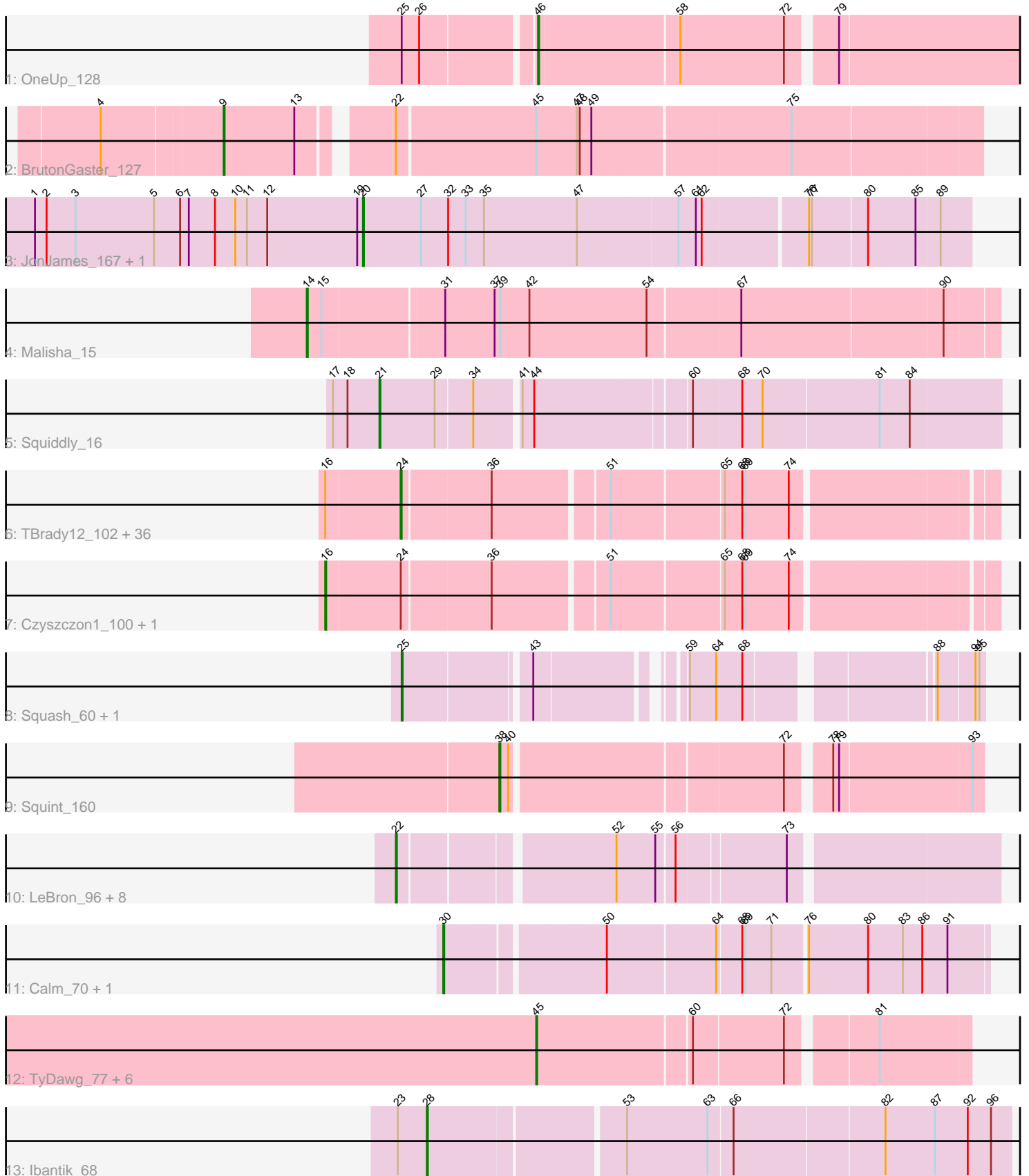


# Pham 171449



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 171449 Report

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

Pham number 171449 has 67 members, 0 are drafts.

Phages represented in each track:

- Track 1 : OneUp\_128
- Track 2 : BrutonGaster\_127
- Track 3 : JonJames\_167, Yvonnetastic\_162
- Track 4 : Malisha\_15
- Track 5 : Squiddly\_16
- Track 6 : TBrady12\_102, DoctorDiddles\_98, Marshmallow\_96, Inca\_96, Kimchi\_103, Command613\_101, 244\_100, Asriel\_97, Phaja\_97, Barbarian\_98, BigBubba\_99, Argent26\_103, Stank\_101, GooberAzure\_102, Xandras\_98, IHOP\_97, Myrale\_99, Gage\_101, Icee\_100, Harella\_99, Nimrod\_99, Balomoji\_99, Easy2Say\_99, GoldenSpark\_103, Holt\_104, Wiggin\_101, xkcd\_102, YassJohnny\_96, Kostya\_99, Rakim\_100, Youngblood\_102, Gemini\_104, Traaww1\_95, Flypotenuse\_95, Glexan\_98, Bask21\_99, Adnama\_103
- Track 7 : Czyszczonek\_100, Gator\_97
- Track 8 : Squash\_60, Blab\_54
- Track 9 : Squint\_160
- Track 10 : LeBron\_96, UPIE\_96, Tyson\_99, Calm\_99, AvadaKedavra\_97, Acquire49\_97, Halena\_95, Zaria\_98, Wyatt2\_98
- Track 11 : Calm\_70, Wamburgexpress\_69
- Track 12 : TyDawg\_77, Dulcita\_78, Skinny\_80, Diminimus\_78, Bongo\_77, PegLeg\_76, LilhomieP\_77
- Track 13 : Ibantik\_68

### ***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 37 of the 67 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_100, Adnama\_103, Argent26\_103, Asriel\_97, Balomoji\_99, Barbarian\_98, Bask21\_99, BigBubba\_99, Command613\_101, DoctorDiddles\_98, Easy2Say\_99, Flypotenuse\_95, Gage\_101, Gemini\_104, Glexan\_98, GoldenSpark\_103, GooberAzure\_102, Harella\_99, Holt\_104, IHOP\_97, Icee\_100, Inca\_96, Kimchi\_103, Kostya\_99, Marshmallow\_96, Myrale\_99, Nimrod\_99, Phaja\_97, Rakim\_100, Stank\_101, TBrady12\_102, Traaww1\_95, Wiggin\_101, Xandras\_98, YassJohnny\_96,

Youngblood\_102, xkcd\_102,

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

- Czyszczon1\_100, Gator\_97,

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

- Acquire49\_97, AvadaKedavra\_97, Blab\_54, Bongo\_77, BrutonGaster\_127, Calm\_70, Calm\_99, Diminimus\_78, Dulcita\_78, Halena\_95, Ibantik\_68, JonJames\_167, LeBron\_96, LilhomieP\_77, Malisha\_15, OneUp\_128, PegLeg\_76, Skinny\_80, Squash\_60, Squiddly\_16, Squint\_160, TyDawg\_77, Tyson\_99, UPIE\_96, Wamburgxpress\_69, Wyatt2\_98, Yvonnetastic\_162, Zaria\_98,

### Summary by start number:

Start 9:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: BrutonGaster\_127 (CQ2),

Start 14:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Malisha\_15 (DN),

Start 16:

- Found in 39 of 67 ( 58.2% ) of genes in pham
- Manual Annotations of this start: 2 of 67
- Called 5.1% of time when present
- Phage (with cluster) where this start called: Czyszczon1\_100 (E), Gator\_97 (E),

Start 20:

- Found in 2 of 67 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 2 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: JonJames\_167 (DD), Yvonnetastic\_162 (DD),

Start 21:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Squiddly\_16 (DN2),

Start 22:

- Found in 10 of 67 ( 14.9% ) of genes in pham
- Manual Annotations of this start: 9 of 67
- Called 90.0% of time when present
- Phage (with cluster) where this start called: Acquire49\_97 (L1), AvadaKedavra\_97 (L1), Calm\_99 (L1), Halena\_95 (L1), LeBron\_96 (L1), Tyson\_99 (L1), UPIE\_96 (L1), Wyatt2\_98 (L1), Zaria\_98 (L1),

Start 24:

- Found in 39 of 67 ( 58.2% ) of genes in pham
- Manual Annotations of this start: 37 of 67
- Called 94.9% of time when present
- Phage (with cluster) where this start called: 244\_100 (E), Adnama\_103 (E), Argent26\_103 (E), Asriel\_97 (E), Balomoji\_99 (E), Barbarian\_98 (E), Bask21\_99 (E), BigBubba\_99 (E), Command613\_101 (E), DoctorDiddles\_98 (E), Easy2Say\_99 (E), Flypotenuse\_95 (E), Gage\_101 (E), Gemini\_104 (E), Glexan\_98 (E), GoldenSpark\_103 (E), GooberAzure\_102 (E), Harella\_99 (E), Holt\_104 (E), IHOP\_97 (E), Icee\_100 (E), Inca\_96 (E), Kimchi\_103 (E), Kostya\_99 (E), Marshmallow\_96 (E), Myrale\_99 (E), Nimrod\_99 (E), Phaja\_97 (E), Rakim\_100 (E), Stank\_101 (E), TBrady12\_102 (E), Traaww1\_95 (E), Wiggin\_101 (E), Xandras\_98 (E), YassJohnny\_96 (E), Youngblood\_102 (E), xkcd\_102 (E),

Start 25:

- Found in 3 of 67 ( 4.5% ) of genes in pham
- Manual Annotations of this start: 2 of 67
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Blab\_54 (EG), Squash\_60 (EG),

Start 28:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ibantik\_68 (singleton),

Start 30:

- Found in 2 of 67 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 2 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Calm\_70 (L1), Wamburgrxpress\_69 (L1),

Start 38:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Squint\_160 (J),

Start 45:

- Found in 8 of 67 ( 11.9% ) of genes in pham
- Manual Annotations of this start: 7 of 67
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Bongo\_77 (M1), Diminimus\_78 (M1), Dulcita\_78 (M1), LilhomieP\_77 (M1), PegLeg\_76 (M1), Skinny\_80 (M1), TyDawg\_77 (M1),

Start 46:

- Found in 1 of 67 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 1 of 67
- Called 100.0% of time when present
- Phage (with cluster) where this start called: OneUp\_128 (CQ2),

## Summary by clusters:

There are 10 clusters represented in this pham: DN, singleton, E, DD, J, DN2, M1, L1, CQ2, EG,

Info for manual annotations of cluster CQ2:

- Start number 9 was manually annotated 1 time for cluster CQ2.
- Start number 46 was manually annotated 1 time for cluster CQ2.

Info for manual annotations of cluster DD:

- Start number 20 was manually annotated 2 times for cluster DD.

Info for manual annotations of cluster DN:

- Start number 14 was manually annotated 1 time for cluster DN.

Info for manual annotations of cluster DN2:

- Start number 21 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster E:

- Start number 16 was manually annotated 2 times for cluster E.
- Start number 24 was manually annotated 37 times for cluster E.

Info for manual annotations of cluster EG:

- Start number 25 was manually annotated 2 times for cluster EG.

Info for manual annotations of cluster J:

- Start number 38 was manually annotated 1 time for cluster J.

Info for manual annotations of cluster L1:

- Start number 22 was manually annotated 9 times for cluster L1.
- Start number 30 was manually annotated 2 times for cluster L1.

Info for manual annotations of cluster M1:

- Start number 45 was manually annotated 7 times for cluster M1.

## Gene Information:

Gene: 244\_100 Start: 58683, Stop: 59246, Start Num: 24

Candidate Starts for 244\_100:

(Start: 16 @58608 has 2 MA's), (Start: 24 @58683 has 37 MA's), (36, 58770), (51, 58878), (65, 58986), (68, 59004), (69, 59007), (74, 59052),

Gene: Acquire49\_97 Start: 59589, Stop: 60149, Start Num: 22

Candidate Starts for Acquire49\_97:

(Start: 22 @59589 has 9 MA's), (52, 59790), (55, 59829), (56, 59844), (73, 59949),

Gene: Adnama\_103 Start: 58978, Stop: 59541, Start Num: 24

Candidate Starts for Adnama\_103:

(Start: 16 @58903 has 2 MA's), (Start: 24 @58978 has 37 MA's), (36, 59065), (51, 59173), (65, 59281), (68, 59299), (69, 59302), (74, 59347),

Gene: Argent26\_103 Start: 58902, Stop: 59465, Start Num: 24  
Candidate Starts for Argent26\_103:  
(Start: 16 @58827 has 2 MA's), (Start: 24 @58902 has 37 MA's), (36, 58989), (51, 59097), (65, 59205), (68, 59223), (69, 59226), (74, 59271),

Gene: Asriel\_97 Start: 57315, Stop: 57878, Start Num: 24  
Candidate Starts for Asriel\_97:  
(Start: 16 @57240 has 2 MA's), (Start: 24 @57315 has 37 MA's), (36, 57402), (51, 57510), (65, 57618), (68, 57636), (69, 57639), (74, 57684),

Gene: AvadaKedavra\_97 Start: 59701, Stop: 60261, Start Num: 22  
Candidate Starts for AvadaKedavra\_97:  
(Start: 22 @59701 has 9 MA's), (52, 59902), (55, 59941), (56, 59956), (73, 60061),

Gene: Balomoji\_99 Start: 59098, Stop: 59661, Start Num: 24  
Candidate Starts for Balomoji\_99:  
(Start: 16 @59023 has 2 MA's), (Start: 24 @59098 has 37 MA's), (36, 59185), (51, 59293), (65, 59401), (68, 59419), (69, 59422), (74, 59467),

Gene: Barbarian\_98 Start: 57315, Stop: 57878, Start Num: 24  
Candidate Starts for Barbarian\_98:  
(Start: 16 @57240 has 2 MA's), (Start: 24 @57315 has 37 MA's), (36, 57402), (51, 57510), (65, 57618), (68, 57636), (69, 57639), (74, 57684),

Gene: Bask21\_99 Start: 57954, Stop: 58517, Start Num: 24  
Candidate Starts for Bask21\_99:  
(Start: 16 @57879 has 2 MA's), (Start: 24 @57954 has 37 MA's), (36, 58041), (51, 58149), (65, 58257), (68, 58275), (69, 58278), (74, 58323),

Gene: BigBubba\_99 Start: 58010, Stop: 58573, Start Num: 24  
Candidate Starts for BigBubba\_99:  
(Start: 16 @57935 has 2 MA's), (Start: 24 @58010 has 37 MA's), (36, 58097), (51, 58205), (65, 58313), (68, 58331), (69, 58334), (74, 58379),

Gene: Blab\_54 Start: 42170, Stop: 41670, Start Num: 25  
Candidate Starts for Blab\_54:  
(Start: 25 @42170 has 2 MA's), (43, 42053), (59, 41930), (64, 41903), (68, 41879), (88, 41714), (94, 41678), (95, 41675),

Gene: Bongo\_77 Start: 49178, Stop: 49594, Start Num: 45  
Candidate Starts for Bongo\_77:  
(Start: 45 @49178 has 7 MA's), (60, 49331), (72, 49421), (81, 49502),

Gene: BrutonGaster\_127 Start: 75924, Stop: 76652, Start Num: 9  
Candidate Starts for BrutonGaster\_127:  
(4, 75816), (Start: 9 @75924 has 1 MA's), (13, 75996), (Start: 22 @76074 has 9 MA's), (Start: 45 @76212 has 7 MA's), (47, 76254), (48, 76257), (49, 76269), (75, 76464),

Gene: Calm\_70 Start: 47119, Stop: 47640, Start Num: 30  
Candidate Starts for Calm\_70:  
(Start: 30 @47119 has 2 MA's), (50, 47269), (64, 47377), (68, 47401), (69, 47404), (71, 47431), (76, 47464), (80, 47524), (83, 47560), (86, 47578), (91, 47602),

Gene: Calm\_99 Start: 59968, Stop: 60528, Start Num: 22  
Candidate Starts for Calm\_99:  
(Start: 22 @59968 has 9 MA's), (52, 60169), (55, 60208), (56, 60223), (73, 60328),

Gene: Command613\_101 Start: 59112, Stop: 59675, Start Num: 24  
Candidate Starts for Command613\_101:  
(Start: 16 @59037 has 2 MA's), (Start: 24 @59112 has 37 MA's), (36, 59199), (51, 59307), (65, 59415), (68, 59433), (69, 59436), (74, 59481),

Gene: Czyszczone1\_100 Start: 58822, Stop: 59460, Start Num: 16  
Candidate Starts for Czyszczone1\_100:  
(Start: 16 @58822 has 2 MA's), (Start: 24 @58897 has 37 MA's), (36, 58984), (51, 59092), (65, 59200), (68, 59218), (69, 59221), (74, 59266),

Gene: Diminimus\_78 Start: 49173, Stop: 49589, Start Num: 45  
Candidate Starts for Diminimus\_78:  
(Start: 45 @49173 has 7 MA's), (60, 49326), (72, 49416), (81, 49497),

Gene: DoctorDiddles\_98 Start: 58360, Stop: 58923, Start Num: 24  
Candidate Starts for DoctorDiddles\_98:  
(Start: 16 @58285 has 2 MA's), (Start: 24 @58360 has 37 MA's), (36, 58447), (51, 58555), (65, 58663), (68, 58681), (69, 58684), (74, 58729),

Gene: Dulcita\_78 Start: 49174, Stop: 49590, Start Num: 45  
Candidate Starts for Dulcita\_78:  
(Start: 45 @49174 has 7 MA's), (60, 49327), (72, 49417), (81, 49498),

Gene: Easy2Say\_99 Start: 59369, Stop: 59932, Start Num: 24  
Candidate Starts for Easy2Say\_99:  
(Start: 16 @59294 has 2 MA's), (Start: 24 @59369 has 37 MA's), (36, 59456), (51, 59564), (65, 59672), (68, 59690), (69, 59693), (74, 59738),

Gene: Flypotenuse\_95 Start: 57969, Stop: 58532, Start Num: 24  
Candidate Starts for Flypotenuse\_95:  
(Start: 16 @57894 has 2 MA's), (Start: 24 @57969 has 37 MA's), (36, 58056), (51, 58164), (65, 58272), (68, 58290), (69, 58293), (74, 58338),

Gene: Gage\_101 Start: 59040, Stop: 59603, Start Num: 24  
Candidate Starts for Gage\_101:  
(Start: 16 @58965 has 2 MA's), (Start: 24 @59040 has 37 MA's), (36, 59127), (51, 59235), (65, 59343), (68, 59361), (69, 59364), (74, 59409),

Gene: Gator\_97 Start: 58750, Stop: 59388, Start Num: 16  
Candidate Starts for Gator\_97:  
(Start: 16 @58750 has 2 MA's), (Start: 24 @58825 has 37 MA's), (36, 58912), (51, 59020), (65, 59128), (68, 59146), (69, 59149), (74, 59194),

Gene: Gemini\_104 Start: 59419, Stop: 59982, Start Num: 24  
Candidate Starts for Gemini\_104:  
(Start: 16 @59344 has 2 MA's), (Start: 24 @59419 has 37 MA's), (36, 59506), (51, 59614), (65, 59722), (68, 59740), (69, 59743), (74, 59788),

Gene: Glexan\_98 Start: 59099, Stop: 59662, Start Num: 24

Candidate Starts for Glexan\_98:

(Start: 16 @59024 has 2 MA's), (Start: 24 @59099 has 37 MA's), (36, 59186), (51, 59294), (65, 59402), (68, 59420), (69, 59423), (74, 59468),

Gene: GoldenSpark\_103 Start: 58902, Stop: 59465, Start Num: 24

Candidate Starts for GoldenSpark\_103:

(Start: 16 @58827 has 2 MA's), (Start: 24 @58902 has 37 MA's), (36, 58989), (51, 59097), (65, 59205), (68, 59223), (69, 59226), (74, 59271),

Gene: GooberAzure\_102 Start: 58902, Stop: 59465, Start Num: 24

Candidate Starts for GooberAzure\_102:

(Start: 16 @58827 has 2 MA's), (Start: 24 @58902 has 37 MA's), (36, 58989), (51, 59097), (65, 59205), (68, 59223), (69, 59226), (74, 59271),

Gene: Halena\_95 Start: 58884, Stop: 59444, Start Num: 22

Candidate Starts for Halena\_95:

(Start: 22 @58884 has 9 MA's), (52, 59085), (55, 59124), (56, 59139), (73, 59244),

Gene: Harella\_99 Start: 59615, Stop: 60178, Start Num: 24

Candidate Starts for Harella\_99:

(Start: 16 @59540 has 2 MA's), (Start: 24 @59615 has 37 MA's), (36, 59702), (51, 59810), (65, 59918), (68, 59936), (69, 59939), (74, 59984),

Gene: Holt\_104 Start: 59316, Stop: 59879, Start Num: 24

Candidate Starts for Holt\_104:

(Start: 16 @59241 has 2 MA's), (Start: 24 @59316 has 37 MA's), (36, 59403), (51, 59511), (65, 59619), (68, 59637), (69, 59640), (74, 59685),

Gene: IHOP\_97 Start: 58618, Stop: 59181, Start Num: 24

Candidate Starts for IHOP\_97:

(Start: 16 @58543 has 2 MA's), (Start: 24 @58618 has 37 MA's), (36, 58705), (51, 58813), (65, 58921), (68, 58939), (69, 58942), (74, 58987),

Gene: Ibantik\_68 Start: 30229, Stop: 30804, Start Num: 28

Candidate Starts for Ibantik\_68:

(23, 30199), (Start: 28 @30229 has 1 MA's), (53, 30421), (63, 30502), (66, 30526), (82, 30676), (87, 30727), (92, 30760), (96, 30784),

Gene: Icee\_100 Start: 58426, Stop: 58989, Start Num: 24

Candidate Starts for Icee\_100:

(Start: 16 @58351 has 2 MA's), (Start: 24 @58426 has 37 MA's), (36, 58513), (51, 58621), (65, 58729), (68, 58747), (69, 58750), (74, 58795),

Gene: Inca\_96 Start: 57107, Stop: 57670, Start Num: 24

Candidate Starts for Inca\_96:

(Start: 16 @57032 has 2 MA's), (Start: 24 @57107 has 37 MA's), (36, 57194), (51, 57302), (65, 57410), (68, 57428), (69, 57431), (74, 57476),

Gene: JonJames\_167 Start: 89129, Stop: 89734, Start Num: 20

Candidate Starts for JonJames\_167:

(1, 88790), (2, 88802), (3, 88832), (5, 88913), (6, 88940), (7, 88949), (8, 88976), (10, 88997), (11, 89009), (12, 89030), (19, 89123), (Start: 20 @89129 has 2 MA's), (27, 89189), (32, 89216), (33, 89234), (35, 89252), (47, 89348), (57, 89450), (61, 89468), (62, 89474), (76, 89576), (77, 89579), (80,



89633), (85, 89681), (89, 89705),

Gene: Kimchi\_103 Start: 59043, Stop: 59606, Start Num: 24

Candidate Starts for Kimchi\_103:

(Start: 16 @58968 has 2 MA's), (Start: 24 @59043 has 37 MA's), (36, 59130), (51, 59238), (65, 59346), (68, 59364), (69, 59367), (74, 59412),

Gene: Kostya\_99 Start: 58720, Stop: 59283, Start Num: 24

Candidate Starts for Kostya\_99:

(Start: 16 @58645 has 2 MA's), (Start: 24 @58720 has 37 MA's), (36, 58807), (51, 58915), (65, 59023), (68, 59041), (69, 59044), (74, 59089),

Gene: LeBron\_96 Start: 59191, Stop: 59751, Start Num: 22

Candidate Starts for LeBron\_96:

(Start: 22 @59191 has 9 MA's), (52, 59392), (55, 59431), (56, 59446), (73, 59551),

Gene: LilhomieP\_77 Start: 49657, Stop: 50073, Start Num: 45

Candidate Starts for LilhomieP\_77:

(Start: 45 @49657 has 7 MA's), (60, 49810), (72, 49900), (81, 49981),

Gene: Malisha\_15 Start: 9435, Stop: 10115, Start Num: 14

Candidate Starts for Malisha\_15:

(Start: 14 @9435 has 1 MA's), (15, 9450), (31, 9567), (37, 9618), (39, 9624), (42, 9654), (54, 9771), (67, 9861), (90, 10062),

Gene: Marshmallow\_96 Start: 59240, Stop: 59803, Start Num: 24

Candidate Starts for Marshmallow\_96:

(Start: 16 @59165 has 2 MA's), (Start: 24 @59240 has 37 MA's), (36, 59327), (51, 59435), (65, 59543), (68, 59561), (69, 59564), (74, 59609),

Gene: Myrale\_99 Start: 59400, Stop: 59963, Start Num: 24

Candidate Starts for Myrale\_99:

(Start: 16 @59325 has 2 MA's), (Start: 24 @59400 has 37 MA's), (36, 59487), (51, 59595), (65, 59703), (68, 59721), (69, 59724), (74, 59769),

Gene: Nimrod\_99 Start: 59367, Stop: 59930, Start Num: 24

Candidate Starts for Nimrod\_99:

(Start: 16 @59292 has 2 MA's), (Start: 24 @59367 has 37 MA's), (36, 59454), (51, 59562), (65, 59670), (68, 59688), (69, 59691), (74, 59736),

Gene: OneUp\_128 Start: 76398, Stop: 76883, Start Num: 46

Candidate Starts for OneUp\_128:

(Start: 25 @76275 has 2 MA's), (26, 76293), (Start: 46 @76398 has 1 MA's), (58, 76539), (72, 76644), (79, 76686),

Gene: PegLeg\_76 Start: 48918, Stop: 49334, Start Num: 45

Candidate Starts for PegLeg\_76:

(Start: 45 @48918 has 7 MA's), (60, 49071), (72, 49161), (81, 49242),

Gene: Phaja\_97 Start: 58620, Stop: 59183, Start Num: 24

Candidate Starts for Phaja\_97:

(Start: 16 @58545 has 2 MA's), (Start: 24 @58620 has 37 MA's), (36, 58707), (51, 58815), (65, 58923), (68, 58941), (69, 58944), (74, 58989),

Gene: Rakim\_100 Start: 58852, Stop: 59415, Start Num: 24

Candidate Starts for Rakim\_100:

(Start: 16 @58777 has 2 MA's), (Start: 24 @58852 has 37 MA's), (36, 58939), (51, 59047), (65, 59155), (68, 59173), (69, 59176), (74, 59221),

Gene: Skinny\_80 Start: 50086, Stop: 50502, Start Num: 45

Candidate Starts for Skinny\_80:

(Start: 45 @50086 has 7 MA's), (60, 50239), (72, 50329), (81, 50410),

Gene: Squash\_60 Start: 43129, Stop: 42629, Start Num: 25

Candidate Starts for Squash\_60:

(Start: 25 @43129 has 2 MA's), (43, 43012), (59, 42889), (64, 42862), (68, 42838), (88, 42673), (94, 42637), (95, 42634),

Gene: Squiddly\_16 Start: 9132, Stop: 9740, Start Num: 21

Candidate Starts for Squiddly\_16:

(17, 9084), (18, 9099), (Start: 21 @9132 has 1 MA's), (29, 9189), (34, 9225), (41, 9267), (44, 9279), (60, 9432), (68, 9480), (70, 9501), (81, 9618), (84, 9648),

Gene: Squint\_160 Start: 85250, Stop: 85708, Start Num: 38

Candidate Starts for Squint\_160:

(Start: 38 @85250 has 1 MA's), (40, 85259), (72, 85523), (78, 85559), (79, 85565), (93, 85697),

Gene: Stank\_101 Start: 59115, Stop: 59678, Start Num: 24

Candidate Starts for Stank\_101:

(Start: 16 @59040 has 2 MA's), (Start: 24 @59115 has 37 MA's), (36, 59202), (51, 59310), (65, 59418), (68, 59436), (69, 59439), (74, 59484),

Gene: TBrady12\_102 Start: 58555, Stop: 59118, Start Num: 24

Candidate Starts for TBrady12\_102:

(Start: 16 @58480 has 2 MA's), (Start: 24 @58555 has 37 MA's), (36, 58642), (51, 58750), (65, 58858), (68, 58876), (69, 58879), (74, 58924),

Gene: Traaww1\_95 Start: 58144, Stop: 58707, Start Num: 24

Candidate Starts for Traaww1\_95:

(Start: 16 @58069 has 2 MA's), (Start: 24 @58144 has 37 MA's), (36, 58231), (51, 58339), (65, 58447), (68, 58465), (69, 58468), (74, 58513),

Gene: TyDawg\_77 Start: 49178, Stop: 49594, Start Num: 45

Candidate Starts for TyDawg\_77:

(Start: 45 @49178 has 7 MA's), (60, 49331), (72, 49421), (81, 49502),

Gene: Tyson\_99 Start: 60294, Stop: 60854, Start Num: 22

Candidate Starts for Tyson\_99:

(Start: 22 @60294 has 9 MA's), (52, 60495), (55, 60534), (56, 60549), (73, 60654),

Gene: UPIE\_96 Start: 59534, Stop: 60094, Start Num: 22

Candidate Starts for UPIE\_96:

(Start: 22 @59534 has 9 MA's), (52, 59735), (55, 59774), (56, 59789), (73, 59894),

Gene: Wamburgxpress\_69 Start: 47295, Stop: 47816, Start Num: 30

Candidate Starts for Wamburgxpress\_69:

(Start: 30 @47295 has 2 MA's), (50, 47445), (64, 47553), (68, 47577), (69, 47580), (71, 47607), (76, 47640), (80, 47700), (83, 47736), (86, 47754), (91, 47778),

Gene: Wiggin\_101 Start: 58545, Stop: 59108, Start Num: 24

Candidate Starts for Wiggin\_101:

(Start: 16 @58470 has 2 MA's), (Start: 24 @58545 has 37 MA's), (36, 58632), (51, 58740), (65, 58848), (68, 58866), (69, 58869), (74, 58914),

Gene: Wyatt2\_98 Start: 59957, Stop: 60517, Start Num: 22

Candidate Starts for Wyatt2\_98:

(Start: 22 @59957 has 9 MA's), (52, 60158), (55, 60197), (56, 60212), (73, 60317),

Gene: Xandras\_98 Start: 58368, Stop: 58931, Start Num: 24

Candidate Starts for Xandras\_98:

(Start: 16 @58293 has 2 MA's), (Start: 24 @58368 has 37 MA's), (36, 58455), (51, 58563), (65, 58671), (68, 58689), (69, 58692), (74, 58737),

Gene: YassJohnny\_96 Start: 57688, Stop: 58251, Start Num: 24

Candidate Starts for YassJohnny\_96:

(Start: 16 @57613 has 2 MA's), (Start: 24 @57688 has 37 MA's), (36, 57775), (51, 57883), (65, 57991), (68, 58009), (69, 58012), (74, 58057),

Gene: Youngblood\_102 Start: 59838, Stop: 60401, Start Num: 24

Candidate Starts for Youngblood\_102:

(Start: 16 @59763 has 2 MA's), (Start: 24 @59838 has 37 MA's), (36, 59925), (51, 60033), (65, 60141), (68, 60159), (69, 60162), (74, 60207),

Gene: Yvonnetastic\_162 Start: 85216, Stop: 85821, Start Num: 20

Candidate Starts for Yvonnetastic\_162:

(1, 84877), (2, 84889), (3, 84919), (5, 85000), (6, 85027), (7, 85036), (8, 85063), (10, 85084), (11, 85096), (12, 85117), (19, 85210), (Start: 20 @85216 has 2 MA's), (27, 85276), (32, 85303), (33, 85321), (35, 85339), (47, 85435), (57, 85537), (61, 85555), (62, 85561), (76, 85663), (77, 85666), (80, 85720), (85, 85768), (89, 85792),

Gene: Zaria\_98 Start: 59433, Stop: 59993, Start Num: 22

Candidate Starts for Zaria\_98:

(Start: 22 @59433 has 9 MA's), (52, 59634), (55, 59673), (56, 59688), (73, 59793),

Gene: xkcd\_102 Start: 60022, Stop: 60585, Start Num: 24

Candidate Starts for xkcd\_102:

(Start: 16 @59947 has 2 MA's), (Start: 24 @60022 has 37 MA's), (36, 60109), (51, 60217), (65, 60325), (68, 60343), (69, 60346), (74, 60391),