 30 @39085 has 40 MA's), (Start: 34 @39100 has 1 MA's), (39, 39127), (57, 39235), (64, 39274), (75, 39349), (100, 39451), (102, 39457), (103, 39472),

Gene: Poco6\_050 Start: 73353, Stop: 73844, Start Num: 30

Candidate Starts for Poco6\_050:

(Start: 30 @73353 has 40 MA's), (Start: 33 @73368 has 2 MA's), (54, 73476), (55, 73479), (57, 73488), (73, 73587), (91, 73665), (95, 73683), (99, 73695), (100, 73698), (103, 73719), (105, 73746), (113, 73785),

Gene: Popy\_80 Start: 51779, Stop: 52288, Start Num: 30

Candidate Starts for Popy\_80:

(Start: 30 @51779 has 40 MA's), (39, 51824), (48, 51869), (58, 51938), (77, 52052), (100, 52142), (101, 52145), (103, 52163), (111, 52223), (114, 52232), (119, 52274),

Gene: ProfFrink\_73 Start: 45182, Stop: 45679, Start Num: 28

Candidate Starts for ProfFrink\_73:

(Start: 16 @45149 has 2 MA's), (19, 45161), (21, 45167), (Start: 28 @45182 has 33 MA's), (Start: 33 @45197 has 2 MA's), (65, 45362), (84, 45470), (103, 45563),

Gene: Qui\_134 Start: 71880, Stop: 72353, Start Num: 33

Candidate Starts for Qui\_134:

(27, 71859), (Start: 33 @71880 has 2 MA's), (42, 71928), (43, 71931), (44, 71937), (48, 71955), (53, 71985), (90, 72168), (113, 72297),

Gene: Rainydai\_87 Start: 53073, Stop: 53564, Start Num: 30

Candidate Starts for Rainydai\_87:

(4, 52932), (5, 52950), (6, 52959), (15, 53031), (17, 53040), (Start: 30 @53073 has 40 MA's), (39, 53118), (48, 53163), (51, 53175), (77, 53331), (84, 53364), (118, 53535),

Gene: Raunak\_73 Start: 44844, Stop: 45341, Start Num: 28

Candidate Starts for Raunak\_73:

(Start: 16 @44811 has 2 MA's), (19, 44823), (21, 44829), (Start: 28 @44844 has 33 MA's), (Start: 33 @44859 has 2 MA's), (65, 45024), (84, 45132), (103, 45225),

Gene: RavenPuff\_55 Start: 39055, Stop: 39564, Start Num: 30

Candidate Starts for RavenPuff\_55:

(Start: 30 @39055 has 40 MA's), (Start: 34 @39070 has 1 MA's), (39, 39097), (52, 39187), (57, 39205), (64, 39244), (75, 39319), (100, 39421), (102, 39427), (103, 39442),

Gene: Regigigas\_90 Start: 52685, Stop: 53176, Start Num: 30

Candidate Starts for Regigigas\_90:

(4, 52544), (5, 52562), (6, 52571), (15, 52643), (17, 52652), (Start: 30 @52685 has 40 MA's), (39, 52730), (48, 52775), (51, 52787), (77, 52943), (84, 52976), (118, 53147),

Gene: Renaldo\_81 Start: 46660, Stop: 47151, Start Num: 28

Candidate Starts for Renaldo\_81:

(Start: 26 @46657 has 1 MA's), (Start: 28 @46660 has 33 MA's), (38, 46702), (39, 46705), (66, 46843), (71, 46873), (73, 46888), (86, 46954), (110, 47086), (113, 47098),

Gene: Rickmore\_88 Start: 55645, Stop: 56139, Start Num: 32

Candidate Starts for Rickmore\_88:

(Start: 32 @55645 has 31 MA's), (54, 55765), (62, 55807), (64, 55816), (67, 55834), (91, 55951), (95, 55969), (96, 55972), (104, 56017), (107, 56044),

Gene: Rima\_83 Start: 51477, Stop: 51986, Start Num: 30

Candidate Starts for Rima\_83:

(Start: 30 @51477 has 40 MA's), (39, 51522), (48, 51567), (58, 51636), (77, 51750), (100, 51840), (103, 51861), (111, 51921), (114, 51930), (119, 51972),

Gene: Roney\_88 Start: 55308, Stop: 55790, Start Num: 32

Candidate Starts for Roney\_88:

(Start: 32 @55308 has 31 MA's), (55, 55431), (62, 55470), (67, 55497), (85, 55602), (91, 55617), (105, 55698), (107, 55710), (111, 55731),

Gene: RosaAsantewaa\_51 Start: 38179, Stop: 38670, Start Num: 30

Candidate Starts for RosaAsantewaa\_51:

(11, 38107), (Start: 30 @38179 has 40 MA's), (48, 38266), (53, 38296), (55, 38302), (57, 38311), (64, 38350), (67, 38368), (77, 38437), (114, 38617), (115, 38629),

Gene: Runhaar\_85 Start: 55666, Stop: 56145, Start Num: 32

Candidate Starts for Runhaar\_85:

(Start: 32 @55666 has 31 MA's), (54, 55786), (67, 55855), (91, 55972), (92, 55978), (104, 56038), (105, 56053), (107, 56065), (111, 56086),

Gene: Salk\_72 Start: 45202, Stop: 45699, Start Num: 28

Candidate Starts for Salk\_72:

(Start: 16 @45169 has 2 MA's), (19, 45181), (21, 45187), (Start: 28 @45202 has 33 MA's), (Start: 33 @45217 has 2 MA's), (65, 45382), (84, 45490), (103, 45583),

Gene: Scap1\_52 Start: 38365, Stop: 38937, Start Num: 12

Candidate Starts for Scap1\_52:

(Start: 12 @38365 has 1 MA's), (Start: 30 @38428 has 40 MA's), (Start: 34 @38443 has 1 MA's), (39, 38470), (40, 38488), (52, 38560), (56, 38575), (57, 38578), (64, 38617), (100, 38794), (102, 38800),

Gene: Schwartz33\_84 Start: 54940, Stop: 55425, Start Num: 30

Candidate Starts for Schwartz33\_84:

(Start: 30 @54940 has 40 MA's), (39, 54982), (41, 54997), (64, 55111), (67, 55129), (84, 55231), (91, 55249), (97, 55273), (104, 55315), (105, 55330), (113, 55369),

Gene: ScienceWizSam\_71 Start: 46973, Stop: 47476, Start Num: 23

Candidate Starts for ScienceWizSam\_71:

(Start: 23 @46973 has 26 MA's), (48, 47072), (77, 47234), (88, 47288), (102, 47345), (104, 47372), (112, 47423),

Gene: Secretariat\_80 Start: 53208, Stop: 53693, Start Num: 30

Candidate Starts for Secretariat\_80:

(Start: 30 @53208 has 40 MA's), (39, 53250), (41, 53265), (64, 53379), (67, 53397), (84, 53499), (91, 53517), (97, 53541), (104, 53583), (105, 53598), (113, 53637), (114, 53640), (119, 53682),

Gene: SendItCS\_82 Start: 51443, Stop: 51934, Start Num: 30

Candidate Starts for SendItCS\_82:

(4, 51302), (5, 51320), (6, 51329), (15, 51401), (17, 51410), (Start: 30 @51443 has 40 MA's), (39, 51488), (48, 51533), (51, 51545), (77, 51701), (84, 51734), (118, 51905),

Gene: SheRa\_55 Start: 38965, Stop: 39474, Start Num: 30

Candidate Starts for SheRa\_55:

(7, 38857), (Start: 12 @38902 has 1 MA's), (Start: 30 @38965 has 40 MA's), (Start: 34 @38980 has 1 MA's), (39, 39007), (52, 39097), (57, 39115), (64, 39154), (75, 39229), (100, 39331), (102, 39337), (103, 39352),

Gene: Shepard\_74 Start: 46904, Stop: 47407, Start Num: 23

Candidate Starts for Shepard\_74:

(Start: 23 @46904 has 26 MA's), (35, 46934), (38, 46955), (42, 46976), (48, 47003), (55, 47039), (77, 47165), (88, 47219), (102, 47276), (104, 47303),

Gene: Shiba\_71 Start: 44860, Stop: 45357, Start Num: 28

Candidate Starts for Shiba\_71:

(Start: 16 @44827 has 2 MA's), (19, 44839), (21, 44845), (Start: 28 @44860 has 33 MA's), (Start: 33 @44875 has 2 MA's), (65, 45040), (84, 45148), (103, 45241),

Gene: Sloopyjoe\_72 Start: 45206, Stop: 45703, Start Num: 28

Candidate Starts for Sloopyjoe\_72:

(Start: 16 @45173 has 2 MA's), (19, 45185), (21, 45191), (Start: 28 @45206 has 33 MA's), (Start: 33 @45221 has 2 MA's), (65, 45386), (84, 45494), (103, 45587),

Gene: Soshi\_81 Start: 51620, Stop: 52129, Start Num: 30

Candidate Starts for Soshi\_81:

(Start: 30 @51620 has 40 MA's), (39, 51665), (48, 51710), (58, 51779), (77, 51893), (100, 51983), (103, 52004), (111, 52064), (114, 52073), (119, 52115),

Gene: Spectropatronm\_81 Start: 51016, Stop: 51525, Start Num: 30

Candidate Starts for Spectropatronm\_81:

(Start: 30 @51016 has 40 MA's), (39, 51061), (48, 51106), (58, 51175), (77, 51289), (100, 51379), (103, 51400), (111, 51460), (114, 51469), (119, 51511),

Gene: Sporto\_71 Start: 46287, Stop: 46784, Start Num: 28

Candidate Starts for Sporto\_71:

(14, 46248), (Start: 28 @46287 has 33 MA's), (42, 46350), (48, 46377), (60, 46440), (70, 46494), (83, 46569), (89, 46599), (102, 46653),

Gene: StarLord\_72 Start: 45199, Stop: 45696, Start Num: 28

Candidate Starts for StarLord\_72:

(Start: 16 @45166 has 2 MA's), (19, 45178), (21, 45184), (Start: 28 @45199 has 33 MA's), (Start: 33 @45214 has 2 MA's), (65, 45379), (84, 45487), (103, 45580),

Gene: Stayer\_72 Start: 45169, Stop: 45699, Start Num: 16

Candidate Starts for Stayer\_72:

(Start: 16 @45169 has 2 MA's), (19, 45181), (21, 45187), (Start: 28 @45202 has 33 MA's), (Start: 33 @45217 has 2 MA's), (65, 45382), (84, 45490), (103, 45583),

Gene: Sunny4976\_69 Start: 47081, Stop: 47557, Start Num: 28

Candidate Starts for Sunny4976\_69:

(Start: 28 @47081 has 33 MA's), (49, 47177), (79, 47345), (117, 47525),

Gene: Synopsis\_66 Start: 46738, Stop: 47241, Start Num: 23

Candidate Starts for Synopsis\_66:

(Start: 23 @46738 has 26 MA's), (48, 46837), (77, 46999), (88, 47053), (102, 47110), (112, 47188),

Gene: TaidaOne\_82 Start: 51492, Stop: 52001, Start Num: 30

Candidate Starts for TaidaOne\_82:

(Start: 30 @51492 has 40 MA's), (39, 51537), (48, 51582), (58, 51651), (77, 51765), (100, 51855), (103, 51876), (111, 51936), (114, 51945), (119, 51987),

Gene: Tanis\_89 Start: 55128, Stop: 55610, Start Num: 32

Candidate Starts for Tanis\_89:

(Start: 32 @55128 has 31 MA's), (55, 55251), (62, 55290), (67, 55317), (85, 55422), (91, 55437), (105, 55518), (107, 55530), (111, 55551),

Gene: Tatanka\_63 Start: 46880, Stop: 47383, Start Num: 23

Candidate Starts for Tatanka\_63:

(Start: 23 @46880 has 26 MA's), (48, 46979), (77, 47141), (88, 47195), (102, 47252), (104, 47279), (112, 47330),

Gene: Teacup\_71 Start: 47312, Stop: 47815, Start Num: 23

Candidate Starts for Teacup\_71:



(Start: 23 @47312 has 26 MA's), (48, 47411), (76, 47570), (77, 47573), (88, 47627), (102, 47684), (104, 47711), (112, 47762),

Gene: TenaciousP\_94 Start: 57721, Stop: 58203, Start Num: 32

Candidate Starts for TenaciousP\_94:

(Start: 32 @57721 has 31 MA's), (37, 57754), (53, 57838), (91, 58027), (104, 58093), (105, 58108), (107, 58120),

Gene: Tenno\_69 Start: 47396, Stop: 47899, Start Num: 23

Candidate Starts for Tenno\_69:

(Start: 23 @47396 has 26 MA's), (Start: 33 @47420 has 2 MA's), (48, 47495), (77, 47657), (88, 47711), (102, 47768), (104, 47795), (112, 47846),

Gene: Thiqqums\_90 Start: 53073, Stop: 53564, Start Num: 30

Candidate Starts for Thiqqums\_90:

(4, 52932), (5, 52950), (6, 52959), (15, 53031), (17, 53040), (Start: 30 @53073 has 40 MA's), (39, 53118), (48, 53163), (51, 53175), (77, 53331), (84, 53364), (118, 53535),

Gene: TieDye\_78 Start: 50340, Stop: 50849, Start Num: 30

Candidate Starts for TieDye\_78:

(Start: 30 @50340 has 40 MA's), (39, 50385), (48, 50430), (58, 50499), (77, 50613), (100, 50703), (103, 50724), (111, 50784), (114, 50793), (119, 50835),

Gene: Tokki\_79 Start: 47450, Stop: 47953, Start Num: 23

Candidate Starts for Tokki\_79:

(Start: 23 @47450 has 26 MA's), (35, 47480), (38, 47501), (42, 47522), (48, 47549), (55, 47585), (77, 47711), (88, 47765), (102, 47822), (104, 47849),

Gene: TonyStarch\_81 Start: 50778, Stop: 51287, Start Num: 30

Candidate Starts for TonyStarch\_81:

(Start: 30 @50778 has 40 MA's), (39, 50823), (48, 50868), (58, 50937), (77, 51051), (100, 51141), (103, 51162), (111, 51222), (114, 51231), (119, 51273),

Gene: Tribby\_80 Start: 46452, Stop: 46964, Start Num: 28

Candidate Starts for Tribby\_80:

(Start: 28 @46452 has 33 MA's), (43, 46521), (53, 46575), (79, 46719), (85, 46746),

Gene: Truckee\_71 Start: 47121, Stop: 47624, Start Num: 23

Candidate Starts for Truckee\_71:

(Start: 23 @47121 has 26 MA's), (Start: 33 @47145 has 2 MA's), (38, 47172), (48, 47220), (55, 47256), (77, 47382), (88, 47436), (102, 47493), (104, 47520), (112, 47571),

Gene: Trustiboi\_68 Start: 46995, Stop: 47498, Start Num: 23

Candidate Starts for Trustiboi\_68:

(Start: 23 @46995 has 26 MA's), (48, 47094), (77, 47256), (88, 47310), (102, 47367), (104, 47394), (112, 47445),

Gene: Untouchable\_89 Start: 57058, Stop: 57537, Start Num: 32

Candidate Starts for Untouchable\_89:

(Start: 32 @57058 has 31 MA's), (42, 57118), (54, 57178), (64, 57229), (67, 57247), (84, 57346), (91, 57364), (92, 57370), (104, 57430), (105, 57445), (107, 57457), (111, 57478),

Gene: Uzumaki\_70 Start: 44675, Stop: 45166, Start Num: 28

Candidate Starts for Uzumaki\_70:

(Start: 26 @44672 has 1 MA's), (Start: 28 @44675 has 33 MA's), (38, 44717), (39, 44720), (71, 44888), (86, 44969), (103, 45047),

Gene: Vardy\_86 Start: 55581, Stop: 56060, Start Num: 32

Candidate Starts for Vardy\_86:

(Start: 32 @55581 has 31 MA's), (54, 55701), (67, 55770), (91, 55887), (92, 55893), (104, 55953), (105, 55968), (107, 55980), (111, 56001),

Gene: Xenomorph\_73 Start: 45979, Stop: 46491, Start Num: 28

Candidate Starts for Xenomorph\_73:

(Start: 28 @45979 has 33 MA's), (43, 46048), (53, 46102), (79, 46246), (81, 46252), (85, 46273), (86, 46276), (113, 46420),

Gene: Zeina\_76 Start: 45531, Stop: 46022, Start Num: 28

Candidate Starts for Zeina\_76:

(Start: 26 @45528 has 1 MA's), (Start: 28 @45531 has 33 MA's), (38, 45573), (39, 45576), (71, 45744), (86, 45825), (103, 45903),

Gene: Zeph\_92 Start: 56862, Stop: 57341, Start Num: 32

Candidate Starts for Zeph\_92:

(Start: 32 @56862 has 31 MA's), (42, 56922), (54, 56982), (64, 57033), (67, 57051), (84, 57150), (91, 57168), (92, 57174), (104, 57234), (105, 57249), (107, 57261), (111, 57282),