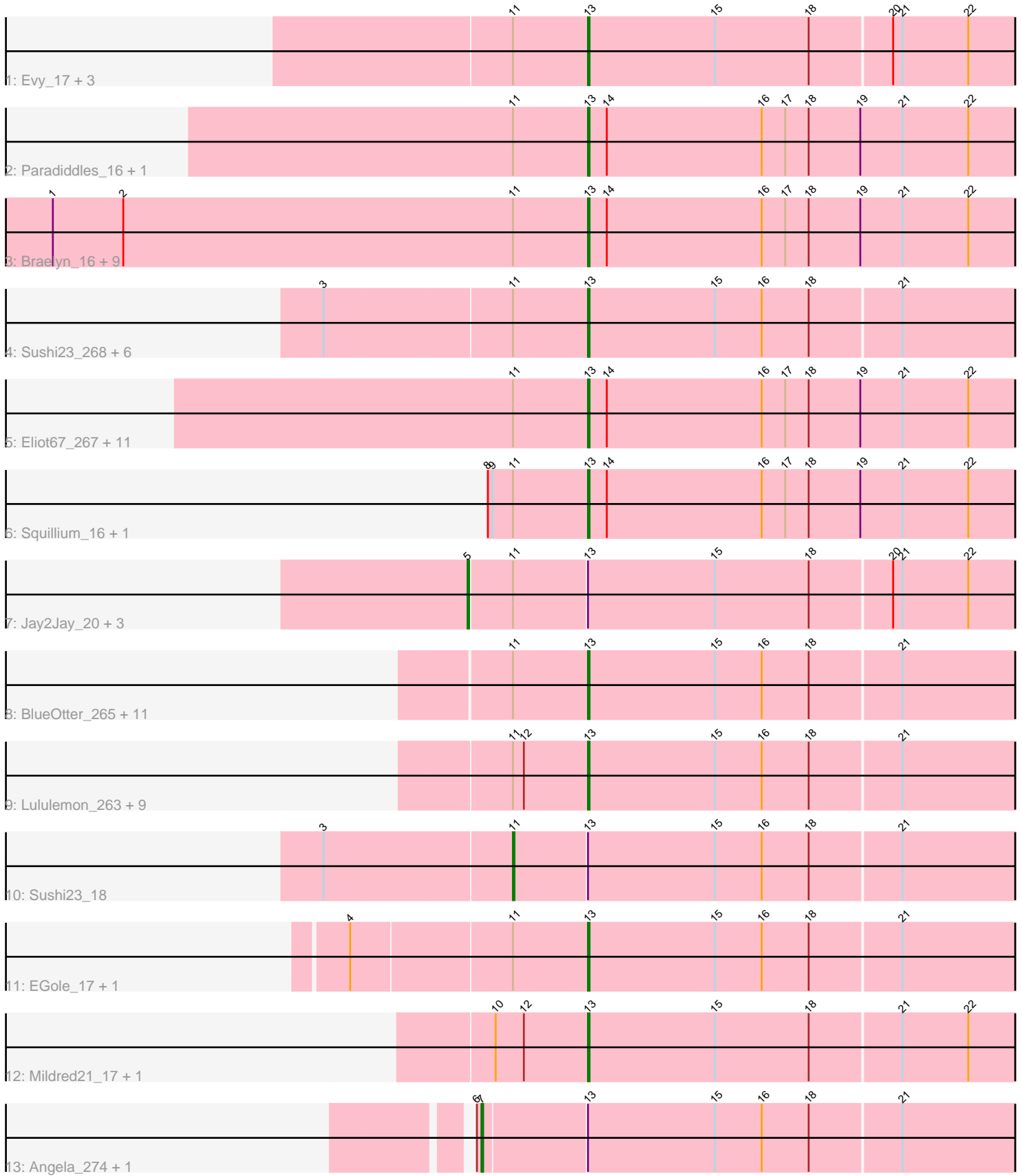


# Pham 294700



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 294700 Report

This analysis was run 04/18/26 on database version 643.

Pham number 294700 has 70 members, 4 are drafts.

Phages represented in each track:

- Track 1 : Evy\_17, Targaryen\_15, Evy\_255, Targaryen\_266
- Track 2 : Paradiddles\_16, Paradiddles\_257
- Track 3 : Braelyn\_16, Navo\_257, Persimmon\_266, Braelyn\_261, WhereRU\_264, Davielle\_15, WhereRU\_15, Davielle\_264, Navo\_15, Persimmon\_15
- Track 4 : Sushi23\_268, Coogler\_263, Larnav\_17, Tribute\_263, Coogler\_17, Tribute\_17, Larnav\_267
- Track 5 : Eliot67\_267, NootNoot\_16, Bartholomune\_16, Liandry\_16, Eliot67\_16, Bartholomune\_266, FreddyDRoo\_16, Liandry\_265, PinkiePie\_266, FreddyDRoo\_269, PinkiePie\_16, NootNoot\_261
- Track 6 : Squillium\_16, Squillium\_268
- Track 7 : Jay2Jay\_20, Jay2Jay\_275, Warpy\_272, Warpy\_20
- Track 8 : BlueOtter\_265, Watermoore\_17, Leo04\_268, Cursive\_15, HangryHippo\_17, Leo04\_17, Cross\_265, Cross\_17, Watermoore\_264, HangryHippo\_265, Cursive\_269, BlueOtter\_17
- Track 9 : Lululemon\_263, PacManQ\_16, Scheme\_271, Pepperwood\_18, PacManQ\_263, Pepperwood\_267, Peebs\_264, Peebs\_17, Lululemon\_16, Scheme\_18
- Track 10 : Sushi23\_18
- Track 11 : EGole\_17, EGole\_271
- Track 12 : Mildred21\_17, Mildred21\_280
- Track 13 : Angela\_274, Angela\_17

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

The start number called the most often in the published annotations is 13, it was called in 59 of the 66 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Bartholomune\_16, Bartholomune\_266, BlueOtter\_17, BlueOtter\_265, Braelyn\_16, Braelyn\_261, Coogler\_17, Coogler\_263, Cross\_17, Cross\_265, Cursive\_15, Cursive\_269, Davielle\_15, Davielle\_264, EGole\_17, EGole\_271, Eliot67\_16, Eliot67\_267, Evy\_17, Evy\_255, FreddyDRoo\_16, FreddyDRoo\_269, HangryHippo\_17, HangryHippo\_265, Larnav\_17, Larnav\_267, Leo04\_17, Leo04\_268, Liandry\_16, Liandry\_265, Lululemon\_16, Lululemon\_263, Mildred21\_17,

Mildred21\_280, Navo\_15, Navo\_257, NootNoot\_16, NootNoot\_261, PacManQ\_16, PacManQ\_263, Paradiddles\_16, Paradiddles\_257, Peebs\_17, Peebs\_264, Pepperwood\_18, Pepperwood\_267, Persimmon\_15, Persimmon\_266, PinkiePie\_16, PinkiePie\_266, Scheme\_18, Scheme\_271, Squillium\_16, Squillium\_268, Sushi23\_268, Targaryen\_15, Targaryen\_266, Tribute\_17, Tribute\_263, Watermoore\_17, Watermoore\_264, WhereRU\_15, WhereRU\_264,

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

- Angela\_17, Angela\_274, Jay2Jay\_20, Jay2Jay\_275, Sushi23\_18, Warpy\_20, Warpy\_272,

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

- 

### Summary by start number:

Start 5:

- Found in 4 of 70 ( 5.7% ) of genes in pham
- Manual Annotations of this start: 4 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jay2Jay\_20 (BE1), Jay2Jay\_275 (BE1), Warpy\_20 (BE1), Warpy\_272 (BE1),

Start 7:

- Found in 2 of 70 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 2 of 66
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Angela\_17 (BE1), Angela\_274 (BE1),

Start 11:

- Found in 66 of 70 ( 94.3% ) of genes in pham
- Manual Annotations of this start: 1 of 66
- Called 1.5% of time when present
- Phage (with cluster) where this start called: Sushi23\_18 (BE1),

Start 13:

- Found in 70 of 70 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 59 of 66
- Called 90.0% of time when present
- Phage (with cluster) where this start called: Bartholomune\_16 (BE1), Bartholomune\_266 (BE1), BlueOtter\_17 (BE1), BlueOtter\_265 (BE1), Braelyn\_16 (BE1), Braelyn\_261 (BE1), Coogler\_17 (BE1), Coogler\_263 (BE1), Cross\_17 (BE1), Cross\_265 (BE1), Cursive\_15 (BE1), Cursive\_269 (BE1), Davielle\_15 (BE1), Davielle\_264 (BE1), EGole\_17 (BE1), EGole\_271 (BE1), Eliot67\_16 (BE1), Eliot67\_267 (BE1), Evy\_17 (BE1), Evy\_255 (BE1), FreddyDRoo\_16 (BE1), FreddyDRoo\_269 (BE1), HangryHippo\_17 (BE1), HangryHippo\_265 (BE1), Larnav\_17 (BE1), Larnav\_267 (BE1), Leo04\_17 (BE1), Leo04\_268 (BE1), Liandry\_16 (BE1), Liandry\_265 (BE1), Lululemon\_16 (BE1), Lululemon\_263 (BE1), Mildred21\_17 (BE1), Mildred21\_280 (BE1), Navo\_15 (BE1), Navo\_257 (BE1), NootNoot\_16 (BE1), NootNoot\_261 (BE1), PacManQ\_16 (BE1), PacManQ\_263 (BE1), Paradiddles\_16 (BE1), Paradiddles\_257 (BE1), Peebs\_17 (BE1), Peebs\_264 (BE1), Pepperwood\_18 (BE1), Pepperwood\_267 (BE1), Persimmon\_15 (BE1), Persimmon\_266 (BE1), PinkiePie\_16 (BE1), PinkiePie\_266 (BE1), Scheme\_18 (BE1), Scheme\_271 (BE1),

Squillium\_16 (BE1), Squillium\_268 (BE1), Sushi23\_268 (BE1), Targaryen\_15 (BE1), Targaryen\_266 (BE1), Tribute\_17 (BE1), Tribute\_263 (BE1), Watermoore\_17 (BE1), Watermoore\_264 (BE1), WhereRU\_15 (BE1), WhereRU\_264 (BE1),

### **Summary by clusters:**

There is one cluster represented in this pham: BE1

Info for manual annotations of cluster BE1:

- Start number 5 was manually annotated 4 times for cluster BE1.
- Start number 7 was manually annotated 2 times for cluster BE1.
- Start number 11 was manually annotated 1 time for cluster BE1.
- Start number 13 was manually annotated 59 times for cluster BE1.

### **Gene Information:**

Gene: Angela\_274 Start: 131229, Stop: 130840, Start Num: 7

Candidate Starts for Angela\_274:

(6, 131232), (Start: 7 @131229 has 2 MA's), (Start: 13 @131166 has 59 MA's), (15, 131085), (16, 131055), (18, 131025), (21, 130968),

Gene: Angela\_17 Start: 8826, Stop: 8437, Start Num: 7

Candidate Starts for Angela\_17:

(6, 8829), (Start: 7 @8826 has 2 MA's), (Start: 13 @8763 has 59 MA's), (15, 8682), (16, 8652), (18, 8622), (21, 8565),

Gene: Bartholomune\_16 Start: 8160, Stop: 7819, Start Num: 13

Candidate Starts for Bartholomune\_16:

(Start: 11 @8208 has 1 MA's), (Start: 13 @8160 has 59 MA's), (14, 8148), (16, 8049), (17, 8034), (18, 8019), (19, 7986), (21, 7959), (22, 7917),

Gene: Bartholomune\_266 Start: 129259, Stop: 128918, Start Num: 13

Candidate Starts for Bartholomune\_266:

(Start: 11 @129307 has 1 MA's), (Start: 13 @129259 has 59 MA's), (14, 129247), (16, 129148), (17, 129133), (18, 129118), (19, 129085), (21, 129058), (22, 129016),

Gene: BlueOtter\_265 Start: 129541, Stop: 129215, Start Num: 13

Candidate Starts for BlueOtter\_265:

(Start: 11 @129586 has 1 MA's), (Start: 13 @129541 has 59 MA's), (15, 129460), (16, 129430), (18, 129400), (21, 129343),

Gene: BlueOtter\_17 Start: 8454, Stop: 8128, Start Num: 13

Candidate Starts for BlueOtter\_17:

(Start: 11 @8499 has 1 MA's), (Start: 13 @8454 has 59 MA's), (15, 8373), (16, 8343), (18, 8313), (21, 8256),

Gene: Braelyn\_16 Start: 8203, Stop: 7862, Start Num: 13

Candidate Starts for Braelyn\_16:

(1, 8545), (2, 8500), (Start: 11 @8251 has 1 MA's), (Start: 13 @8203 has 59 MA's), (14, 8191), (16, 8092), (17, 8077), (18, 8062), (19, 8029), (21, 8002), (22, 7960),

Gene: Braelyn\_261 Start: 128613, Stop: 128272, Start Num: 13

Candidate Starts for Braelyn\_261:

(1, 128955), (2, 128910), (Start: 11 @128661 has 1 MA's), (Start: 13 @128613 has 59 MA's), (14, 128601), (16, 128502), (17, 128487), (18, 128472), (19, 128439), (21, 128412), (22, 128370),

Gene: Coogler\_263 Start: 129966, Stop: 129640, Start Num: 13

Candidate Starts for Coogler\_263:

(3, 130128), (Start: 11 @130011 has 1 MA's), (Start: 13 @129966 has 59 MA's), (15, 129885), (16, 129855), (18, 129825), (21, 129768),

Gene: Coogler\_17 Start: 8454, Stop: 8128, Start Num: 13

Candidate Starts for Coogler\_17:

(3, 8616), (Start: 11 @8499 has 1 MA's), (Start: 13 @8454 has 59 MA's), (15, 8373), (16, 8343), (18, 8313), (21, 8256),

Gene: Cross\_265 Start: 130187, Stop: 129861, Start Num: 13

Candidate Starts for Cross\_265:

(Start: 11 @130232 has 1 MA's), (Start: 13 @130187 has 59 MA's), (15, 130106), (16, 130076), (18, 130046), (21, 129989),

Gene: Cross\_17 Start: 8455, Stop: 8129, Start Num: 13

Candidate Starts for Cross\_17:

(Start: 11 @8500 has 1 MA's), (Start: 13 @8455 has 59 MA's), (15, 8374), (16, 8344), (18, 8314), (21, 8257),

Gene: Cursive\_15 Start: 7272, Stop: 6946, Start Num: 13

Candidate Starts for Cursive\_15:

(Start: 11 @7317 has 1 MA's), (Start: 13 @7272 has 59 MA's), (15, 7191), (16, 7161), (18, 7131), (21, 7074),

Gene: Cursive\_269 Start: 129281, Stop: 128955, Start Num: 13

Candidate Starts for Cursive\_269:

(Start: 11 @129326 has 1 MA's), (Start: 13 @129281 has 59 MA's), (15, 129200), (16, 129170), (18, 129140), (21, 129083),

Gene: Davielle\_15 Start: 7989, Stop: 7648, Start Num: 13

Candidate Starts for Davielle\_15:

(1, 8331), (2, 8286), (Start: 11 @8037 has 1 MA's), (Start: 13 @7989 has 59 MA's), (14, 7977), (16, 7878), (17, 7863), (18, 7848), (19, 7815), (21, 7788), (22, 7746),

Gene: Davielle\_264 Start: 129149, Stop: 128808, Start Num: 13

Candidate Starts for Davielle\_264:

(1, 129491), (2, 129446), (Start: 11 @129197 has 1 MA's), (Start: 13 @129149 has 59 MA's), (14, 129137), (16, 129038), (17, 129023), (18, 129008), (19, 128975), (21, 128948), (22, 128906),

Gene: EGole\_17 Start: 8875, Stop: 8549, Start Num: 13

Candidate Starts for EGole\_17:

(4, 9019), (Start: 11 @8920 has 1 MA's), (Start: 13 @8875 has 59 MA's), (15, 8794), (16, 8764), (18, 8734), (21, 8677),

Gene: EGole\_271 Start: 133187, Stop: 132861, Start Num: 13

Candidate Starts for EGole\_271:

(4, 133331), (Start: 11 @133232 has 1 MA's), (Start: 13 @133187 has 59 MA's), (15, 133106), (16, 133076), (18, 133046), (21, 132989),

Gene: Eliot67\_267 Start: 128974, Stop: 128633, Start Num: 13

Candidate Starts for Eliot67\_267:

(Start: 11 @129022 has 1 MA's), (Start: 13 @128974 has 59 MA's), (14, 128962), (16, 128863), (17, 128848), (18, 128833), (19, 128800), (21, 128773), (22, 128731),

Gene: Eliot67\_16 Start: 8160, Stop: 7819, Start Num: 13

Candidate Starts for Eliot67\_16:

(Start: 11 @8208 has 1 MA's), (Start: 13 @8160 has 59 MA's), (14, 8148), (16, 8049), (17, 8034), (18, 8019), (19, 7986), (21, 7959), (22, 7917),

Gene: Evy\_17 Start: 8633, Stop: 8307, Start Num: 13

Candidate Starts for Evy\_17:

(Start: 11 @8678 has 1 MA's), (Start: 13 @8633 has 59 MA's), (15, 8552), (18, 8492), (20, 8441), (21, 8435), (22, 8393),

Gene: Evy\_255 Start: 130362, Stop: 130036, Start Num: 13

Candidate Starts for Evy\_255:

(Start: 11 @130407 has 1 MA's), (Start: 13 @130362 has 59 MA's), (15, 130281), (18, 130221), (20, 130170), (21, 130164), (22, 130122),

Gene: FreddyDRoo\_16 Start: 8160, Stop: 7819, Start Num: 13

Candidate Starts for FreddyDRoo\_16:

(Start: 11 @8208 has 1 MA's), (Start: 13 @8160 has 59 MA's), (14, 8148), (16, 8049), (17, 8034), (18, 8019), (19, 7986), (21, 7959), (22, 7917),

Gene: FreddyDRoo\_269 Start: 128974, Stop: 128633, Start Num: 13

Candidate Starts for FreddyDRoo\_269:

(Start: 11 @129022 has 1 MA's), (Start: 13 @128974 has 59 MA's), (14, 128962), (16, 128863), (17, 128848), (18, 128833), (19, 128800), (21, 128773), (22, 128731),

Gene: HangryHippo\_17 Start: 8454, Stop: 8128, Start Num: 13

Candidate Starts for HangryHippo\_17:

(Start: 11 @8499 has 1 MA's), (Start: 13 @8454 has 59 MA's), (15, 8373), (16, 8343), (18, 8313), (21, 8256),

Gene: HangryHippo\_265 Start: 129541, Stop: 129215, Start Num: 13

Candidate Starts for HangryHippo\_265:

(Start: 11 @129586 has 1 MA's), (Start: 13 @129541 has 59 MA's), (15, 129460), (16, 129430), (18, 129400), (21, 129343),

Gene: Jay2Jay\_20 Start: 8895, Stop: 8497, Start Num: 5

Candidate Starts for Jay2Jay\_20:

(Start: 5 @8895 has 4 MA's), (Start: 11 @8868 has 1 MA's), (Start: 13 @8823 has 59 MA's), (15, 8742), (18, 8682), (20, 8631), (21, 8625), (22, 8583),

Gene: Jay2Jay\_275 Start: 130988, Stop: 130590, Start Num: 5

Candidate Starts for Jay2Jay\_275:

(Start: 5 @130988 has 4 MA's), (Start: 11 @130961 has 1 MA's), (Start: 13 @130916 has 59 MA's), (15, 130835), (18, 130775), (20, 130724), (21, 130718), (22, 130676),

Gene: Larnav\_17 Start: 8454, Stop: 8128, Start Num: 13

Candidate Starts for Larnav\_17:

(3, 8616), (Start: 11 @8499 has 1 MA's), (Start: 13 @8454 has 59 MA's), (15, 8373), (16, 8343), (18, 8313), (21, 8256),

Gene: Larnav\_267 Start: 130459, Stop: 130133, Start Num: 13

Candidate Starts for Larnav\_267:

(3, 130621), (Start: 11 @130504 has 1 MA's), (Start: 13 @130459 has 59 MA's), (15, 130378), (16, 130348), (18, 130318), (21, 130261),

Gene: Leo04\_268 Start: 130571, Stop: 130245, Start Num: 13

Candidate Starts for Leo04\_268:

(Start: 11 @130616 has 1 MA's), (Start: 13 @130571 has 59 MA's), (15, 130490), (16, 130460), (18, 130430), (21, 130373),

Gene: Leo04\_17 Start: 8453, Stop: 8127, Start Num: 13

Candidate Starts for Leo04\_17:

(Start: 11 @8498 has 1 MA's), (Start: 13 @8453 has 59 MA's), (15, 8372), (16, 8342), (18, 8312), (21, 8255),

Gene: Liandry\_16 Start: 8159, Stop: 7818, Start Num: 13

Candidate Starts for Liandry\_16:

(Start: 11 @8207 has 1 MA's), (Start: 13 @8159 has 59 MA's), (14, 8147), (16, 8048), (17, 8033), (18, 8018), (19, 7985), (21, 7958), (22, 7916),

Gene: Liandry\_265 Start: 129680, Stop: 129339, Start Num: 13

Candidate Starts for Liandry\_265:

(Start: 11 @129728 has 1 MA's), (Start: 13 @129680 has 59 MA's), (14, 129668), (16, 129569), (17, 129554), (18, 129539), (19, 129506), (21, 129479), (22, 129437),

Gene: Lululemon\_263 Start: 128726, Stop: 128400, Start Num: 13

Candidate Starts for Lululemon\_263:

(Start: 11 @128771 has 1 MA's), (12, 128765), (Start: 13 @128726 has 59 MA's), (15, 128645), (16, 128615), (18, 128585), (21, 128528),

Gene: Lululemon\_16 Start: 7834, Stop: 7508, Start Num: 13

Candidate Starts for Lululemon\_16:

(Start: 11 @7879 has 1 MA's), (12, 7873), (Start: 13 @7834 has 59 MA's), (15, 7753), (16, 7723), (18, 7693), (21, 7636),

Gene: Mildred21\_17 Start: 8348, Stop: 8022, Start Num: 13

Candidate Starts for Mildred21\_17:

(10, 8405), (12, 8387), (Start: 13 @8348 has 59 MA's), (15, 8267), (18, 8207), (21, 8150), (22, 8108),

Gene: Mildred21\_280 Start: 129506, Stop: 129180, Start Num: 13

Candidate Starts for Mildred21\_280:

(10, 129563), (12, 129545), (Start: 13 @129506 has 59 MA's), (15, 129425), (18, 129365), (21, 129308), (22, 129266),

Gene: Navo\_257 Start: 127583, Stop: 127242, Start Num: 13

Candidate Starts for Navo\_257:

(1, 127925), (2, 127880), (Start: 11 @127631 has 1 MA's), (Start: 13 @127583 has 59 MA's), (14, 127571), (16, 127472), (17, 127457), (18, 127442), (19, 127409), (21, 127382), (22, 127340),

Gene: Navo\_15 Start: 7958, Stop: 7617, Start Num: 13

Candidate Starts for Navo\_15:

(1, 8300), (2, 8255), (Start: 11 @8006 has 1 MA's), (Start: 13 @7958 has 59 MA's), (14, 7946), (16, 7847), (17, 7832), (18, 7817), (19, 7784), (21, 7757), (22, 7715),

Gene: NootNoot\_16 Start: 8170, Stop: 7829, Start Num: 13

Candidate Starts for NootNoot\_16:

(Start: 11 @8218 has 1 MA's), (Start: 13 @8170 has 59 MA's), (14, 8158), (16, 8059), (17, 8044), (18, 8029), (19, 7996), (21, 7969), (22, 7927),

Gene: NootNoot\_261 Start: 128469, Stop: 128128, Start Num: 13

Candidate Starts for NootNoot\_261:

(Start: 11 @128517 has 1 MA's), (Start: 13 @128469 has 59 MA's), (14, 128457), (16, 128358), (17, 128343), (18, 128328), (19, 128295), (21, 128268), (22, 128226),

Gene: PacManQ\_16 Start: 7834, Stop: 7508, Start Num: 13

Candidate Starts for PacManQ\_16:

(Start: 11 @7879 has 1 MA's), (12, 7873), (Start: 13 @7834 has 59 MA's), (15, 7753), (16, 7723), (18, 7693), (21, 7636),

Gene: PacManQ\_263 Start: 128726, Stop: 128400, Start Num: 13

Candidate Starts for PacManQ\_263:

(Start: 11 @128771 has 1 MA's), (12, 128765), (Start: 13 @128726 has 59 MA's), (15, 128645), (16, 128615), (18, 128585), (21, 128528),

Gene: Paradiddles\_16 Start: 8160, Stop: 7819, Start Num: 13

Candidate Starts for Paradiddles\_16:

(Start: 11 @8208 has 1 MA's), (Start: 13 @8160 has 59 MA's), (14, 8148), (16, 8049), (17, 8034), (18, 8019), (19, 7986), (21, 7959), (22, 7917),

Gene: Paradiddles\_257 Start: 130868, Stop: 130527, Start Num: 13

Candidate Starts for Paradiddles\_257:

(Start: 11 @130916 has 1 MA's), (Start: 13 @130868 has 59 MA's), (14, 130856), (16, 130757), (17, 130742), (18, 130727), (19, 130694), (21, 130667), (22, 130625),

Gene: Peebs\_264 Start: 130428, Stop: 130102, Start Num: 13

Candidate Starts for Peebs\_264:

(Start: 11 @130473 has 1 MA's), (12, 130467), (Start: 13 @130428 has 59 MA's), (15, 130347), (16, 130317), (18, 130287), (21, 130230),

Gene: Peebs\_17 Start: 8453, Stop: 8127, Start Num: 13

Candidate Starts for Peebs\_17:

(Start: 11 @8498 has 1 MA's), (12, 8492), (Start: 13 @8453 has 59 MA's), (15, 8372), (16, 8342), (18, 8312), (21, 8255),

Gene: Pepperwood\_18 Start: 8608, Stop: 8282, Start Num: 13

Candidate Starts for Pepperwood\_18:

(Start: 11 @8653 has 1 MA's), (12, 8647), (Start: 13 @8608 has 59 MA's), (15, 8527), (16, 8497), (18, 8467), (21, 8410),

Gene: Pepperwood\_267 Start: 130393, Stop: 130067, Start Num: 13

Candidate Starts for Pepperwood\_267:

(Start: 11 @130438 has 1 MA's), (12, 130432), (Start: 13 @130393 has 59 MA's), (15, 130312), (16, 130282), (18, 130252), (21, 130195),

Gene: Persimmon\_266 Start: 128800, Stop: 128459, Start Num: 13

Candidate Starts for Persimmon\_266:

(1, 129142), (2, 129097), (Start: 11 @128848 has 1 MA's), (Start: 13 @128800 has 59 MA's), (14, 128788), (16, 128689), (17, 128674), (18, 128659), (19, 128626), (21, 128599), (22, 128557),

Gene: Persimmon\_15 Start: 7989, Stop: 7648, Start Num: 13

Candidate Starts for Persimmon\_15:

(1, 8331), (2, 8286), (Start: 11 @8037 has 1 MA's), (Start: 13 @7989 has 59 MA's), (14, 7977), (16, 7878), (17, 7863), (18, 7848), (19, 7815), (21, 7788), (22, 7746),

Gene: PinkiePie\_266 Start: 129681, Stop: 129340, Start Num: 13

Candidate Starts for PinkiePie\_266:

(Start: 11 @129729 has 1 MA's), (Start: 13 @129681 has 59 MA's), (14, 129669), (16, 129570), (17, 129555), (18, 129540), (19, 129507), (21, 129480), (22, 129438),

Gene: PinkiePie\_16 Start: 8160, Stop: 7819, Start Num: 13

Candidate Starts for PinkiePie\_16:

(Start: 11 @8208 has 1 MA's), (Start: 13 @8160 has 59 MA's), (14, 8148), (16, 8049), (17, 8034), (18, 8019), (19, 7986), (21, 7959), (22, 7917),

Gene: Scheme\_271 Start: 131803, Stop: 131477, Start Num: 13

Candidate Starts for Scheme\_271:

(Start: 11 @131848 has 1 MA's), (12, 131842), (Start: 13 @131803 has 59 MA's), (15, 131722), (16, 131692), (18, 131662), (21, 131605),

Gene: Scheme\_18 Start: 8608, Stop: 8282, Start Num: 13

Candidate Starts for Scheme\_18:

(Start: 11 @8653 has 1 MA's), (12, 8647), (Start: 13 @8608 has 59 MA's), (15, 8527), (16, 8497), (18, 8467), (21, 8410),

Gene: Squillium\_16 Start: 8160, Stop: 7819, Start Num: 13

Candidate Starts for Squillium\_16:

(8, 8223), (9, 8220), (Start: 11 @8208 has 1 MA's), (Start: 13 @8160 has 59 MA's), (14, 8148), (16, 8049), (17, 8034), (18, 8019), (19, 7986), (21, 7959), (22, 7917),

Gene: Squillium\_268 Start: 129684, Stop: 129343, Start Num: 13

Candidate Starts for Squillium\_268:

(8, 129747), (9, 129744), (Start: 11 @129732 has 1 MA's), (Start: 13 @129684 has 59 MA's), (14, 129672), (16, 129573), (17, 129558), (18, 129543), (19, 129510), (21, 129483), (22, 129441),

Gene: Sushi23\_268 Start: 131297, Stop: 130971, Start Num: 13

Candidate Starts for Sushi23\_268:

(3, 131459), (Start: 11 @131342 has 1 MA's), (Start: 13 @131297 has 59 MA's), (15, 131216), (16, 131186), (18, 131156), (21, 131099),

Gene: Sushi23\_18 Start: 8499, Stop: 8128, Start Num: 11

Candidate Starts for Sushi23\_18:

(3, 8616), (Start: 11 @8499 has 1 MA's), (Start: 13 @8454 has 59 MA's), (15, 8373), (16, 8343), (18, 8313), (21, 8256),

Gene: Targaryen\_15 Start: 8629, Stop: 8303, Start Num: 13  
Candidate Starts for Targaryen\_15:  
(Start: 11 @8674 has 1 MA's), (Start: 13 @8629 has 59 MA's), (15, 8548), (18, 8488), (20, 8437), (21, 8431), (22, 8389),

Gene: Targaryen\_266 Start: 132305, Stop: 131979, Start Num: 13  
Candidate Starts for Targaryen\_266:  
(Start: 11 @132350 has 1 MA's), (Start: 13 @132305 has 59 MA's), (15, 132224), (18, 132164), (20, 132113), (21, 132107), (22, 132065),

Gene: Tribute\_263 Start: 130998, Stop: 130672, Start Num: 13  
Candidate Starts for Tribute\_263:  
(3, 131160), (Start: 11 @131043 has 1 MA's), (Start: 13 @130998 has 59 MA's), (15, 130917), (16, 130887), (18, 130857), (21, 130800),

Gene: Tribute\_17 Start: 8454, Stop: 8128, Start Num: 13  
Candidate Starts for Tribute\_17:  
(3, 8616), (Start: 11 @8499 has 1 MA's), (Start: 13 @8454 has 59 MA's), (15, 8373), (16, 8343), (18, 8313), (21, 8256),

Gene: Warpy\_272 Start: 130454, Stop: 130056, Start Num: 5  
Candidate Starts for Warpy\_272:  
(Start: 5 @130454 has 4 MA's), (Start: 11 @130427 has 1 MA's), (Start: 13 @130382 has 59 MA's), (15, 130301), (18, 130241), (20, 130190), (21, 130184), (22, 130142),

Gene: Warpy\_20 Start: 8916, Stop: 8518, Start Num: 5  
Candidate Starts for Warpy\_20:  
(Start: 5 @8916 has 4 MA's), (Start: 11 @8889 has 1 MA's), (Start: 13 @8844 has 59 MA's), (15, 8763), (18, 8703), (20, 8652), (21, 8646), (22, 8604),

Gene: Watermoore\_17 Start: 8455, Stop: 8129, Start Num: 13  
Candidate Starts for Watermoore\_17:  
(Start: 11 @8500 has 1 MA's), (Start: 13 @8455 has 59 MA's), (15, 8374), (16, 8344), (18, 8314), (21, 8257),

Gene: Watermoore\_264 Start: 131051, Stop: 130725, Start Num: 13  
Candidate Starts for Watermoore\_264:  
(Start: 11 @131096 has 1 MA's), (Start: 13 @131051 has 59 MA's), (15, 130970), (16, 130940), (18, 130910), (21, 130853),

Gene: WhereRU\_264 Start: 129134, Stop: 128793, Start Num: 13  
Candidate Starts for WhereRU\_264:  
(1, 129476), (2, 129431), (Start: 11 @129182 has 1 MA's), (Start: 13 @129134 has 59 MA's), (14, 129122), (16, 129023), (17, 129008), (18, 128993), (19, 128960), (21, 128933), (22, 128891),

Gene: WhereRU\_15 Start: 7989, Stop: 7648, Start Num: 13  
Candidate Starts for WhereRU\_15:  
(1, 8331), (2, 8286), (Start: 11 @8037 has 1 MA's), (Start: 13 @7989 has 59 MA's), (14, 7977), (16, 7878), (17, 7863), (18, 7848), (19, 7815), (21, 7788), (22, 7746),