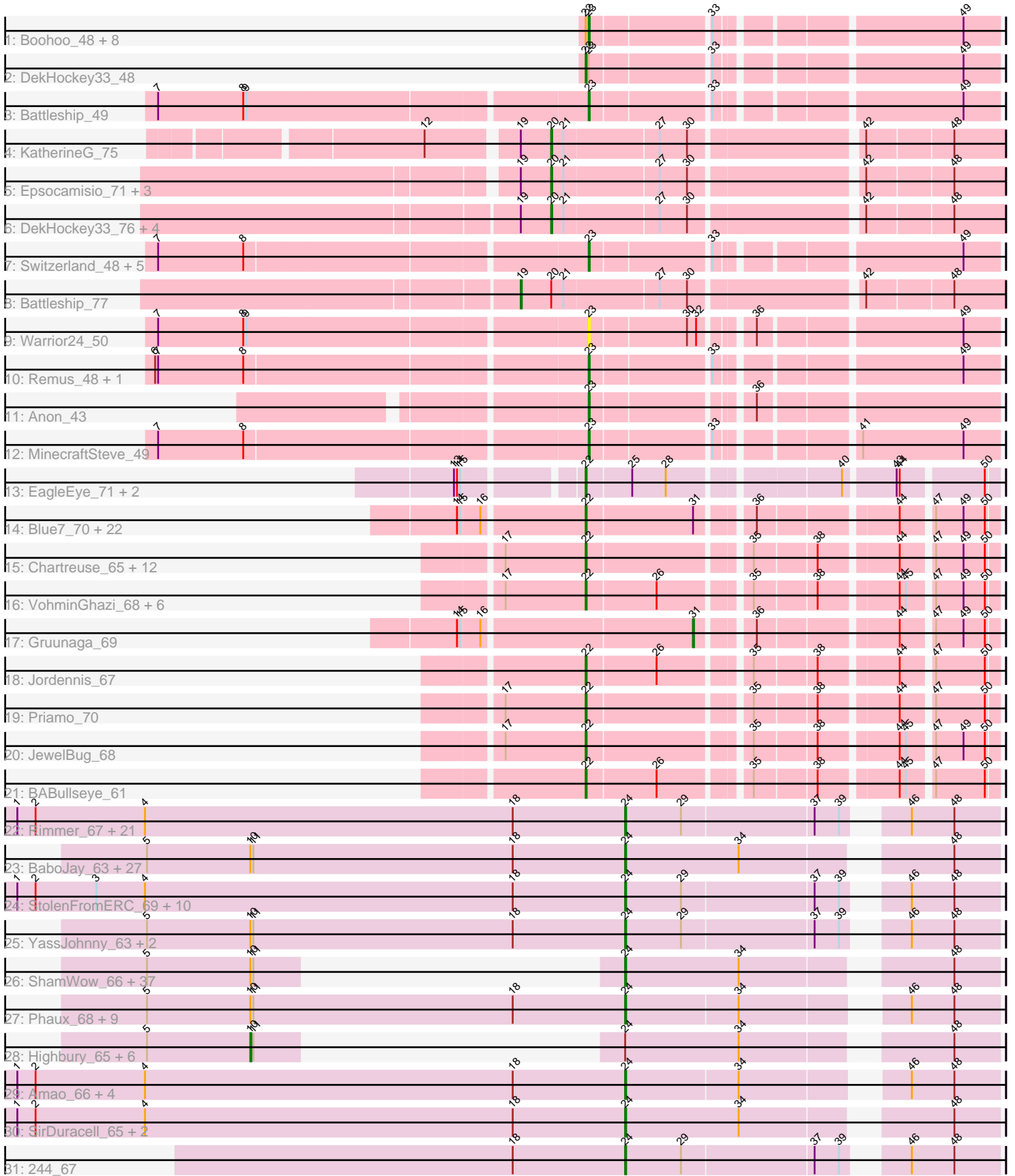


Pham 224290



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 224290 Report

This analysis was run 03/28/25 on database version 593.

Pham number 224290 has 212 members, 19 are drafts.

Phages represented in each track:

- Track 1 : Boohoo\_48, ShayRa\_49, Anaysia\_48, LastResort\_47, Soups\_48, Looper\_48, Nebulosus\_47, KatherineG\_49, ReMo\_47
- Track 2 : DekHockey33\_48
- Track 3 : Battleship\_49
- Track 4 : KatherineG\_75
- Track 5 : Epsocamisio\_71, Nebulosus\_72, JSwag\_74, MinecraftSteve\_75
- Track 6 : DekHockey33\_76, Rosalind\_73, ShayRa\_75, Switzerland\_74, Soups\_75
- Track 7 : Switzerland\_48, Oofda\_49, Rosalind\_47, Epsocamisio\_47, Waits\_48, JSwag\_47
- Track 8 : Battleship\_77
- Track 9 : Warrior24\_50
- Track 10 : Remus\_48, Strosahl\_48
- Track 11 : Anon\_43
- Track 12 : MinecraftSteve\_49
- Track 13 : EagleEye\_71, Lucyedi\_70, PainterBoy\_69
- Track 14 : Blue7\_70, Rifter\_69, Temprado\_70, Gladiator\_66, Tucker\_69, Hexamo\_69, Jeffabunny\_69, Hammer\_69, Lilbunny\_68, ToneTone\_66, Artemis2UCLA\_69, Yokurt\_68, WunderPhul\_69, Zulu\_70, Zaka\_69, Wiks\_68, Indra\_72, Roksolana\_70, Helmet\_70, Koko\_71, Garak\_70, BlessJoy\_68, CloudWang3\_70
- Track 15 : Chartreuse\_65, Cookiedough\_68, Polyphemus\_68, McFly\_68, Isiphiwo\_66, SuperAwesome\_68, Neeharika16\_67, GreedyLawyer\_65, Newrala\_68, Dorothea\_68, Pmask\_67, SuperCallie99\_65, DaVinci\_66
- Track 16 : VohminGhazi\_68, Kipper29\_68, Kazan\_69, Hoot\_63, EricB\_67, Candra\_66, SmellyB\_68
- Track 17 : Gruunaga\_69
- Track 18 : Jordennis\_67
- Track 19 : Priamo\_70
- Track 20 : JewelBug\_68
- Track 21 : BABullseye\_61
- Track 22 : Rimmer\_67, Quallification\_67, Marshmallow\_64, Icee\_67, Buck\_67, Cactus\_69, Glexan\_65, Kanye\_63, NelitzaMV\_64, FairyPath\_66, Tomaszewski\_61, Cookies\_63, Harella\_66, Flypotenuse\_62, Balomoji\_66, Sassay\_61, Daikon\_68, Sotrice96\_67, Pat3\_64, Myrale\_66, ShereKhan\_65, Willez\_61
- Track 23 : BaboJay\_63, OrionPax\_65, Nala\_68, Czyszczonek1\_67, RiverMonster\_66, Becksu\_65, Youngblood\_69, MPhalcon\_67, Bench\_69, Cjw1\_66, Pumpkin\_69, StormChicken\_68, Lilizi\_67, Misfit\_67, Maxxinista\_68, PhatBacter\_70, Murica\_69,

Terminus\_69, Murphy\_66, xkcd\_69, Elph10\_66, Phrux\_63, Bruin\_63, HufflyPuff\_69, Contagion\_62, FireRed\_70, Mosby\_62, MISSy\_67

- Track 24 : StolenFromERC\_69, Thimble\_68, Hoonter\_69, Gage\_68, GoldenSpark\_70, AmericanBeauty\_70, GooberAzure\_69, Gemini\_71, Kimchi\_70, Argent26\_70, Holt\_71
- Track 25 : YassJohnny\_63, Goldilocks\_69, Command613\_68
- Track 26 : ShamWow\_66, Manda\_66, MadamMonkfish\_66, StellaBean\_64, BilboSwaggins\_65, Miniwave\_61, Mindy\_65, TeardropMSU\_62, BigBubba\_66, TBrady12\_69, IHOP\_64, Easy2Say\_67, Adnama\_70, Teaspoon\_67, Toto\_64, Kostya\_66, CrystalP\_65, Lilpickle\_65, Thresher\_68, ChosenOne\_66, NoSleep\_67, Inca\_63, Stank\_69, Asriel\_65, Rakim\_67, Moldemort\_69, Emmina\_66, Tarkin\_65, Paperbeatsrock\_65, Simpliphy\_65, Elite2014\_65, ABCat\_63, SophKB\_63, Barbarian\_65, Phaja\_64, Wiggin\_68, Xandras\_65, Filch\_67
- Track 27 : Phaux\_68, Lilac\_68, Hopey\_66, Nimrod\_67, FoghornLeghorn\_60, DrDrey\_66, Policronamos\_69, Palpatine\_68, BugsBunny\_66, Petra64142\_70
- Track 28 : Highbury\_65, Dumbo\_66, Saints25\_65, Eureka\_64, Goku\_64, Pharsalus\_63, Henry\_64
- Track 29 : Amao\_66, ChotaBhai\_66, Stark\_67, HanKaySha\_66, JeTaime\_66
- Track 30 : SirDuracell\_65, DoctorDiddles\_65, Bask21\_66
- Track 31 : 244\_67

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

The start number called the most often in the published annotations is 24, it was called in 111 of the 193 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_67, ABCat\_63, Adnama\_70, Amao\_66, AmericanBeauty\_70, Argent26\_70, Asriel\_65, BaboJay\_63, Balomoji\_66, Barbarian\_65, Bask21\_66, Becksu\_65, Bench\_69, BigBubba\_66, BilboSwaggins\_65, Bruin\_63, Buck\_67, BugsBunny\_66, Cactus\_69, ChosenOne\_66, ChotaBhai\_66, Cjw1\_66, Command613\_68, Contagion\_62, Cookies\_63, CrystalP\_65, Czyszczonek1\_67, Daikon\_68, DoctorDiddles\_65, DrDrey\_66, Easy2Say\_67, Elite2014\_65, Elph10\_66, Emmina\_66, FairyPath\_66, Filch\_67, FireRed\_70, Flypotenuse\_62, FoghornLeghorn\_60, Gage\_68, Gemini\_71, Glexan\_65, GoldenSpark\_70, Goldilocks\_69, GooberAzure\_69, HanKaySha\_66, Harella\_66, Holt\_71, Hoonter\_69, Hopey\_66, HufflyPuff\_69, IHOP\_64, Icee\_67, Inca\_63, JeTaime\_66, Kanye\_63, Kimchi\_70, Kostya\_66, Lilac\_68, Lilizi\_67, Lilpickle\_65, MISSy\_67, MPhalcon\_67, MadamMonkfish\_66, Manda\_66, Marshmallow\_64, Maxxinista\_68, Mindy\_65, Miniwave\_61, Misfit\_67, Moldemort\_69, Mosby\_62, Murica\_69, Murphy\_66, Myrale\_66, Nala\_68, NelitzaMV\_64, Nimrod\_67, NoSleep\_67, OrionPax\_65, Palpatine\_68, Paperbeatsrock\_65, Pat3\_64, Petra64142\_70, Phaja\_64, PhatBacter\_70, Phaux\_68, Phrux\_63, Policronamos\_69, Pumpkin\_69, Quallification\_67, Rakim\_67, Rimmer\_67, RiverMonster\_66, Sassay\_61, ShamWow\_66, ShereKhan\_65, Simpliphy\_65, SirDuracell\_65, SophKB\_63, Sotrice96\_67, Stank\_69, Stark\_67, StellaBean\_64, StolenFromERC\_69, StormChicken\_68, TBrady12\_69, Tarkin\_65, TeardropMSU\_62, Teaspoon\_67, Terminus\_69, Thimble\_68, Thresher\_68, Tomaszewski\_61, Toto\_64, Wiggin\_68, Willez\_61, Xandras\_65, YassJohnny\_63, Youngblood\_69, xkcd\_69,

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

- Dumbo\_66, Eureka\_64, Goku\_64, Henry\_64, Highbury\_65, Pharsalus\_63, Saints25\_65,

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

- Anaysia\_48, Anon\_43, Artemis2UCLA\_69, BABullseye\_61, Battleship\_49, Battleship\_77, BlessJoy\_68, Blue7\_70, Boohoo\_48, Candra\_66, Chartreuse\_65, CloudWang3\_70, Cookiedough\_68, DaVinci\_66, DekHockey33\_48, DekHockey33\_76, Dorothea\_68, EagleEye\_71, Epsocamisio\_47, Epsocamisio\_71, EricB\_67, Garak\_70, Gladiator\_66, GreedyLawyer\_65, Gruunaga\_69, Hammer\_69, Helmet\_70, Hexamo\_69, Hoot\_63, Indra\_72, Isiphiwo\_66, JSwag\_47, JSwag\_74, Jeffabunny\_69, JewelBug\_68, Jordennis\_67, KatherineG\_49, KatherineG\_75, Kazan\_69, Kipper29\_68, Koko\_71, LastResort\_47, Lilbunny\_68, Looper\_48, Lucyedi\_70, McFly\_68, MinecraftSteve\_49, MinecraftSteve\_75, Nebulosus\_47, Nebulosus\_72, Neeharika16\_67, Newrala\_68, Oofda\_49, PainterBoy\_69, Pmask\_67, Polyphemus\_68, Priamo\_70, ReMo\_47, Remus\_48, Rifter\_69, Roksolana\_70, Rosalind\_47, Rosalind\_73, ShayRa\_49, ShayRa\_75, SmellyB\_68, Soups\_48, Soups\_75, Strosahl\_48, SuperAwesome\_68, SuperCallie99\_65, Switzerland\_48, Switzerland\_74, Temprado\_70, ToneTone\_66, Tucker\_69, VohminGhazi\_68, Waits\_48, Warrior24\_50, Wiks\_68, WunderPhul\_69, Yokurt\_68, Zaka\_69, Zulu\_70,

### Summary by start number:

Start 10:

- Found in 86 of 212 ( 40.6% ) of genes in pham
- Manual Annotations of this start: 7 of 193
- Called 8.1% of time when present
- Phage (with cluster) where this start called: Dumbo\_66 (E), Eureka\_64 (E), Goku\_64 (E), Henry\_64 (E), Highbury\_65 (E), Pharsalus\_63 (E), Saints25\_65 (E),

Start 19:

- Found in 11 of 212 ( 5.2% ) of genes in pham
- Manual Annotations of this start: 1 of 193
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Battleship\_77 (A15),

Start 20:

- Found in 11 of 212 ( 5.2% ) of genes in pham
- Manual Annotations of this start: 10 of 193
- Called 90.9% of time when present
- Phage (with cluster) where this start called: DekHockey33\_76 (A15), Epsocamisio\_71 (A15), JSwag\_74 (A15), KatherineG\_75 (A15), MinecraftSteve\_75 (A15), Nebulosus\_72 (A15), Rosalind\_73 (A15), ShayRa\_75 (A15), Soups\_75 (A15), Switzerland\_74 (A15),

Start 22:

- Found in 60 of 212 ( 28.3% ) of genes in pham
- Manual Annotations of this start: 44 of 193
- Called 85.0% of time when present
- Phage (with cluster) where this start called: Artemis2UCLA\_69 (A6), BABullseye\_61 (A6), BlessJoy\_68 (A6), Blue7\_70 (A6), Candra\_66 (A6), Chartreuse\_65 (A6), CloudWang3\_70 (A6), Cookiedough\_68 (A6), DaVinci\_66 (A6), DekHockey33\_48 (A15), Dorothea\_68 (A6), EagleEye\_71 (A16), EricB\_67 (A6), Garak\_70 (A6),

Gladiator\_66 (A6), GreedyLawyer\_65 (A6), Hammer\_69 (A6), Helmet\_70 (A6), Hexamo\_69 (A6), Hoot\_63 (A6), Indra\_72 (A6), Isiphiwo\_66 (A6), Jeffabunny\_69 (A6), JewelBug\_68 (A6), Jordennis\_67 (A6), Kazan\_69 (A6), Kipper29\_68 (A6), Koko\_71 (A6), Lilbunny\_68 (A6), Lucyedi\_70 (A16), McFly\_68 (A6), Neeharika16\_67 (A6), Newrala\_68 (A6), PainterBoy\_69 (A16), Pmask\_67 (A6), Polyphemus\_68 (A6), Priamo\_70 (A6), Rifter\_69 (A6), Roksolana\_70 (A6), SmellyB\_68 (A6), SuperAwesome\_68 (A6), SuperCallie99\_65 (A6), Temprado\_70 (A6), ToneTone\_66 (A6), Tucker\_69 (A6), VohminGhazi\_68 (A6), Wiks\_68 (A6), WunderPhul\_69 (A6), Yokurt\_68 (A6), Zaka\_69 (A6), Zulu\_70 (A6),

#### Start 23:

- Found in 22 of 212 ( 10.4% ) of genes in pham
- Manual Annotations of this start: 19 of 193
- Called 95.5% of time when present
- Phage (with cluster) where this start called: Anaysia\_48 (A15), Anon\_43 (A15), Battleship\_49 (A15), Boohoo\_48 (A15), Epsocamasio\_47 (A15), JSwag\_47 (A15), KatherineG\_49 (A15), LastResort\_47 (A15), Looper\_48 (A15), MinecraftSteve\_49 (A15), Nebulosus\_47 (A15), Oofda\_49 (A15), ReMo\_47 (A15), Remus\_48 (A15), Rosalind\_47 (A15), ShayRa\_49 (A15), Soups\_48 (A15), Strosahl\_48 (A15), Switzerland\_48 (A15), Waits\_48 (A15), Warrior24\_50 (A15),

#### Start 24:

- Found in 128 of 212 ( 60.4% ) of genes in pham
- Manual Annotations of this start: 111 of 193
- Called 94.5% of time when present
- Phage (with cluster) where this start called: 244\_67 (E), ABCat\_63 (E), Adnama\_70 (E), Amao\_66 (E), AmericanBeauty\_70 (E), Argent26\_70 (E), Asriel\_65 (E), BaboJay\_63 (E), Balomoji\_66 (E), Barbarian\_65 (E), Bask21\_66 (E), Becksu\_65 (E), Bench\_69 (E), BigBubba\_66 (E), BilboSwaggins\_65 (E), Bruin\_63 (E), Buck\_67 (E), BugsBunny\_66 (E), Cactus\_69 (E), ChosenOne\_66 (E), ChotaBhai\_66 (E), Cjw1\_66 (E), Command613\_68 (E), Contagion\_62 (E), Cookies\_63 (E), CrystalP\_65 (E), Czyszczonek\_67 (E), Daikon\_68 (E), DoctorDiddles\_65 (E), DrDrey\_66 (E), Easy2Say\_67 (E), Elite2014\_65 (E), Elph10\_66 (E), Emmina\_66 (E), FairyPath\_66 (E), Filch\_67 (E), FireRed\_70 (E), Flypotenuse\_62 (E), FoghornLeghorn\_60 (E), Gage\_68 (E), Gemini\_71 (E), Glexan\_65 (E), GoldenSpark\_70 (E), Goldilocks\_69 (E), GooberAzure\_69 (E), HanKaySha\_66 (E), Harella\_66 (E), Holt\_71 (E), Hoonter\_69 (E), Hokey\_66 (E), HufflyPuff\_69 (E), IHOP\_64 (E), Icee\_67 (E), Inca\_63 (E), JeTaime\_66 (E), Kanye\_63 (E), Kimchi\_70 (E), Kostya\_66 (E), Lilac\_68 (E), Lilizi\_67 (E), Lilpickle\_65 (E), MISSy\_67 (E), MPhalcon\_67 (E), MadamMonkfish\_66 (E), Manda\_66 (E), Marshmallow\_64 (E), Maxxinista\_68 (E), Mindy\_65 (E), Miniwave\_61 (E), Misfit\_67 (E), Moldemort\_69 (E), Mosby\_62 (E), Murica\_69 (E), Murphy\_66 (E), Myrale\_66 (E), Nala\_68 (E), NelitzaMV\_64 (E), Nimrod\_67 (E), NoSleep\_67 (E), OrionPax\_65 (E), Palpatine\_68 (E), Paperbeatsrock\_65 (E), Pat3\_64 (E), Petra64142\_70 (E), Phaja\_64 (E), PhatBacter\_70 (E), Phaux\_68 (E), Phrux\_63 (E), Policronamos\_69 (E), Pumpkin\_69 (E), Qualification\_67 (E), Rakim\_67 (E), Rimmer\_67 (E), RiverMonster\_66 (E), Sassay\_61 (E), ShamWow\_66 (E), ShereKhan\_65 (E), Simpliphy\_65 (E), SirDuracell\_65 (E), SophKB\_63 (E), Sotrice96\_67 (E), Stank\_69 (E), Stark\_67 (E), StellaBean\_64 (E), StolenFromERC\_69 (E), StormChicken\_68 (E), TBrady12\_69 (E), Tarkin\_65 (E), TeardropMSU\_62 (E), Teaspoon\_67 (E), Terminus\_69 (E), Thimble\_68 (E), Thresher\_68 (E), Tomaszewski\_61 (E), Toto\_64 (E), Wiggin\_68 (E), Willez\_61 (E), Xandras\_65 (E), YassJohnny\_63 (E), Youngblood\_69 (E), xkcd\_69 (E),

Start 31:

- Found in 24 of 212 ( 11.3% ) of genes in pham
- Manual Annotations of this start: 1 of 193
- Called 4.2% of time when present
- Phage (with cluster) where this start called: Gruunaga\_69 (A6),

### **Summary by clusters:**

There are 4 clusters represented in this pham: A15, A16, E, A6,

Info for manual annotations of cluster A15:

- Start number 19 was manually annotated 1 time for cluster A15.
- Start number 20 was manually annotated 10 times for cluster A15.
- Start number 22 was manually annotated 1 time for cluster A15.
- Start number 23 was manually annotated 19 times for cluster A15.

Info for manual annotations of cluster A16:

- Start number 22 was manually annotated 3 times for cluster A16.

Info for manual annotations of cluster A6:

- Start number 22 was manually annotated 40 times for cluster A6.
- Start number 31 was manually annotated 1 time for cluster A6.

Info for manual annotations of cluster E:

- Start number 10 was manually annotated 7 times for cluster E.
- Start number 24 was manually annotated 111 times for cluster E.

### **Gene Information:**

Gene: 244\_67 Start: 43867, Stop: 44196, Start Num: 24

Candidate Starts for 244\_67:

(18, 43756), (Start: 24 @43867 has 111 MA's), (29, 43921), (37, 44047), (39, 44071), (46, 44110), (48, 44152),

Gene: ABCat\_63 Start: 44214, Stop: 44543, Start Num: 24

Candidate Starts for ABCat\_63:

(5, 44040), (Start: 10 @44142 has 7 MA's), (11, 44145), (Start: 24 @44214 has 111 MA's), (34, 44325), (48, 44499),

Gene: Adnama\_70 Start: 44237, Stop: 44566, Start Num: 24

Candidate Starts for Adnama\_70:

(5, 44063), (Start: 10 @44165 has 7 MA's), (11, 44168), (Start: 24 @44237 has 111 MA's), (34, 44348), (48, 44522),

Gene: Amao\_66 Start: 43625, Stop: 43951, Start Num: 24

Candidate Starts for Amao\_66:

(1, 43025), (2, 43043), (4, 43151), (18, 43514), (Start: 24 @43625 has 111 MA's), (34, 43733), (46, 43865), (48, 43907),

Gene: AmericanBeauty\_70 Start: 44380, Stop: 44709, Start Num: 24

Candidate Starts for AmericanBeauty\_70:

(1, 43780), (2, 43798), (3, 43858), (4, 43906), (18, 44269), (Start: 24 @44380 has 111 MA's), (29, 44434), (37, 44560), (39, 44584), (46, 44623), (48, 44665),

Gene: Anaysia\_48 Start: 30327, Stop: 29968, Start Num: 23

Candidate Starts for Anaysia\_48:

(Start: 22 @30330 has 44 MA's), (Start: 23 @30327 has 19 MA's), (33, 30219), (49, 30003),

Gene: Anon\_43 Start: 29368, Stop: 29009, Start Num: 23

Candidate Starts for Anon\_43:

(Start: 23 @29368 has 19 MA's), (36, 29230),

Gene: Argent26\_70 Start: 44018, Stop: 44347, Start Num: 24

Candidate Starts for Argent26\_70:

(1, 43418), (2, 43436), (3, 43496), (4, 43544), (18, 43907), (Start: 24 @44018 has 111 MA's), (29, 44072), (37, 44198), (39, 44222), (46, 44261), (48, 44303),

Gene: Artemis2UCLA\_69 Start: 40044, Stop: 39688, Start Num: 22

Candidate Starts for Artemis2UCLA\_69:

(14, 40161), (15, 40158), (16, 40140), (Start: 22 @40044 has 44 MA's), (Start: 31 @39942 has 1 MA's), (36, 39897), (44, 39774), (47, 39747), (49, 39720), (50, 39699),

Gene: Asriel\_65 Start: 42574, Stop: 42903, Start Num: 24

Candidate Starts for Asriel\_65:

(5, 42400), (Start: 10 @42502 has 7 MA's), (11, 42505), (Start: 24 @42574 has 111 MA's), (34, 42685), (48, 42859),

Gene: BABullseye\_61 Start: 37712, Stop: 37356, Start Num: 22

Candidate Starts for BABullseye\_61:

(Start: 22 @37712 has 44 MA's), (26, 37646), (35, 37568), (38, 37511), (44, 37442), (45, 37436), (47, 37415), (50, 37367),

Gene: BaboJay\_63 Start: 43411, Stop: 43740, Start Num: 24

Candidate Starts for BaboJay\_63:

(5, 42940), (Start: 10 @43042 has 7 MA's), (11, 43045), (18, 43300), (Start: 24 @43411 has 111 MA's), (34, 43522), (48, 43696),

Gene: Balomoji\_66 Start: 44344, Stop: 44673, Start Num: 24

Candidate Starts for Balomoji\_66:

(1, 43744), (2, 43762), (4, 43870), (18, 44233), (Start: 24 @44344 has 111 MA's), (29, 44398), (37, 44524), (39, 44548), (46, 44587), (48, 44629),

Gene: Barbarian\_65 Start: 42574, Stop: 42903, Start Num: 24

Candidate Starts for Barbarian\_65:

(5, 42400), (Start: 10 @42502 has 7 MA's), (11, 42505), (Start: 24 @42574 has 111 MA's), (34, 42685), (48, 42859),

Gene: Bask21\_66 Start: 43185, Stop: 43514, Start Num: 24

Candidate Starts for Bask21\_66:

(1, 42585), (2, 42603), (4, 42711), (18, 43074), (Start: 24 @43185 has 111 MA's), (34, 43296), (48, 43470),

Gene: Battleship\_49 Start: 30296, Stop: 29937, Start Num: 23

Candidate Starts for Battleship\_49:

(7, 30701), (8, 30617), (9, 30614), (Start: 23 @30296 has 19 MA's), (33, 30188), (49, 29972),

Gene: Battleship\_77 Start: 41490, Stop: 41044, Start Num: 19

Candidate Starts for Battleship\_77:

(Start: 19 @41490 has 1 MA's), (Start: 20 @41460 has 10 MA's), (21, 41448), (27, 41358), (30, 41331), (42, 41175), (48, 41094),

Gene: Becksu\_65 Start: 44413, Stop: 44742, Start Num: 24

Candidate Starts for Becksu\_65:

(5, 43942), (Start: 10 @44044 has 7 MA's), (11, 44047), (18, 44302), (Start: 24 @44413 has 111 MA's), (34, 44524), (48, 44698),

Gene: Bench\_69 Start: 43848, Stop: 44213, Start Num: 24

Candidate Starts for Bench\_69:

(5, 43377), (Start: 10 @43479 has 7 MA's), (11, 43482), (18, 43737), (Start: 24 @43848 has 111 MA's), (34, 43959), (48, 44169),

Gene: BigBubba\_66 Start: 43593, Stop: 43922, Start Num: 24

Candidate Starts for BigBubba\_66:

(5, 43419), (Start: 10 @43521 has 7 MA's), (11, 43524), (Start: 24 @43593 has 111 MA's), (34, 43704), (48, 43878),

Gene: BilboSwaggins\_65 Start: 44222, Stop: 44551, Start Num: 24

Candidate Starts for BilboSwaggins\_65:

(5, 44048), (Start: 10 @44150 has 7 MA's), (11, 44153), (Start: 24 @44222 has 111 MA's), (34, 44333), (48, 44507),

Gene: BlessJoy\_68 Start: 40470, Stop: 40114, Start Num: 22

Candidate Starts for BlessJoy\_68:

(14, 40587), (15, 40584), (16, 40566), (Start: 22 @40470 has 44 MA's), (Start: 31 @40368 has 1 MA's), (36, 40323), (44, 40200), (47, 40173), (49, 40146), (50, 40125),

Gene: Blue7\_70 Start: 40172, Stop: 39816, Start Num: 22

Candidate Starts for Blue7\_70:

(14, 40289), (15, 40286), (16, 40268), (Start: 22 @40172 has 44 MA's), (Start: 31 @40070 has 1 MA's), (36, 40025), (44, 39902), (47, 39875), (49, 39848), (50, 39827),

Gene: Boohoo\_48 Start: 30327, Stop: 29968, Start Num: 23

Candidate Starts for Boohoo\_48:

(Start: 22 @30330 has 44 MA's), (Start: 23 @30327 has 19 MA's), (33, 30219), (49, 30003),

Gene: Bruin\_63 Start: 42757, Stop: 43086, Start Num: 24

Candidate Starts for Bruin\_63:

(5, 42286), (Start: 10 @42388 has 7 MA's), (11, 42391), (18, 42646), (Start: 24 @42757 has 111 MA's), (34, 42868), (48, 43042),

Gene: Buck\_67 Start: 44465, Stop: 44794, Start Num: 24

Candidate Starts for Buck\_67:

(1, 43865), (2, 43883), (4, 43991), (18, 44354), (Start: 24 @44465 has 111 MA's), (29, 44519), (37, 44645), (39, 44669), (46, 44708), (48, 44750),

Gene: BugsBunny\_66 Start: 44295, Stop: 44621, Start Num: 24

Candidate Starts for BugsBunny\_66:



(5, 43824), (Start: 10 @43926 has 7 MA's), (11, 43929), (18, 44184), (Start: 24 @44295 has 111 MA's), (34, 44403), (46, 44535), (48, 44577),

Gene: Cactus\_69 Start: 43238, Stop: 43567, Start Num: 24

Candidate Starts for Cactus\_69:

(1, 42638), (2, 42656), (4, 42764), (18, 43127), (Start: 24 @43238 has 111 MA's), (29, 43292), (37, 43418), (39, 43442), (46, 43481), (48, 43523),

Gene: Candra\_66 Start: 40076, Stop: 39720, Start Num: 22

Candidate Starts for Candra\_66:

(17, 40154), (Start: 22 @40076 has 44 MA's), (26, 40010), (35, 39932), (38, 39875), (44, 39806), (45, 39800), (47, 39779), (49, 39752), (50, 39731),

Gene: Chartreuse\_65 Start: 39392, Stop: 39036, Start Num: 22

Candidate Starts for Chartreuse\_65:

(17, 39470), (Start: 22 @39392 has 44 MA's), (35, 39248), (38, 39191), (44, 39122), (47, 39095), (49, 39068), (50, 39047),

Gene: ChosenOne\_66 Start: 43241, Stop: 43570, Start Num: 24

Candidate Starts for ChosenOne\_66:

(5, 43067), (Start: 10 @43169 has 7 MA's), (11, 43172), (Start: 24 @43241 has 111 MA's), (34, 43352), (48, 43526),

Gene: ChotaBhai\_66 Start: 43556, Stop: 43882, Start Num: 24

Candidate Starts for ChotaBhai\_66:

(1, 42956), (2, 42974), (4, 43082), (18, 43445), (Start: 24 @43556 has 111 MA's), (34, 43664), (46, 43796), (48, 43838),

Gene: Cjw1\_66 Start: 44938, Stop: 45267, Start Num: 24

Candidate Starts for Cjw1\_66:

(5, 44467), (Start: 10 @44569 has 7 MA's), (11, 44572), (18, 44827), (Start: 24 @44938 has 111 MA's), (34, 45049), (48, 45223),

Gene: CloudWang3\_70 Start: 40556, Stop: 40200, Start Num: 22

Candidate Starts for CloudWang3\_70:

(14, 40673), (15, 40670), (16, 40652), (Start: 22 @40556 has 44 MA's), (Start: 31 @40454 has 1 MA's), (36, 40409), (44, 40286), (47, 40259), (49, 40232), (50, 40211),

Gene: Command613\_68 Start: 44277, Stop: 44606, Start Num: 24

Candidate Starts for Command613\_68:

(5, 43806), (Start: 10 @43908 has 7 MA's), (11, 43911), (18, 44166), (Start: 24 @44277 has 111 MA's), (29, 44331), (37, 44457), (39, 44481), (46, 44520), (48, 44562),

Gene: Contagion\_62 Start: 43038, Stop: 43367, Start Num: 24

Candidate Starts for Contagion\_62:

(5, 42567), (Start: 10 @42669 has 7 MA's), (11, 42672), (18, 42927), (Start: 24 @43038 has 111 MA's), (34, 43149), (48, 43323),

Gene: Cookiedough\_68 Start: 40020, Stop: 39664, Start Num: 22

Candidate Starts for Cookiedough\_68:

(17, 40098), (Start: 22 @40020 has 44 MA's), (35, 39876), (38, 39819), (44, 39750), (47, 39723), (49, 39696), (50, 39675),

Gene: Cookies\_63 Start: 43407, Stop: 43736, Start Num: 24

Candidate Starts for Cookies\_63:

(1, 42807), (2, 42825), (4, 42933), (18, 43296), (Start: 24 @43407 has 111 MA's), (29, 43461), (37, 43587), (39, 43611), (46, 43650), (48, 43692),

Gene: CrystalP\_65 Start: 44222, Stop: 44551, Start Num: 24

Candidate Starts for CrystalP\_65:

(5, 44048), (Start: 10 @44150 has 7 MA's), (11, 44153), (Start: 24 @44222 has 111 MA's), (34, 44333), (48, 44507),

Gene: Czyszczone1\_67 Start: 43747, Stop: 44076, Start Num: 24

Candidate Starts for Czyszczone1\_67:

(5, 43276), (Start: 10 @43378 has 7 MA's), (11, 43381), (18, 43636), (Start: 24 @43747 has 111 MA's), (34, 43858), (48, 44032),

Gene: DaVinci\_66 Start: 39446, Stop: 39090, Start Num: 22

Candidate Starts for DaVinci\_66:

(17, 39524), (Start: 22 @39446 has 44 MA's), (35, 39302), (38, 39245), (44, 39176), (47, 39149), (49, 39122), (50, 39101),

Gene: Daikon\_68 Start: 44365, Stop: 44694, Start Num: 24

Candidate Starts for Daikon\_68:

(1, 43765), (2, 43783), (4, 43891), (18, 44254), (Start: 24 @44365 has 111 MA's), (29, 44419), (37, 44545), (39, 44569), (46, 44608), (48, 44650),

Gene: DekHockey33\_48 Start: 30545, Stop: 30183, Start Num: 22

Candidate Starts for DekHockey33\_48:

(Start: 22 @30545 has 44 MA's), (Start: 23 @30542 has 19 MA's), (33, 30434), (49, 30218),

Gene: DekHockey33\_76 Start: 41545, Stop: 41129, Start Num: 20

Candidate Starts for DekHockey33\_76:

(Start: 19 @41575 has 1 MA's), (Start: 20 @41545 has 10 MA's), (21, 41533), (27, 41443), (30, 41416), (42, 41260), (48, 41179),

Gene: DoctorDiddles\_65 Start: 43597, Stop: 43926, Start Num: 24

Candidate Starts for DoctorDiddles\_65:

(1, 42997), (2, 43015), (4, 43123), (18, 43486), (Start: 24 @43597 has 111 MA's), (34, 43708), (48, 43882),

Gene: Dorothea\_68 Start: 40018, Stop: 39662, Start Num: 22

Candidate Starts for Dorothea\_68:

(17, 40096), (Start: 22 @40018 has 44 MA's), (35, 39874), (38, 39817), (44, 39748), (47, 39721), (49, 39694), (50, 39673),

Gene: DrDrey\_66 Start: 44666, Stop: 44992, Start Num: 24

Candidate Starts for DrDrey\_66:

(5, 44195), (Start: 10 @44297 has 7 MA's), (11, 44300), (18, 44555), (Start: 24 @44666 has 111 MA's), (34, 44774), (46, 44906), (48, 44948),

Gene: Dumbo\_66 Start: 43074, Stop: 43475, Start Num: 10

Candidate Starts for Dumbo\_66:

(5, 42972), (Start: 10 @43074 has 7 MA's), (11, 43077), (Start: 24 @43146 has 111 MA's), (34, 43257), (48, 43431),

Gene: EagleEye\_71 Start: 41731, Stop: 41372, Start Num: 22

Candidate Starts for EagleEye\_71:

(13, 41836), (14, 41833), (15, 41830), (Start: 22 @41731 has 44 MA's), (25, 41689), (28, 41656), (40, 41506), (43, 41461), (44, 41458), (50, 41383),

Gene: Easy2Say\_67 Start: 44684, Stop: 45013, Start Num: 24

Candidate Starts for Easy2Say\_67:

(5, 44510), (Start: 10 @44612 has 7 MA's), (11, 44615), (Start: 24 @44684 has 111 MA's), (34, 44795), (48, 44969),

Gene: Elite2014\_65 Start: 43240, Stop: 43569, Start Num: 24

Candidate Starts for Elite2014\_65:

(5, 43066), (Start: 10 @43168 has 7 MA's), (11, 43171), (Start: 24 @43240 has 111 MA's), (34, 43351), (48, 43525),

Gene: Elph10\_66 Start: 43245, Stop: 43574, Start Num: 24

Candidate Starts for Elph10\_66:

(5, 42774), (Start: 10 @42876 has 7 MA's), (11, 42879), (18, 43134), (Start: 24 @43245 has 111 MA's), (34, 43356), (48, 43530),

Gene: Emmina\_66 Start: 43147, Stop: 43476, Start Num: 24

Candidate Starts for Emmina\_66:

(5, 42973), (Start: 10 @43075 has 7 MA's), (11, 43078), (Start: 24 @43147 has 111 MA's), (34, 43258), (48, 43432),

Gene: Epsocamisio\_71 Start: 40692, Stop: 40276, Start Num: 20

Candidate Starts for Epsocamisio\_71:

(Start: 19 @40722 has 1 MA's), (Start: 20 @40692 has 10 MA's), (21, 40680), (27, 40590), (30, 40563), (42, 40407), (48, 40326),

Gene: Epsocamisio\_47 Start: 30101, Stop: 29742, Start Num: 23

Candidate Starts for Epsocamisio\_47:

(7, 30503), (8, 30419), (Start: 23 @30101 has 19 MA's), (33, 29993), (49, 29777),

Gene: EricB\_67 Start: 40033, Stop: 39677, Start Num: 22

Candidate Starts for EricB\_67:

(17, 40111), (Start: 22 @40033 has 44 MA's), (26, 39967), (35, 39889), (38, 39832), (44, 39763), (45, 39757), (47, 39736), (49, 39709), (50, 39688),

Gene: Eureka\_64 Start: 43639, Stop: 44040, Start Num: 10

Candidate Starts for Eureka\_64:

(5, 43537), (Start: 10 @43639 has 7 MA's), (11, 43642), (Start: 24 @43711 has 111 MA's), (34, 43822), (48, 43996),

Gene: FairyPath\_66 Start: 44356, Stop: 44685, Start Num: 24

Candidate Starts for FairyPath\_66:

(1, 43756), (2, 43774), (4, 43882), (18, 44245), (Start: 24 @44356 has 111 MA's), (29, 44410), (37, 44536), (39, 44560), (46, 44599), (48, 44641),

Gene: Filch\_67 Start: 43172, Stop: 43501, Start Num: 24

Candidate Starts for Filch\_67:

(5, 42998), (Start: 10 @43100 has 7 MA's), (11, 43103), (Start: 24 @43172 has 111 MA's), (34, 43283), (48, 43457),

Gene: FireRed\_70 Start: 44734, Stop: 45063, Start Num: 24

Candidate Starts for FireRed\_70:

(5, 44263), (Start: 10 @44365 has 7 MA's), (11, 44368), (18, 44623), (Start: 24 @44734 has 111 MA's), (34, 44845), (48, 45019),

Gene: Flypotenuse\_62 Start: 43228, Stop: 43557, Start Num: 24

Candidate Starts for Flypotenuse\_62:

(1, 42628), (2, 42646), (4, 42754), (18, 43117), (Start: 24 @43228 has 111 MA's), (29, 43282), (37, 43408), (39, 43432), (46, 43471), (48, 43513),

Gene: FoghornLeghorn\_60 Start: 42241, Stop: 42567, Start Num: 24

Candidate Starts for FoghornLeghorn\_60:

(5, 41770), (Start: 10 @41872 has 7 MA's), (11, 41875), (18, 42130), (Start: 24 @42241 has 111 MA's), (34, 42349), (46, 42481), (48, 42523),

Gene: Gage\_68 Start: 44018, Stop: 44347, Start Num: 24

Candidate Starts for Gage\_68:

(1, 43418), (2, 43436), (3, 43496), (4, 43544), (18, 43907), (Start: 24 @44018 has 111 MA's), (29, 44072), (37, 44198), (39, 44222), (46, 44261), (48, 44303),

Gene: Garak\_70 Start: 40411, Stop: 40055, Start Num: 22

Candidate Starts for Garak\_70:

(14, 40528), (15, 40525), (16, 40507), (Start: 22 @40411 has 44 MA's), (Start: 31 @40309 has 1 MA's), (36, 40264), (44, 40141), (47, 40114), (49, 40087), (50, 40066),

Gene: Gemini\_71 Start: 44535, Stop: 44864, Start Num: 24

Candidate Starts for Gemini\_71:

(1, 43935), (2, 43953), (3, 44013), (4, 44061), (18, 44424), (Start: 24 @44535 has 111 MA's), (29, 44589), (37, 44715), (39, 44739), (46, 44778), (48, 44820),

Gene: Gladiator\_66 Start: 39636, Stop: 39280, Start Num: 22

Candidate Starts for Gladiator\_66:

(14, 39753), (15, 39750), (16, 39732), (Start: 22 @39636 has 44 MA's), (Start: 31 @39534 has 1 MA's), (36, 39489), (44, 39366), (47, 39339), (49, 39312), (50, 39291),

Gene: Glexan\_65 Start: 44355, Stop: 44684, Start Num: 24

Candidate Starts for Glexan\_65:

(1, 43755), (2, 43773), (4, 43881), (18, 44244), (Start: 24 @44355 has 111 MA's), (29, 44409), (37, 44535), (39, 44559), (46, 44598), (48, 44640),

Gene: Goku\_64 Start: 43368, Stop: 43769, Start Num: 10

Candidate Starts for Goku\_64:

(5, 43266), (Start: 10 @43368 has 7 MA's), (11, 43371), (Start: 24 @43440 has 111 MA's), (34, 43551), (48, 43725),

Gene: GoldenSpark\_70 Start: 44018, Stop: 44347, Start Num: 24

Candidate Starts for GoldenSpark\_70:

(1, 43418), (2, 43436), (3, 43496), (4, 43544), (18, 43907), (Start: 24 @44018 has 111 MA's), (29, 44072), (37, 44198), (39, 44222), (46, 44261), (48, 44303),

Gene: Goldilocks\_69 Start: 43519, Stop: 43848, Start Num: 24

Candidate Starts for Goldilocks\_69:

(5, 43048), (Start: 10 @43150 has 7 MA's), (11, 43153), (18, 43408), (Start: 24 @43519 has 111 MA's), (29, 43573), (37, 43699), (39, 43723), (46, 43762), (48, 43804),

Gene: GooberAzure\_69 Start: 44018, Stop: 44347, Start Num: 24

Candidate Starts for GooberAzure\_69:

(1, 43418), (2, 43436), (3, 43496), (4, 43544), (18, 43907), (Start: 24 @44018 has 111 MA's), (29, 44072), (37, 44198), (39, 44222), (46, 44261), (48, 44303),

Gene: GreedyLawyer\_65 Start: 40006, Stop: 39650, Start Num: 22

Candidate Starts for GreedyLawyer\_65:

(17, 40084), (Start: 22 @40006 has 44 MA's), (35, 39862), (38, 39805), (44, 39736), (47, 39709), (49, 39682), (50, 39661),

Gene: Gruunaga\_69 Start: 40267, Stop: 40013, Start Num: 31

Candidate Starts for Gruunaga\_69:

(14, 40486), (15, 40483), (16, 40465), (Start: 31 @40267 has 1 MA's), (36, 40222), (44, 40099), (47, 40072), (49, 40045), (50, 40024),

Gene: Hammer\_69 Start: 39976, Stop: 39620, Start Num: 22

Candidate Starts for Hammer\_69:

(14, 40093), (15, 40090), (16, 40072), (Start: 22 @39976 has 44 MA's), (Start: 31 @39874 has 1 MA's), (36, 39829), (44, 39706), (47, 39679), (49, 39652), (50, 39631),

Gene: HanKaySha\_66 Start: 43328, Stop: 43654, Start Num: 24

Candidate Starts for HanKaySha\_66:

(1, 42728), (2, 42746), (4, 42854), (18, 43217), (Start: 24 @43328 has 111 MA's), (34, 43436), (46, 43568), (48, 43610),

Gene: Harella\_66 Start: 44871, Stop: 45200, Start Num: 24

Candidate Starts for Harella\_66:

(1, 44271), (2, 44289), (4, 44397), (18, 44760), (Start: 24 @44871 has 111 MA's), (29, 44925), (37, 45051), (39, 45075), (46, 45114), (48, 45156),

Gene: Helmet\_70 Start: 40411, Stop: 40055, Start Num: 22

Candidate Starts for Helmet\_70:

(14, 40528), (15, 40525), (16, 40507), (Start: 22 @40411 has 44 MA's), (Start: 31 @40309 has 1 MA's), (36, 40264), (44, 40141), (47, 40114), (49, 40087), (50, 40066),

Gene: Henry\_64 Start: 43590, Stop: 43991, Start Num: 10

Candidate Starts for Henry\_64:

(5, 43488), (Start: 10 @43590 has 7 MA's), (11, 43593), (Start: 24 @43662 has 111 MA's), (34, 43773), (48, 43947),

Gene: Hexamo\_69 Start: 40041, Stop: 39685, Start Num: 22

Candidate Starts for Hexamo\_69:

(14, 40158), (15, 40155), (16, 40137), (Start: 22 @40041 has 44 MA's), (Start: 31 @39939 has 1 MA's), (36, 39894), (44, 39771), (47, 39744), (49, 39717), (50, 39696),

Gene: Highbury\_65 Start: 43241, Stop: 43642, Start Num: 10

Candidate Starts for Highbury\_65:

(5, 43139), (Start: 10 @43241 has 7 MA's), (11, 43244), (Start: 24 @43313 has 111 MA's), (34, 43424), (48, 43598),

Gene: Holt\_71 Start: 44432, Stop: 44761, Start Num: 24

Candidate Starts for Holt\_71:

(1, 43832), (2, 43850), (3, 43910), (4, 43958), (18, 44321), (Start: 24 @44432 has 111 MA's), (29, 44486), (37, 44612), (39, 44636), (46, 44675), (48, 44717),

Gene: Hoonter\_69 Start: 44018, Stop: 44347, Start Num: 24

Candidate Starts for Hoonter\_69:

(1, 43418), (2, 43436), (3, 43496), (4, 43544), (18, 43907), (Start: 24 @44018 has 111 MA's), (29, 44072), (37, 44198), (39, 44222), (46, 44261), (48, 44303),

Gene: Hoot\_63 Start: 37891, Stop: 37535, Start Num: 22

Candidate Starts for Hoot\_63:

(17, 37969), (Start: 22 @37891 has 44 MA's), (26, 37825), (35, 37747), (38, 37690), (44, 37621), (45, 37615), (47, 37594), (49, 37567), (50, 37546),

Gene: Hokey\_66 Start: 43860, Stop: 44186, Start Num: 24

Candidate Starts for Hokey\_66:

(5, 43389), (Start: 10 @43491 has 7 MA's), (11, 43494), (18, 43749), (Start: 24 @43860 has 111 MA's), (34, 43968), (46, 44100), (48, 44142),

Gene: HufflyPuff\_69 Start: 44690, Stop: 45019, Start Num: 24

Candidate Starts for HufflyPuff\_69:

(5, 44219), (Start: 10 @44321 has 7 MA's), (11, 44324), (18, 44579), (Start: 24 @44690 has 111 MA's), (34, 44801), (48, 44975),

Gene: IHOP\_64 Start: 43786, Stop: 44115, Start Num: 24

Candidate Starts for IHOP\_64:

(5, 43612), (Start: 10 @43714 has 7 MA's), (11, 43717), (Start: 24 @43786 has 111 MA's), (34, 43897), (48, 44071),

Gene: Icee\_67 Start: 43685, Stop: 44014, Start Num: 24

Candidate Starts for Icee\_67:

(1, 43085), (2, 43103), (4, 43211), (18, 43574), (Start: 24 @43685 has 111 MA's), (29, 43739), (37, 43865), (39, 43889), (46, 43928), (48, 43970),

Gene: Inca\_63 Start: 42311, Stop: 42640, Start Num: 24

Candidate Starts for Inca\_63:

(5, 42137), (Start: 10 @42239 has 7 MA's), (11, 42242), (Start: 24 @42311 has 111 MA's), (34, 42422), (48, 42596),

Gene: Indra\_72 Start: 40412, Stop: 40056, Start Num: 22

Candidate Starts for Indra\_72:

(14, 40529), (15, 40526), (16, 40508), (Start: 22 @40412 has 44 MA's), (Start: 31 @40310 has 1 MA's), (36, 40265), (44, 40142), (47, 40115), (49, 40088), (50, 40067),

Gene: Isiphiwo\_66 Start: 39572, Stop: 39216, Start Num: 22

Candidate Starts for Isiphiwo\_66:

(17, 39650), (Start: 22 @39572 has 44 MA's), (35, 39428), (38, 39371), (44, 39302), (47, 39275), (49, 39248), (50, 39227),

Gene: JSwag\_74 Start: 40977, Stop: 40561, Start Num: 20  
Candidate Starts for JSwag\_74:  
(Start: 19 @41007 has 1 MA's), (Start: 20 @40977 has 10 MA's), (21, 40965), (27, 40875), (30, 40848),  
(42, 40692), (48, 40611),

Gene: JSwag\_47 Start: 30039, Stop: 29680, Start Num: 23  
Candidate Starts for JSwag\_47:  
(7, 30441), (8, 30357), (Start: 23 @30039 has 19 MA's), (33, 29931), (49, 29715),

Gene: JeTaime\_66 Start: 44512, Stop: 44838, Start Num: 24  
Candidate Starts for JeTaime\_66:  
(1, 43912), (2, 43930), (4, 44038), (18, 44401), (Start: 24 @44512 has 111 MA's), (34, 44620), (46,  
44752), (48, 44794),

Gene: Jeffabunny\_69 Start: 40038, Stop: 39682, Start Num: 22  
Candidate Starts for Jeffabunny\_69:  
(14, 40155), (15, 40152), (16, 40134), (Start: 22 @40038 has 44 MA's), (Start: 31 @39936 has 1 MA's),  
(36, 39891), (44, 39768), (47, 39741), (49, 39714), (50, 39693),

Gene: JewelBug\_68 Start: 40312, Stop: 39956, Start Num: 22  
Candidate Starts for JewelBug\_68:  
(17, 40390), (Start: 22 @40312 has 44 MA's), (35, 40168), (38, 40111), (44, 40042), (45, 40036), (47,  
40015), (49, 39988), (50, 39967),

Gene: Jordennis\_67 Start: 39793, Stop: 39437, Start Num: 22  
Candidate Starts for Jordennis\_67:  
(Start: 22 @39793 has 44 MA's), (26, 39727), (35, 39649), (38, 39592), (44, 39523), (47, 39496), (50,  
39448),

Gene: Kanye\_63 Start: 43367, Stop: 43696, Start Num: 24  
Candidate Starts for Kanye\_63:  
(1, 42767), (2, 42785), (4, 42893), (18, 43256), (Start: 24 @43367 has 111 MA's), (29, 43421), (37,  
43547), (39, 43571), (46, 43610), (48, 43652),

Gene: KatherineG\_75 Start: 41450, Stop: 41034, Start Num: 20  
Candidate Starts for KatherineG\_75:  
(12, 41561), (Start: 19 @41480 has 1 MA's), (Start: 20 @41450 has 10 MA's), (21, 41438), (27, 41348),  
(30, 41321), (42, 41165), (48, 41084),

Gene: KatherineG\_49 Start: 30542, Stop: 30183, Start Num: 23  
Candidate Starts for KatherineG\_49:  
(Start: 22 @30545 has 44 MA's), (Start: 23 @30542 has 19 MA's), (33, 30434), (49, 30218),

Gene: Kazan\_69 Start: 40046, Stop: 39690, Start Num: 22  
Candidate Starts for Kazan\_69:  
(17, 40124), (Start: 22 @40046 has 44 MA's), (26, 39980), (35, 39902), (38, 39845), (44, 39776), (45,  
39770), (47, 39749), (49, 39722), (50, 39701),

Gene: Kimchi\_70 Start: 44021, Stop: 44350, Start Num: 24  
Candidate Starts for Kimchi\_70:  
(1, 43421), (2, 43439), (3, 43499), (4, 43547), (18, 43910), (Start: 24 @44021 has 111 MA's), (29,  
44075), (37, 44201), (39, 44225), (46, 44264), (48, 44306),

Gene: Kipper29\_68 Start: 40059, Stop: 39703, Start Num: 22

Candidate Starts for Kipper29\_68:

(17, 40137), (Start: 22 @40059 has 44 MA's), (26, 39993), (35, 39915), (38, 39858), (44, 39789), (45, 39783), (47, 39762), (49, 39735), (50, 39714),

Gene: Koko\_71 Start: 40896, Stop: 40540, Start Num: 22

Candidate Starts for Koko\_71:

(14, 41013), (15, 41010), (16, 40992), (Start: 22 @40896 has 44 MA's), (Start: 31 @40794 has 1 MA's), (36, 40749), (44, 40626), (47, 40599), (49, 40572), (50, 40551),

Gene: Kostya\_66 Start: 43885, Stop: 44214, Start Num: 24

Candidate Starts for Kostya\_66:

(5, 43711), (Start: 10 @43813 has 7 MA's), (11, 43816), (Start: 24 @43885 has 111 MA's), (34, 43996), (48, 44170),

Gene: LastResort\_47 Start: 30103, Stop: 29744, Start Num: 23

Candidate Starts for LastResort\_47:

(Start: 22 @30106 has 44 MA's), (Start: 23 @30103 has 19 MA's), (33, 29995), (49, 29779),

Gene: Lilac\_68 Start: 43645, Stop: 43971, Start Num: 24

Candidate Starts for Lilac\_68:

(5, 43174), (Start: 10 @43276 has 7 MA's), (11, 43279), (18, 43534), (Start: 24 @43645 has 111 MA's), (34, 43753), (46, 43885), (48, 43927),

Gene: Lilbunny\_68 Start: 40042, Stop: 39686, Start Num: 22

Candidate Starts for Lilbunny\_68:

(14, 40159), (15, 40156), (16, 40138), (Start: 22 @40042 has 44 MA's), (Start: 31 @39940 has 1 MA's), (36, 39895), (44, 39772), (47, 39745), (49, 39718), (50, 39697),

Gene: Lilizi\_67 Start: 43319, Stop: 43684, Start Num: 24

Candidate Starts for Lilizi\_67:

(5, 42848), (Start: 10 @42950 has 7 MA's), (11, 42953), (18, 43208), (Start: 24 @43319 has 111 MA's), (34, 43430), (48, 43640),

Gene: Lilpickle\_65 Start: 43240, Stop: 43569, Start Num: 24

Candidate Starts for Lilpickle\_65:

(5, 43066), (Start: 10 @43168 has 7 MA's), (11, 43171), (Start: 24 @43240 has 111 MA's), (34, 43351), (48, 43525),

Gene: Looper\_48 Start: 30080, Stop: 29721, Start Num: 23

Candidate Starts for Looper\_48:

(Start: 22 @30083 has 44 MA's), (Start: 23 @30080 has 19 MA's), (33, 29972), (49, 29756),

Gene: Lucyedi\_70 Start: 41927, Stop: 41568, Start Num: 22

Candidate Starts for Lucyedi\_70:

(13, 42032), (14, 42029), (15, 42026), (Start: 22 @41927 has 44 MA's), (25, 41885), (28, 41852), (40, 41702), (43, 41657), (44, 41654), (50, 41579),

Gene: MISSy\_67 Start: 43743, Stop: 44072, Start Num: 24

Candidate Starts for MISSy\_67:

(5, 43272), (Start: 10 @43374 has 7 MA's), (11, 43377), (18, 43632), (Start: 24 @43743 has 111 MA's), (34, 43854), (48, 44028),



Gene: MPhalcon\_67 Start: 43736, Stop: 44065, Start Num: 24

Candidate Starts for MPhalcon\_67:

(5, 43265), (Start: 10 @43367 has 7 MA's), (11, 43370), (18, 43625), (Start: 24 @43736 has 111 MA's), (34, 43847), (48, 44021),

Gene: MadamMonkfish\_66 Start: 42964, Stop: 43293, Start Num: 24

Candidate Starts for MadamMonkfish\_66:

(5, 42790), (Start: 10 @42892 has 7 MA's), (11, 42895), (Start: 24 @42964 has 111 MA's), (34, 43075), (48, 43249),

Gene: Manda\_66 Start: 44245, Stop: 44574, Start Num: 24

Candidate Starts for Manda\_66:

(5, 44071), (Start: 10 @44173 has 7 MA's), (11, 44176), (Start: 24 @44245 has 111 MA's), (34, 44356), (48, 44530),

Gene: Marshmallow\_64 Start: 44513, Stop: 44842, Start Num: 24

Candidate Starts for Marshmallow\_64:

(1, 43913), (2, 43931), (4, 44039), (18, 44402), (Start: 24 @44513 has 111 MA's), (29, 44567), (37, 44693), (39, 44717), (46, 44756), (48, 44798),

Gene: Maxxinista\_68 Start: 43615, Stop: 43944, Start Num: 24

Candidate Starts for Maxxinista\_68:

(5, 43144), (Start: 10 @43246 has 7 MA's), (11, 43249), (18, 43504), (Start: 24 @43615 has 111 MA's), (34, 43726), (48, 43900),

Gene: McFly\_68 Start: 40005, Stop: 39649, Start Num: 22

Candidate Starts for McFly\_68:

(17, 40083), (Start: 22 @40005 has 44 MA's), (35, 39861), (38, 39804), (44, 39735), (47, 39708), (49, 39681), (50, 39660),

Gene: Mindy\_65 Start: 42828, Stop: 43157, Start Num: 24

Candidate Starts for Mindy\_65:

(5, 42654), (Start: 10 @42756 has 7 MA's), (11, 42759), (Start: 24 @42828 has 111 MA's), (34, 42939), (48, 43113),

Gene: MinecraftSteve\_75 Start: 41265, Stop: 40849, Start Num: 20

Candidate Starts for MinecraftSteve\_75:

(Start: 19 @41295 has 1 MA's), (Start: 20 @41265 has 10 MA's), (21, 41253), (27, 41163), (30, 41136), (42, 40980), (48, 40899),

Gene: MinecraftSteve\_49 Start: 30303, Stop: 29944, Start Num: 23

Candidate Starts for MinecraftSteve\_49:

(7, 30705), (8, 30621), (Start: 23 @30303 has 19 MA's), (33, 30195), (41, 30078), (49, 29979),

Gene: Miniwave\_61 Start: 43281, Stop: 43610, Start Num: 24

Candidate Starts for Miniwave\_61:

(5, 43107), (Start: 10 @43209 has 7 MA's), (11, 43212), (Start: 24 @43281 has 111 MA's), (34, 43392), (48, 43566),

Gene: Misfit\_67 Start: 44755, Stop: 45084, Start Num: 24

Candidate Starts for Misfit\_67:

(5, 44284), (Start: 10 @44386 has 7 MA's), (11, 44389), (18, 44644), (Start: 24 @44755 has 111 MA's), (34, 44866), (48, 45040),

Gene: Moldemort\_69 Start: 43837, Stop: 44166, Start Num: 24

Candidate Starts for Moldemort\_69:

(5, 43663), (Start: 10 @43765 has 7 MA's), (11, 43768), (Start: 24 @43837 has 111 MA's), (34, 43948), (48, 44122),

Gene: Mosby\_62 Start: 43038, Stop: 43367, Start Num: 24

Candidate Starts for Mosby\_62:

(5, 42567), (Start: 10 @42669 has 7 MA's), (11, 42672), (18, 42927), (Start: 24 @43038 has 111 MA's), (34, 43149), (48, 43323),

Gene: Murica\_69 Start: 44690, Stop: 45019, Start Num: 24

Candidate Starts for Murica\_69:

(5, 44219), (Start: 10 @44321 has 7 MA's), (11, 44324), (18, 44579), (Start: 24 @44690 has 111 MA's), (34, 44801), (48, 44975),

Gene: Murphy\_66 Start: 44127, Stop: 44456, Start Num: 24

Candidate Starts for Murphy\_66:

(5, 43656), (Start: 10 @43758 has 7 MA's), (11, 43761), (18, 44016), (Start: 24 @44127 has 111 MA's), (34, 44238), (48, 44412),

Gene: Myrale\_66 Start: 44378, Stop: 44707, Start Num: 24

Candidate Starts for Myrale\_66:

(1, 43778), (2, 43796), (4, 43904), (18, 44267), (Start: 24 @44378 has 111 MA's), (29, 44432), (37, 44558), (39, 44582), (46, 44621), (48, 44663),

Gene: Nala\_68 Start: 44248, Stop: 44577, Start Num: 24

Candidate Starts for Nala\_68:

(5, 43777), (Start: 10 @43879 has 7 MA's), (11, 43882), (18, 44137), (Start: 24 @44248 has 111 MA's), (34, 44359), (48, 44533),

Gene: Nebulosus\_72 Start: 40929, Stop: 40513, Start Num: 20

Candidate Starts for Nebulosus\_72:

(Start: 19 @40959 has 1 MA's), (Start: 20 @40929 has 10 MA's), (21, 40917), (27, 40827), (30, 40800), (42, 40644), (48, 40563),

Gene: Nebulosus\_47 Start: 30099, Stop: 29740, Start Num: 23

Candidate Starts for Nebulosus\_47:

(Start: 22 @30102 has 44 MA's), (Start: 23 @30099 has 19 MA's), (33, 29991), (49, 29775),

Gene: Neeharika16\_67 Start: 39472, Stop: 39116, Start Num: 22

Candidate Starts for Neeharika16\_67:

(17, 39550), (Start: 22 @39472 has 44 MA's), (35, 39328), (38, 39271), (44, 39202), (47, 39175), (49, 39148), (50, 39127),

Gene: NelitzaMV\_64 Start: 43327, Stop: 43656, Start Num: 24

Candidate Starts for NelitzaMV\_64:

(1, 42727), (2, 42745), (4, 42853), (18, 43216), (Start: 24 @43327 has 111 MA's), (29, 43381), (37, 43507), (39, 43531), (46, 43570), (48, 43612),

Gene: Newrala\_68 Start: 40007, Stop: 39651, Start Num: 22

Candidate Starts for Newrala\_68:

(17, 40085), (Start: 22 @40007 has 44 MA's), (35, 39863), (38, 39806), (44, 39737), (47, 39710), (49, 39683), (50, 39662),

Gene: Nimrod\_67 Start: 44948, Stop: 45274, Start Num: 24

Candidate Starts for Nimrod\_67:

(5, 44477), (Start: 10 @44579 has 7 MA's), (11, 44582), (18, 44837), (Start: 24 @44948 has 111 MA's), (34, 45056), (46, 45188), (48, 45230),

Gene: NoSleep\_67 Start: 43585, Stop: 43914, Start Num: 24

Candidate Starts for NoSleep\_67:

(5, 43411), (Start: 10 @43513 has 7 MA's), (11, 43516), (Start: 24 @43585 has 111 MA's), (34, 43696), (48, 43870),

Gene: Oofda\_49 Start: 30194, Stop: 29835, Start Num: 23

Candidate Starts for Oofda\_49:

(7, 30596), (8, 30512), (Start: 23 @30194 has 19 MA's), (33, 30086), (49, 29870),

Gene: OrionPax\_65 Start: 43333, Stop: 43662, Start Num: 24

Candidate Starts for OrionPax\_65:

(5, 42862), (Start: 10 @42964 has 7 MA's), (11, 42967), (18, 43222), (Start: 24 @43333 has 111 MA's), (34, 43444), (48, 43618),

Gene: PainterBoy\_69 Start: 41636, Stop: 41277, Start Num: 22

Candidate Starts for PainterBoy\_69:

(13, 41741), (14, 41738), (15, 41735), (Start: 22 @41636 has 44 MA's), (25, 41594), (28, 41561), (40, 41411), (43, 41366), (44, 41363), (50, 41288),

Gene: Palpatine\_68 Start: 44720, Stop: 45046, Start Num: 24

Candidate Starts for Palpatine\_68:

(5, 44249), (Start: 10 @44351 has 7 MA's), (11, 44354), (18, 44609), (Start: 24 @44720 has 111 MA's), (34, 44828), (46, 44960), (48, 45002),

Gene: Paperbeatsrock\_65 Start: 43959, Stop: 44288, Start Num: 24

Candidate Starts for Paperbeatsrock\_65:

(5, 43785), (Start: 10 @43887 has 7 MA's), (11, 43890), (Start: 24 @43959 has 111 MA's), (34, 44070), (48, 44244),

Gene: Pat3\_64 Start: 42482, Stop: 42811, Start Num: 24

Candidate Starts for Pat3\_64:

(1, 41882), (2, 41900), (4, 42008), (18, 42371), (Start: 24 @42482 has 111 MA's), (29, 42536), (37, 42662), (39, 42686), (46, 42725), (48, 42767),

Gene: Petra64142\_70 Start: 45184, Stop: 45510, Start Num: 24

Candidate Starts for Petra64142\_70:

(5, 44713), (Start: 10 @44815 has 7 MA's), (11, 44818), (18, 45073), (Start: 24 @45184 has 111 MA's), (34, 45292), (46, 45424), (48, 45466),

Gene: Phaja\_64 Start: 43785, Stop: 44114, Start Num: 24

Candidate Starts for Phaja\_64:

(5, 43611), (Start: 10 @43713 has 7 MA's), (11, 43716), (Start: 24 @43785 has 111 MA's), (34, 43896), (48, 44070),

Gene: Pharsalus\_63 Start: 43687, Stop: 44088, Start Num: 10

Candidate Starts for Pharsalus\_63:

(5, 43585), (Start: 10 @43687 has 7 MA's), (11, 43690), (Start: 24 @43759 has 111 MA's), (34, 43870), (48, 44044),

Gene: PhatBacter\_70 Start: 44734, Stop: 45063, Start Num: 24

Candidate Starts for PhatBacter\_70:

(5, 44263), (Start: 10 @44365 has 7 MA's), (11, 44368), (18, 44623), (Start: 24 @44734 has 111 MA's), (34, 44845), (48, 45019),

Gene: Phaux\_68 Start: 44732, Stop: 45058, Start Num: 24

Candidate Starts for Phaux\_68:

(5, 44261), (Start: 10 @44363 has 7 MA's), (11, 44366), (18, 44621), (Start: 24 @44732 has 111 MA's), (34, 44840), (46, 44972), (48, 45014),

Gene: Phrux\_63 Start: 43325, Stop: 43654, Start Num: 24

Candidate Starts for Phrux\_63:

(5, 42854), (Start: 10 @42956 has 7 MA's), (11, 42959), (18, 43214), (Start: 24 @43325 has 111 MA's), (34, 43436), (48, 43610),

Gene: Pmask\_67 Start: 40008, Stop: 39652, Start Num: 22

Candidate Starts for Pmask\_67:

(17, 40086), (Start: 22 @40008 has 44 MA's), (35, 39864), (38, 39807), (44, 39738), (47, 39711), (49, 39684), (50, 39663),

Gene: Policronamos\_69 Start: 44732, Stop: 45058, Start Num: 24

Candidate Starts for Policronamos\_69:

(5, 44261), (Start: 10 @44363 has 7 MA's), (11, 44366), (18, 44621), (Start: 24 @44732 has 111 MA's), (34, 44840), (46, 44972), (48, 45014),

Gene: Polyphemus\_68 Start: 40393, Stop: 40037, Start Num: 22

Candidate Starts for Polyphemus\_68:

(17, 40471), (Start: 22 @40393 has 44 MA's), (35, 40249), (38, 40192), (44, 40123), (47, 40096), (49, 40069), (50, 40048),

Gene: Priamo\_70 Start: 39859, Stop: 39503, Start Num: 22

Candidate Starts for Priamo\_70:

(17, 39937), (Start: 22 @39859 has 44 MA's), (35, 39715), (38, 39658), (44, 39589), (47, 39562), (50, 39514),

Gene: Pumpkin\_69 Start: 44383, Stop: 44712, Start Num: 24

Candidate Starts for Pumpkin\_69:

(5, 43912), (Start: 10 @44014 has 7 MA's), (11, 44017), (18, 44272), (Start: 24 @44383 has 111 MA's), (34, 44494), (48, 44668),

Gene: Quallification\_67 Start: 44367, Stop: 44696, Start Num: 24

Candidate Starts for Quallification\_67:

(1, 43767), (2, 43785), (4, 43893), (18, 44256), (Start: 24 @44367 has 111 MA's), (29, 44421), (37, 44547), (39, 44571), (46, 44610), (48, 44652),

Gene: Rakim\_67 Start: 43836, Stop: 44165, Start Num: 24

Candidate Starts for Rakim\_67:

(5, 43662), (Start: 10 @43764 has 7 MA's), (11, 43767), (Start: 24 @43836 has 111 MA's), (34, 43947), (48, 44121),

Gene: ReMo\_47 Start: 30100, Stop: 29741, Start Num: 23

Candidate Starts for ReMo\_47:

(Start: 22 @30103 has 44 MA's), (Start: 23 @30100 has 19 MA's), (33, 29992), (49, 29776),

Gene: Remus\_48 Start: 30019, Stop: 29660, Start Num: 23

Candidate Starts for Remus\_48:

(6, 30424), (7, 30421), (8, 30337), (Start: 23 @30019 has 19 MA's), (33, 29911), (49, 29695),

Gene: Rifter\_69 Start: 39572, Stop: 39216, Start Num: 22

Candidate Starts for Rifter\_69:

(14, 39689), (15, 39686), (16, 39668), (Start: 22 @39572 has 44 MA's), (Start: 31 @39470 has 1 MA's), (36, 39425), (44, 39302), (47, 39275), (49, 39248), (50, 39227),

Gene: Rimmer\_67 Start: 44075, Stop: 44404, Start Num: 24

Candidate Starts for Rimmer\_67:

(1, 43475), (2, 43493), (4, 43601), (18, 43964), (Start: 24 @44075 has 111 MA's), (29, 44129), (37, 44255), (39, 44279), (46, 44318), (48, 44360),

Gene: RiverMonster\_66 Start: 43903, Stop: 44232, Start Num: 24

Candidate Starts for RiverMonster\_66:

(5, 43432), (Start: 10 @43534 has 7 MA's), (11, 43537), (18, 43792), (Start: 24 @43903 has 111 MA's), (34, 44014), (48, 44188),

Gene: Roksolana\_70 Start: 40406, Stop: 40050, Start Num: 22

Candidate Starts for Roksolana\_70:

(14, 40523), (15, 40520), (16, 40502), (Start: 22 @40406 has 44 MA's), (Start: 31 @40304 has 1 MA's), (36, 40259), (44, 40136), (47, 40109), (49, 40082), (50, 40061),

Gene: Rosalind\_73 Start: 41184, Stop: 40768, Start Num: 20

Candidate Starts for Rosalind\_73:

(Start: 19 @41214 has 1 MA's), (Start: 20 @41184 has 10 MA's), (21, 41172), (27, 41082), (30, 41055), (42, 40899), (48, 40818),

Gene: Rosalind\_47 Start: 30222, Stop: 29863, Start Num: 23

Candidate Starts for Rosalind\_47:

(7, 30624), (8, 30540), (Start: 23 @30222 has 19 MA's), (33, 30114), (49, 29898),

Gene: Saints25\_65 Start: 43241, Stop: 43642, Start Num: 10

Candidate Starts for Saints25\_65:

(5, 43139), (Start: 10 @43241 has 7 MA's), (11, 43244), (Start: 24 @43313 has 111 MA's), (34, 43424), (48, 43598),

Gene: Sassay\_61 Start: 42000, Stop: 42329, Start Num: 24

Candidate Starts for Sassay\_61:

(1, 41400), (2, 41418), (4, 41526), (18, 41889), (Start: 24 @42000 has 111 MA's), (29, 42054), (37, 42180), (39, 42204), (46, 42243), (48, 42285),

Gene: ShamWow\_66 Start: 44222, Stop: 44551, Start Num: 24

Candidate Starts for ShamWow\_66:

(5, 44048), (Start: 10 @44150 has 7 MA's), (11, 44153), (Start: 24 @44222 has 111 MA's), (34, 44333), (48, 44507),

Gene: ShayRa\_49 Start: 30304, Stop: 29945, Start Num: 23  
Candidate Starts for ShayRa\_49:  
(Start: 22 @30307 has 44 MA's), (Start: 23 @30304 has 19 MA's), (33, 30196), (49, 29980),

Gene: ShayRa\_75 Start: 41213, Stop: 40797, Start Num: 20  
Candidate Starts for ShayRa\_75:  
(Start: 19 @41243 has 1 MA's), (Start: 20 @41213 has 10 MA's), (21, 41201), (27, 41111), (30, 41084),  
(42, 40928), (48, 40847),

Gene: ShereKhan\_65 Start: 44291, Stop: 44620, Start Num: 24  
Candidate Starts for ShereKhan\_65:  
(1, 43691), (2, 43709), (4, 43817), (18, 44180), (Start: 24 @44291 has 111 MA's), (29, 44345), (37,  
44471), (39, 44495), (46, 44534), (48, 44576),

Gene: Simpliphy\_65 Start: 43303, Stop: 43632, Start Num: 24  
Candidate Starts for Simpliphy\_65:  
(5, 43129), (Start: 10 @43231 has 7 MA's), (11, 43234), (Start: 24 @43303 has 111 MA's), (34, 43414),  
(48, 43588),

Gene: SirDuracell\_65 Start: 42574, Stop: 42903, Start Num: 24  
Candidate Starts for SirDuracell\_65:  
(1, 41974), (2, 41992), (4, 42100), (18, 42463), (Start: 24 @42574 has 111 MA's), (34, 42685), (48,  
42859),

Gene: SmellyB\_68 Start: 40040, Stop: 39684, Start Num: 22  
Candidate Starts for SmellyB\_68:  
(17, 40118), (Start: 22 @40040 has 44 MA's), (26, 39974), (35, 39896), (38, 39839), (44, 39770), (45,  
39764), (47, 39743), (49, 39716), (50, 39695),

Gene: SophKB\_63 Start: 42978, Stop: 43307, Start Num: 24  
Candidate Starts for SophKB\_63:  
(5, 42804), (Start: 10 @42906 has 7 MA's), (11, 42909), (Start: 24 @42978 has 111 MA's), (34, 43089),  
(48, 43263),

Gene: Sotrice96\_67 Start: 43981, Stop: 44310, Start Num: 24  
Candidate Starts for Sotrice96\_67:  
(1, 43381), (2, 43399), (4, 43507), (18, 43870), (Start: 24 @43981 has 111 MA's), (29, 44035), (37,  
44161), (39, 44185), (46, 44224), (48, 44266),

Gene: Soups\_48 Start: 30303, Stop: 29944, Start Num: 23  
Candidate Starts for Soups\_48:  
(Start: 22 @30306 has 44 MA's), (Start: 23 @30303 has 19 MA's), (33, 30195), (49, 29979),

Gene: Soups\_75 Start: 41477, Stop: 41061, Start Num: 20  
Candidate Starts for Soups\_75:  
(Start: 19 @41507 has 1 MA's), (Start: 20 @41477 has 10 MA's), (21, 41465), (27, 41375), (30, 41348),  
(42, 41192), (48, 41111),

Gene: Stank\_69 Start: 44236, Stop: 44565, Start Num: 24  
Candidate Starts for Stank\_69:  
(5, 44062), (Start: 10 @44164 has 7 MA's), (11, 44167), (Start: 24 @44236 has 111 MA's), (34, 44347),  
(48, 44521),

Gene: Stark\_67 Start: 43789, Stop: 44115, Start Num: 24

Candidate Starts for Stark\_67:

(1, 43189), (2, 43207), (4, 43315), (18, 43678), (Start: 24 @43789 has 111 MA's), (34, 43897), (46, 44029), (48, 44071),

Gene: StellaBean\_64 Start: 43546, Stop: 43875, Start Num: 24

Candidate Starts for StellaBean\_64:

(5, 43372), (Start: 10 @43474 has 7 MA's), (11, 43477), (Start: 24 @43546 has 111 MA's), (34, 43657), (48, 43831),

Gene: StolenFromERC\_69 Start: 44018, Stop: 44347, Start Num: 24

Candidate Starts for StolenFromERC\_69:

(1, 43418), (2, 43436), (3, 43496), (4, 43544), (18, 43907), (Start: 24 @44018 has 111 MA's), (29, 44072), (37, 44198), (39, 44222), (46, 44261), (48, 44303),

Gene: StormChicken\_68 Start: 44682, Stop: 45011, Start Num: 24

Candidate Starts for StormChicken\_68:

(5, 44211), (Start: 10 @44313 has 7 MA's), (11, 44316), (18, 44571), (Start: 24 @44682 has 111 MA's), (34, 44793), (48, 44967),

Gene: Strosahl\_48 Start: 30019, Stop: 29660, Start Num: 23

Candidate Starts for Strosahl\_48:

(6, 30424), (7, 30421), (8, 30337), (Start: 23 @30019 has 19 MA's), (33, 29911), (49, 29695),

Gene: SuperAwesome\_68 Start: 40045, Stop: 39689, Start Num: 22

Candidate Starts for SuperAwesome\_68:

(17, 40123), (Start: 22 @40045 has 44 MA's), (35, 39901), (38, 39844), (44, 39775), (47, 39748), (49, 39721), (50, 39700),

Gene: SuperCallie99\_65 Start: 39892, Stop: 39536, Start Num: 22

Candidate Starts for SuperCallie99\_65:

(17, 39970), (Start: 22 @39892 has 44 MA's), (35, 39748), (38, 39691), (44, 39622), (47, 39595), (49, 39568), (50, 39547),

Gene: Switzerland\_48 Start: 30402, Stop: 30043, Start Num: 23

Candidate Starts for Switzerland\_48:

(7, 30804), (8, 30720), (Start: 23 @30402 has 19 MA's), (33, 30294), (49, 30078),

Gene: Switzerland\_74 Start: 41352, Stop: 40936, Start Num: 20

Candidate Starts for Switzerland\_74:

(Start: 19 @41382 has 1 MA's), (Start: 20 @41352 has 10 MA's), (21, 41340), (27, 41250), (30, 41223), (42, 41067), (48, 40986),

Gene: TBrady12\_69 Start: 43720, Stop: 44049, Start Num: 24

Candidate Starts for TBrady12\_69:

(5, 43546), (Start: 10 @43648 has 7 MA's), (11, 43651), (Start: 24 @43720 has 111 MA's), (34, 43831), (48, 44005),

Gene: Tarkin\_65 Start: 43968, Stop: 44297, Start Num: 24

Candidate Starts for Tarkin\_65:

(5, 43794), (Start: 10 @43896 has 7 MA's), (11, 43899), (Start: 24 @43968 has 111 MA's), (34, 44079), (48, 44253),

Gene: TeardropMSU\_62 Start: 42968, Stop: 43297, Start Num: 24

Candidate Starts for TeardropMSU\_62:

(5, 42794), (Start: 10 @42896 has 7 MA's), (11, 42899), (Start: 24 @42968 has 111 MA's), (34, 43079), (48, 43253),

Gene: Teaspoon\_67 Start: 43862, Stop: 44191, Start Num: 24

Candidate Starts for Teaspoon\_67:

(5, 43688), (Start: 10 @43790 has 7 MA's), (11, 43793), (Start: 24 @43862 has 111 MA's), (34, 43973), (48, 44147),

Gene: Temprado\_70 Start: 40411, Stop: 40055, Start Num: 22

Candidate Starts for Temprado\_70:

(14, 40528), (15, 40525), (16, 40507), (Start: 22 @40411 has 44 MA's), (Start: 31 @40309 has 1 MA's), (36, 40264), (44, 40141), (47, 40114), (49, 40087), (50, 40066),

Gene: Terminus\_69 Start: 44755, Stop: 45084, Start Num: 24

Candidate Starts for Terminus\_69:

(5, 44284), (Start: 10 @44386 has 7 MA's), (11, 44389), (18, 44644), (Start: 24 @44755 has 111 MA's), (34, 44866), (48, 45040),

Gene: Thimble\_68 Start: 43200, Stop: 43529, Start Num: 24

Candidate Starts for Thimble\_68:

(1, 42600), (2, 42618), (3, 42678), (4, 42726), (18, 43089), (Start: 24 @43200 has 111 MA's), (29, 43254), (37, 43380), (39, 43404), (46, 43443), (48, 43485),

Gene: Thresher\_68 Start: 44845, Stop: 45174, Start Num: 24

Candidate Starts for Thresher\_68:

(5, 44671), (Start: 10 @44773 has 7 MA's), (11, 44776), (Start: 24 @44845 has 111 MA's), (34, 44956), (48, 45130),

Gene: Tomaszewski\_61 Start: 43134, Stop: 43463, Start Num: 24

Candidate Starts for Tomaszewski\_61:

(1, 42534), (2, 42552), (4, 42660), (18, 43023), (Start: 24 @43134 has 111 MA's), (29, 43188), (37, 43314), (39, 43338), (46, 43377), (48, 43419),

Gene: ToneTone\_66 Start: 39971, Stop: 39615, Start Num: 22

Candidate Starts for ToneTone\_66:

(14, 40088), (15, 40085), (16, 40067), (Start: 22 @39971 has 44 MA's), (Start: 31 @39869 has 1 MA's), (36, 39824), (44, 39701), (47, 39674), (49, 39647), (50, 39626),

Gene: Toto\_64 Start: 44222, Stop: 44551, Start Num: 24

Candidate Starts for Toto\_64:

(5, 44048), (Start: 10 @44150 has 7 MA's), (11, 44153), (Start: 24 @44222 has 111 MA's), (34, 44333), (48, 44507),

Gene: Tucker\_69 Start: 40174, Stop: 39818, Start Num: 22

Candidate Starts for Tucker\_69:

(14, 40291), (15, 40288), (16, 40270), (Start: 22 @40174 has 44 MA's), (Start: 31 @40072 has 1 MA's), (36, 40027), (44, 39904), (47, 39877), (49, 39850), (50, 39829),

Gene: VohminGhazi\_68 Start: 40041, Stop: 39685, Start Num: 22

Candidate Starts for VohminGhazi\_68:



(17, 40119), (Start: 22 @40041 has 44 MA's), (26, 39975), (35, 39897), (38, 39840), (44, 39771), (45, 39765), (47, 39744), (49, 39717), (50, 39696),

Gene: Waits\_48 Start: 30191, Stop: 29832, Start Num: 23

Candidate Starts for Waits\_48:

(7, 30593), (8, 30509), (Start: 23 @30191 has 19 MA's), (33, 30083), (49, 29867),

Gene: Warrior24\_50 Start: 30398, Stop: 30039, Start Num: 23

Candidate Starts for Warrior24\_50:

(7, 30803), (8, 30719), (9, 30716), (Start: 23 @30398 has 19 MA's), (30, 30308), (32, 30299), (36, 30260), (49, 30074),

Gene: Wiggin\_68 Start: 43804, Stop: 44133, Start Num: 24

Candidate Starts for Wiggin\_68:

(5, 43630), (Start: 10 @43732 has 7 MA's), (11, 43735), (Start: 24 @43804 has 111 MA's), (34, 43915), (48, 44089),

Gene: Wiks\_68 Start: 40042, Stop: 39686, Start Num: 22

Candidate Starts for Wiks\_68:

(14, 40159), (15, 40156), (16, 40138), (Start: 22 @40042 has 44 MA's), (Start: 31 @39940 has 1 MA's), (36, 39895), (44, 39772), (47, 39745), (49, 39718), (50, 39697),

Gene: Willez\_61 Start: 42000, Stop: 42329, Start Num: 24

Candidate Starts for Willez\_61:

(1, 41400), (2, 41418), (4, 41526), (18, 41889), (Start: 24 @42000 has 111 MA's), (29, 42054), (37, 42180), (39, 42204), (46, 42243), (48, 42285),

Gene: WunderPhul\_69 Start: 40040, Stop: 39684, Start Num: 22

Candidate Starts for WunderPhul\_69:

(14, 40157), (15, 40154), (16, 40136), (Start: 22 @40040 has 44 MA's), (Start: 31 @39938 has 1 MA's), (36, 39893), (44, 39770), (47, 39743), (49, 39716), (50, 39695),

Gene: Xandras\_65 Start: 43215, Stop: 43544, Start Num: 24

Candidate Starts for Xandras\_65:

(5, 43041), (Start: 10 @43143 has 7 MA's), (11, 43146), (Start: 24 @43215 has 111 MA's), (34, 43326), (48, 43500),

Gene: YassJohnny\_63 Start: 43173, Stop: 43502, Start Num: 24

Candidate Starts for YassJohnny\_63:

(5, 42702), (Start: 10 @42804 has 7 MA's), (11, 42807), (18, 43062), (Start: 24 @43173 has 111 MA's), (29, 43227), (37, 43353), (39, 43377), (46, 43416), (48, 43458),

Gene: Yokurt\_68 Start: 40042, Stop: 39686, Start Num: 22

Candidate Starts for Yokurt\_68:

(14, 40159), (15, 40156), (16, 40138), (Start: 22 @40042 has 44 MA's), (Start: 31 @39940 has 1 MA's), (36, 39895), (44, 39772), (47, 39745), (49, 39718), (50, 39697),

Gene: Youngblood\_69 Start: 44685, Stop: 45014, Start Num: 24

Candidate Starts for Youngblood\_69:

(5, 44214), (Start: 10 @44316 has 7 MA's), (11, 44319), (18, 44574), (Start: 24 @44685 has 111 MA's), (34, 44796), (48, 44970),

Gene: Zaka\_69 Start: 40042, Stop: 39686, Start Num: 22

Candidate Starts for Zaka\_69:

(14, 40159), (15, 40156), (16, 40138), (Start: 22 @40042 has 44 MA's), (Start: 31 @39940 has 1 MA's), (36, 39895), (44, 39772), (47, 39745), (49, 39718), (50, 39697),

Gene: Zulu\_70 Start: 40420, Stop: 40064, Start Num: 22

Candidate Starts for Zulu\_70:

(14, 40537), (15, 40534), (16, 40516), (Start: 22 @40420 has 44 MA's), (Start: 31 @40318 has 1 MA's), (36, 40273), (44, 40150), (47, 40123), (49, 40096), (50, 40075),

Gene: xkcd\_69 Start: 44875, Stop: 45204, Start Num: 24

Candidate Starts for xkcd\_69:

(5, 44404), (Start: 10 @44506 has 7 MA's), (11, 44509), (18, 44764), (Start: 24 @44875 has 111 MA's), (34, 44986), (48, 45160),