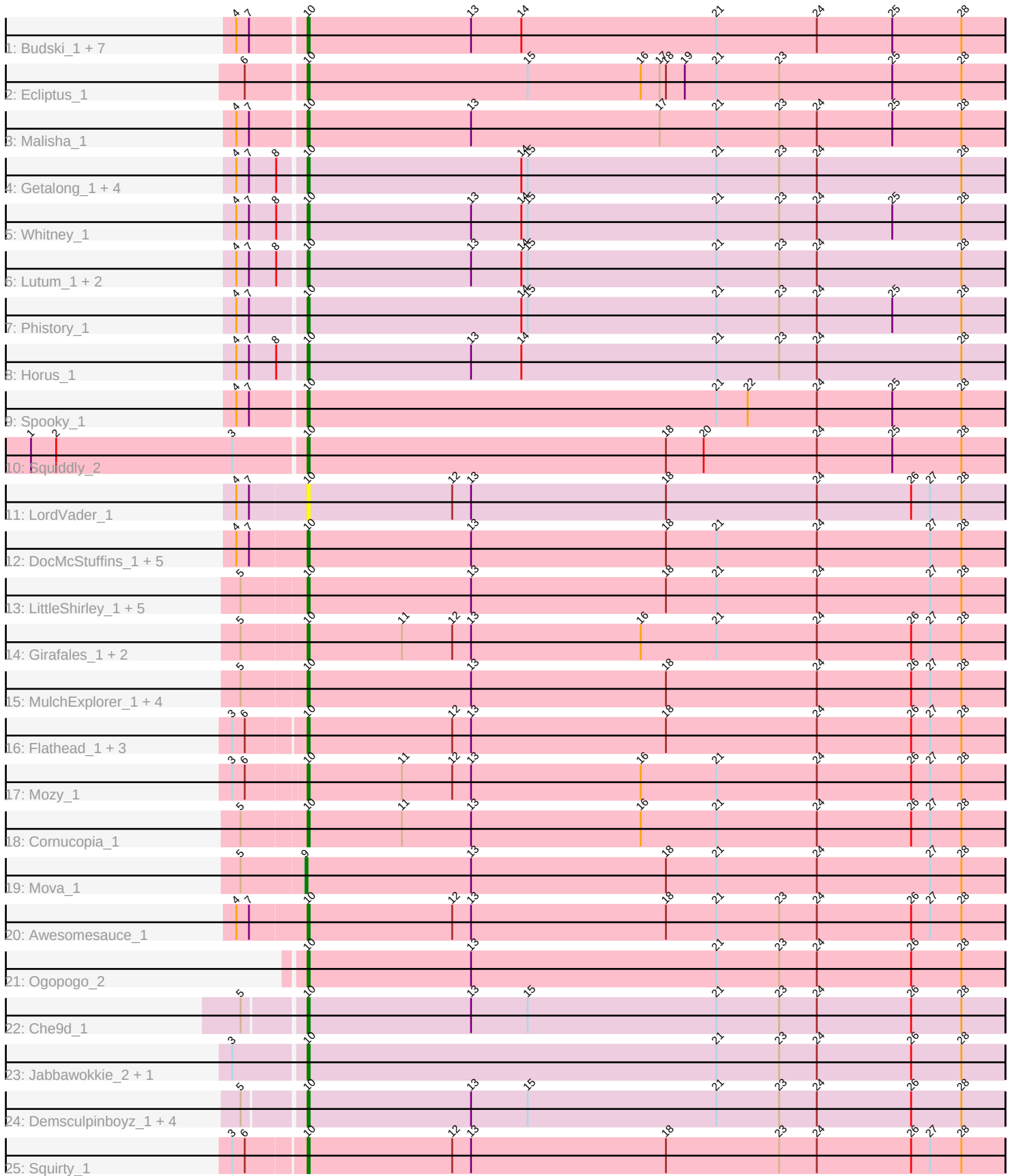


## Pham 280449



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 280449 Report

This analysis was run 02/07/26 on database version 634.

Pham number 280449 has 62 members, 5 are drafts.

Phages represented in each track:

- Track 1 : Budski\_1, Holliday\_1, Kamaru\_1, BotCity\_1, Phabuloso\_1, CheeseTouch\_1, LitninMcQueen\_1, ODay\_1
- Track 2 : Ecliptus\_1
- Track 3 : Malisha\_1
- Track 4 : Getalong\_1, Asapag\_1, BENtherdunthat\_1, Leroy\_1, Frickyeh\_1
- Track 5 : Whitney\_1
- Track 6 : Lutum\_1, Periwinkle\_1, Kenna\_1
- Track 7 : Phistory\_1
- Track 8 : Horus\_1
- Track 9 : Spooky\_1
- Track 10 : Squiddly\_2
- Track 11 : LordVader\_1
- Track 12 : DocMcStuffins\_1, TootsiePop\_1, ChickenDinner\_1, Piper2020\_1, Misha28\_1, Aloeri\_1
- Track 13 : LittleShirley\_1, Starcevich\_1, Slim\_1, Rialto\_1, Totinger\_1, Emmaloid\_1
- Track 14 : Girafales\_1, Tchotchke\_1, Quico\_1
- Track 15 : MulchExplorer\_1, Kimberlium\_1, Plumbus\_1, Juice456\_1, Job42\_1
- Track 16 : Flathead\_1, Frankie\_1, Hegedechwinu\_1, Brushbloom\_1
- Track 17 : Mozy\_1
- Track 18 : Cornucopia\_1
- Track 19 : Mova\_1
- Track 20 : Awesomesauce\_1
- Track 21 : Ogopogo\_2
- Track 22 : Che9d\_1
- Track 23 : Jabbawokkie\_2, Zapner\_2
- Track 24 : Demsculpinboyz\_1, Avani\_1, Yoshi\_1, Soul22\_1, SilverChicken\_1
- Track 25 : Squirty\_1

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

The start number called the most often in the published annotations is 10, it was called in 56 of the 57 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aloeri\_1, Asapag\_1, Avani\_1, Awesomesauce\_1, BENtherdunthat\_1, BotCity\_1, Brushbloom\_1, Budski\_1, Che9d\_1, CheeseTouch\_1, ChickenDinner\_1, Cornucopia\_1, Demsculpinboyz\_1, DocMcStuffins\_1, Ecliptus\_1, Emmaloid\_1, Flathead\_1, Frankie\_1, Frickyeh\_1, Getalong\_1, Girafales\_1, Hegedechwinu\_1, Holliday\_1, Horus\_1, Jabbawokkie\_2, Job42\_1, Juice456\_1, Kamaru\_1, Kenna\_1, Kimberlium\_1, Leroy\_1, LitninMcQueen\_1, LittleShirley\_1, LordVader\_1, Lutum\_1, Malisha\_1, Misha28\_1, Mozy\_1, MulchExplorer\_1, ODay\_1, Ogopogo\_2, Periwinkle\_1, Phabuloso\_1, Phistory\_1, Piper2020\_1, Plumbus\_1, Quico\_1, Rialto\_1, SilverChicken\_1, Slim\_1, Soul22\_1, Spooky\_1, Squiddly\_2, Squirty\_1, Starcevich\_1, Tchotchke\_1, TootsiePop\_1, Totinger\_1, Whitney\_1, Yoshi\_1, Zapner\_2,

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

- 

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

- Mova\_1,

### Summary by start number:

Start 9:

- Found in 1 of 62 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 57
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mova\_1 (F1),

Start 10:

- Found in 61 of 62 ( 98.4% ) of genes in pham
- Manual Annotations of this start: 56 of 57
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aloeri\_1 (F1), Asapag\_1 (DN1), Avani\_1 (F2), Awesomesauce\_1 (F1), BENtherdunthat\_1 (DN1), BotCity\_1 (DN), Brushbloom\_1 (F1), Budski\_1 (DN), Che9d\_1 (F2), CheeseTouch\_1 (DN1), ChickenDinner\_1 (F1), Cornucopia\_1 (F1), Demsculpinboyz\_1 (F2), DocMcStuffins\_1 (F1), Ecliptus\_1 (DN), Emmaloid\_1 (F1), Flathead\_1 (F1), Frankie\_1 (F1), Frickyeh\_1 (DN1), Getalong\_1 (DN1), Girafales\_1 (F1), Hegedechwinu\_1 (F1), Holliday\_1 (DN1), Horus\_1 (DN1), Jabbawokkie\_2 (F2), Job42\_1 (F1), Juice456\_1 (F1), Kamaru\_1 (DN1), Kenna\_1 (DN1), Kimberlium\_1 (F1), Leroy\_1 (DN1), LitninMcQueen\_1 (DN1), LittleShirley\_1 (F1), LordVader\_1 (F), Lutum\_1 (DN1), Malisha\_1 (DN), Misha28\_1 (F1), Mozy\_1 (F1), MulchExplorer\_1 (F1), ODay\_1 (DN), Ogopogo\_2 (F1), Periwinkle\_1 (DN1), Phabuloso\_1 (DN1), Phistory\_1 (DN1), Piper2020\_1 (F1), Plumbus\_1 (F1), Quico\_1 (F1), Rialto\_1 (F1), SilverChicken\_1 (F2), Slim\_1 (F1), Soul22\_1 (F2), Spooky\_1 (DN2), Squiddly\_2 (DN2), Squirty\_1 (F3), Starcevich\_1 (F1), Tchotchke\_1 (F1), TootsiePop\_1 (F1), Totinger\_1 (F1), Whitney\_1 (DN1), Yoshi\_1 (F2), Zapner\_2 (F2),

### Summary by clusters:

There are 7 clusters represented in this pham: DN, F1, F2, F3, F, DN1, DN2,

Info for manual annotations of cluster DN:

- Start number 10 was manually annotated 5 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 10 was manually annotated 15 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 10 was manually annotated 2 times for cluster DN2.

Info for manual annotations of cluster F1:

- Start number 9 was manually annotated 1 time for cluster F1.
- Start number 10 was manually annotated 26 times for cluster F1.

Info for manual annotations of cluster F2:

- Start number 10 was manually annotated 7 times for cluster F2.

Info for manual annotations of cluster F3:

- Start number 10 was manually annotated 1 time for cluster F3.

### **Gene Information:**

Gene: Aloeri\_1 Start: 42, Stop: 374, Start Num: 10

Candidate Starts for Aloeri\_1:

(4, 9), (7, 15), (Start: 10 @42 has 56 MA's), (13, 120), (18, 213), (21, 237), (24, 285), (27, 339), (28, 354),

Gene: Asapag\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Asapag\_1:

(4, 9), (7, 15), (8, 27), (Start: 10 @39 has 56 MA's), (14, 141), (15, 144), (21, 234), (23, 264), (24, 282), (28, 351),

Gene: Avani\_1 Start: 38, Stop: 370, Start Num: 10

Candidate Starts for Avani\_1:

(5, 11), (Start: 10 @38 has 56 MA's), (13, 116), (15, 143), (21, 233), (23, 263), (24, 281), (26, 326), (28, 350),

Gene: Awesomesauce\_1 Start: 42, Stop: 374, Start Num: 10

Candidate Starts for Awesomesauce\_1:

(4, 9), (7, 15), (Start: 10 @42 has 56 MA's), (12, 111), (13, 120), (18, 213), (21, 237), (23, 267), (24, 285), (26, 330), (27, 339), (28, 354),

Gene: BENtherdunthat\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for BENtherdunthat\_1:

(4, 9), (7, 15), (8, 27), (Start: 10 @39 has 56 MA's), (14, 141), (15, 144), (21, 234), (23, 264), (24, 282), (28, 351),

Gene: BotCity\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for BotCity\_1:

(4, 9), (7, 15), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (21, 234), (24, 282), (25, 318), (28, 351),

Gene: Brushbloom\_1 Start: 40, Stop: 372, Start Num: 10

Candidate Starts for Brushbloom\_1:

(3, 7), (6, 13), (Start: 10 @40 has 56 MA's), (12, 109), (13, 118), (18, 211), (24, 283), (26, 328), (27, 337), (28, 352),

Gene: Budski\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Budski\_1:

(4, 9), (7, 15), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (21, 234), (24, 282), (25, 318), (28, 351),

Gene: Che9d\_1 Start: 48, Stop: 380, Start Num: 10

Candidate Starts for Che9d\_1:

(5, 21), (Start: 10 @48 has 56 MA's), (13, 126), (15, 153), (21, 243), (23, 273), (24, 291), (26, 336), (28, 360),

Gene: CheeseTouch\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for CheeseTouch\_1:

(4, 9), (7, 15), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (21, 234), (24, 282), (25, 318), (28, 351),

Gene: ChickenDinner\_1 Start: 42, Stop: 374, Start Num: 10

Candidate Starts for ChickenDinner\_1:

(4, 9), (7, 15), (Start: 10 @42 has 56 MA's), (13, 120), (18, 213), (21, 237), (24, 285), (27, 339), (28, 354),

Gene: Cornucopia\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Cornucopia\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (11, 86), (13, 119), (16, 200), (21, 236), (24, 284), (26, 329), (27, 338), (28, 353),

Gene: Demsculpinboyz\_1 Start: 38, Stop: 370, Start Num: 10

Candidate Starts for Demsculpinboyz\_1:

(5, 11), (Start: 10 @38 has 56 MA's), (13, 116), (15, 143), (21, 233), (23, 263), (24, 281), (26, 326), (28, 350),

Gene: DocMcStuffins\_1 Start: 42, Stop: 374, Start Num: 10

Candidate Starts for DocMcStuffins\_1:

(4, 9), (7, 15), (Start: 10 @42 has 56 MA's), (13, 120), (18, 213), (21, 237), (24, 285), (27, 339), (28, 354),

Gene: Ecliptus\_1 Start: 40, Stop: 372, Start Num: 10

Candidate Starts for Ecliptus\_1:

(6, 13), (Start: 10 @40 has 56 MA's), (15, 145), (16, 199), (17, 208), (18, 211), (19, 220), (21, 235), (23, 265), (25, 319), (28, 352),

Gene: Emmaloid\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Emmaloid\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (13, 119), (18, 212), (21, 236), (24, 284), (27, 338), (28, 353),

Gene: Flathead\_1 Start: 40, Stop: 372, Start Num: 10

Candidate Starts for Flathead\_1:

(3, 7), (6, 13), (Start: 10 @40 has 56 MA's), (12, 109), (13, 118), (18, 211), (24, 283), (26, 328), (27, 337), (28, 352),

Gene: Frankie\_1 Start: 40, Stop: 372, Start Num: 10

Candidate Starts for Frankie\_1:

(3, 7), (6, 13), (Start: 10 @40 has 56 MA's), (12, 109), (13, 118), (18, 211), (24, 283), (26, 328), (27, 337), (28, 352),

Gene: Frickyeah\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Frickyeah\_1:

(4, 9), (7, 15), (8, 27), (Start: 10 @39 has 56 MA's), (14, 141), (15, 144), (21, 234), (23, 264), (24, 282), (28, 351),

Gene: Getalong\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Getalong\_1:

(4, 9), (7, 15), (8, 27), (Start: 10 @39 has 56 MA's), (14, 141), (15, 144), (21, 234), (23, 264), (24, 282), (28, 351),

Gene: Girafales\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Girafales\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (11, 86), (12, 110), (13, 119), (16, 200), (21, 236), (24, 284), (26, 329), (27, 338), (28, 353),

Gene: Hegedechwinu\_1 Start: 40, Stop: 372, Start Num: 10

Candidate Starts for Hegedechwinu\_1:

(3, 7), (6, 13), (Start: 10 @40 has 56 MA's), (12, 109), (13, 118), (18, 211), (24, 283), (26, 328), (27, 337), (28, 352),

Gene: Holliday\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Holliday\_1:

(4, 9), (7, 15), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (21, 234), (24, 282), (25, 318), (28, 351),

Gene: Horus\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Horus\_1:

(4, 9), (7, 15), (8, 27), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (21, 234), (23, 264), (24, 282), (28, 351),

Gene: Jabbawokkie\_2 Start: 561, Stop: 893, Start Num: 10

Candidate Starts for Jabbawokkie\_2:

(3, 528), (Start: 10 @561 has 56 MA's), (21, 756), (23, 786), (24, 804), (26, 849), (28, 873),

Gene: Job42\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Job42\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (13, 119), (18, 212), (24, 284), (26, 329), (27, 338), (28, 353),

Gene: Juice456\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Juice456\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (13, 119), (18, 212), (24, 284), (26, 329), (27, 338), (28, 353),

Gene: Kamaru\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Kamaru\_1:

(4, 9), (7, 15), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (21, 234), (24, 282), (25, 318), (28, 351),

Gene: Kenna\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Kenna\_1:

(4, 9), (7, 15), (8, 27), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (15, 144), (21, 234), (23, 264), (24, 282), (28, 351),

Gene: Kimberlium\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Kimberlium\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (13, 119), (18, 212), (24, 284), (26, 329), (27, 338), (28, 353),

Gene: Leroy\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Leroy\_1:

(4, 9), (7, 15), (8, 27), (Start: 10 @39 has 56 MA's), (14, 141), (15, 144), (21, 234), (23, 264), (24, 282), (28, 351),

Gene: LitninMcQueen\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for LitninMcQueen\_1:

(4, 9), (7, 15), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (21, 234), (24, 282), (25, 318), (28, 351),

Gene: LittleShirley\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for LittleShirley\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (13, 119), (18, 212), (21, 236), (24, 284), (27, 338), (28, 353),

Gene: LordVader\_1 Start: 42, Stop: 374, Start Num: 10

Candidate Starts for LordVader\_1:

(4, 9), (7, 15), (Start: 10 @42 has 56 MA's), (12, 111), (13, 120), (18, 213), (24, 285), (26, 330), (27, 339), (28, 354),

Gene: Lutum\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Lutum\_1:

(4, 9), (7, 15), (8, 27), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (15, 144), (21, 234), (23, 264), (24, 282), (28, 351),

Gene: Malisha\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Malisha\_1:

(4, 9), (7, 15), (Start: 10 @39 has 56 MA's), (13, 117), (17, 207), (21, 234), (23, 264), (24, 282), (25, 318), (28, 351),

Gene: Misha28\_1 Start: 42, Stop: 374, Start Num: 10

Candidate Starts for Misha28\_1:

(4, 9), (7, 15), (Start: 10 @42 has 56 MA's), (13, 120), (18, 213), (21, 237), (24, 285), (27, 339), (28, 354),

Gene: Mova\_1 Start: 41, Stop: 373, Start Num: 9

Candidate Starts for Mova\_1:

(5, 11), (Start: 9 @41 has 1 MA's), (13, 119), (18, 212), (21, 236), (24, 284), (27, 338), (28, 353),

Gene: Mozy\_1 Start: 40, Stop: 372, Start Num: 10

Candidate Starts for Mozy\_1:

(3, 7), (6, 13), (Start: 10 @40 has 56 MA's), (11, 85), (12, 109), (13, 118), (16, 199), (21, 235), (24, 283), (26, 328), (27, 337), (28, 352),

Gene: MulchExplorer\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for MulchExplorer\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (13, 119), (18, 212), (24, 284), (26, 329), (27, 338), (28, 353),

Gene: ODay\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for ODay\_1:

(4, 9), (7, 15), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (21, 234), (24, 282), (25, 318), (28, 351),

Gene: Ogopogo\_2 Start: 299, Stop: 631, Start Num: 10

Candidate Starts for Ogopogo\_2:

(Start: 10 @299 has 56 MA's), (13, 377), (21, 494), (23, 524), (24, 542), (26, 587), (28, 611),

Gene: Periwinkle\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Periwinkle\_1:

(4, 9), (7, 15), (8, 27), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (15, 144), (21, 234), (23, 264), (24, 282), (28, 351),

Gene: Phabuloso\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Phabuloso\_1:

(4, 9), (7, 15), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (21, 234), (24, 282), (25, 318), (28, 351),

Gene: Phistory\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Phistory\_1:

(4, 9), (7, 15), (Start: 10 @39 has 56 MA's), (14, 141), (15, 144), (21, 234), (23, 264), (24, 282), (25, 318), (28, 351),

Gene: Piper2020\_1 Start: 42, Stop: 374, Start Num: 10

Candidate Starts for Piper2020\_1:

(4, 9), (7, 15), (Start: 10 @42 has 56 MA's), (13, 120), (18, 213), (21, 237), (24, 285), (27, 339), (28, 354),

Gene: Plumbus\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Plumbus\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (13, 119), (18, 212), (24, 284), (26, 329), (27, 338), (28, 353),

Gene: Quico\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Quico\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (11, 86), (12, 110), (13, 119), (16, 200), (21, 236), (24, 284), (26, 329), (27, 338), (28, 353),

Gene: Rialto\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Rialto\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (13, 119), (18, 212), (21, 236), (24, 284), (27, 338), (28, 353),

Gene: SilverChicken\_1 Start: 38, Stop: 370, Start Num: 10

Candidate Starts for SilverChicken\_1:

(5, 11), (Start: 10 @38 has 56 MA's), (13, 116), (15, 143), (21, 233), (23, 263), (24, 281), (26, 326), (28, 350),

Gene: Slim\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Slim\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (13, 119), (18, 212), (21, 236), (24, 284), (27, 338), (28, 353),

Gene: Soul22\_1 Start: 38, Stop: 370, Start Num: 10



Candidate Starts for Soul22\_1:

(5, 11), (Start: 10 @38 has 56 MA's), (13, 116), (15, 143), (21, 233), (23, 263), (24, 281), (26, 326), (28, 350),

Gene: Spooky\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Spooky\_1:

(4, 9), (7, 15), (Start: 10 @39 has 56 MA's), (21, 234), (22, 249), (24, 282), (25, 318), (28, 351),

Gene: Squiddly\_2 Start: 730, Stop: 1062, Start Num: 10

Candidate Starts for Squiddly\_2:

(1, 601), (2, 613), (3, 697), (Start: 10 @730 has 56 MA's), (18, 901), (20, 919), (24, 973), (25, 1009), (28, 1042),

Gene: Squirty\_1 Start: 40, Stop: 372, Start Num: 10

Candidate Starts for Squirty\_1:

(3, 7), (6, 13), (Start: 10 @40 has 56 MA's), (12, 109), (13, 118), (18, 211), (23, 265), (24, 283), (26, 328), (27, 337), (28, 352),

Gene: Starcevich\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Starcevich\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (13, 119), (18, 212), (21, 236), (24, 284), (27, 338), (28, 353),

Gene: Tchotchke\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Tchotchke\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (11, 86), (12, 110), (13, 119), (16, 200), (21, 236), (24, 284), (26, 329), (27, 338), (28, 353),

Gene: TootsiePop\_1 Start: 42, Stop: 374, Start Num: 10

Candidate Starts for TootsiePop\_1:

(4, 9), (7, 15), (Start: 10 @42 has 56 MA's), (13, 120), (18, 213), (21, 237), (24, 285), (27, 339), (28, 354),

Gene: Totinger\_1 Start: 41, Stop: 373, Start Num: 10

Candidate Starts for Totinger\_1:

(5, 11), (Start: 10 @41 has 56 MA's), (13, 119), (18, 212), (21, 236), (24, 284), (27, 338), (28, 353),

Gene: Whitney\_1 Start: 39, Stop: 371, Start Num: 10

Candidate Starts for Whitney\_1:

(4, 9), (7, 15), (8, 27), (Start: 10 @39 has 56 MA's), (13, 117), (14, 141), (15, 144), (21, 234), (23, 264), (24, 282), (25, 318), (28, 351),

Gene: Yoshi\_1 Start: 38, Stop: 370, Start Num: 10

Candidate Starts for Yoshi\_1:

(5, 11), (Start: 10 @38 has 56 MA's), (13, 116), (15, 143), (21, 233), (23, 263), (24, 281), (26, 326), (28, 350),

Gene: Zapner\_2 Start: 562, Stop: 894, Start Num: 10

Candidate Starts for Zapner\_2:

(3, 529), (Start: 10 @562 has 56 MA's), (21, 757), (23, 787), (24, 805), (26, 850), (28, 874),