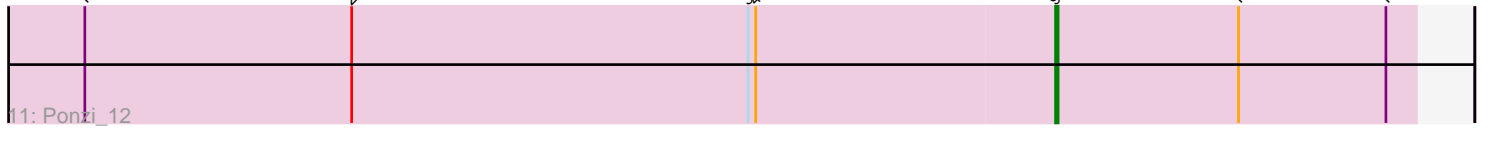
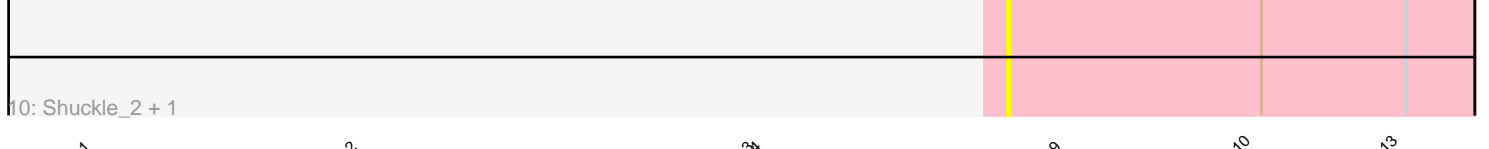
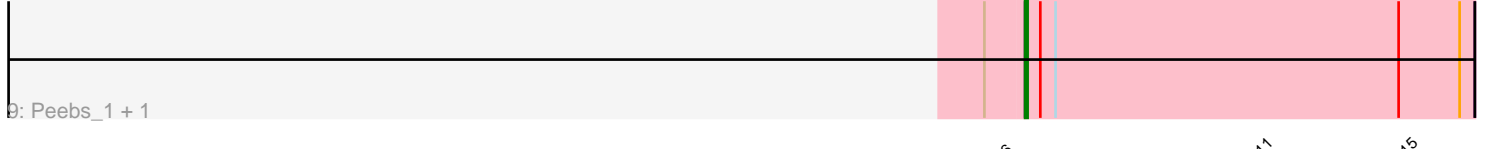
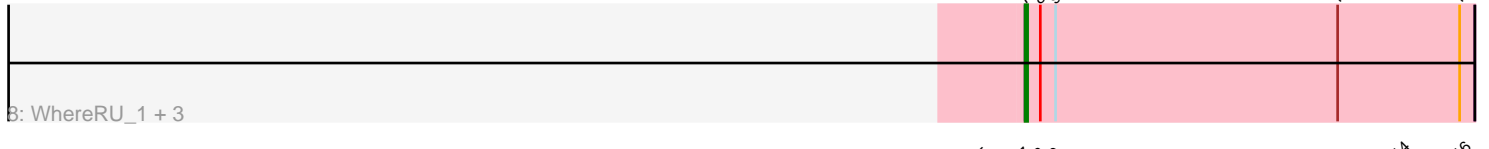
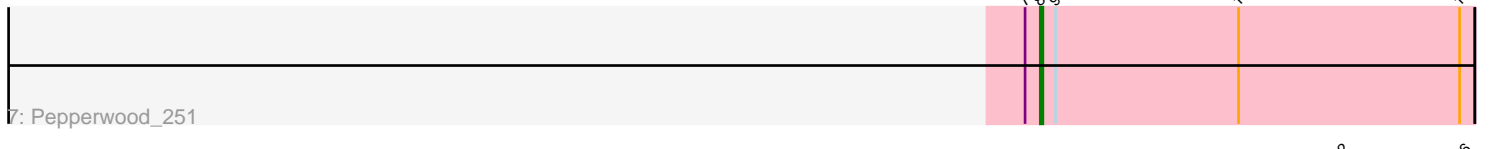
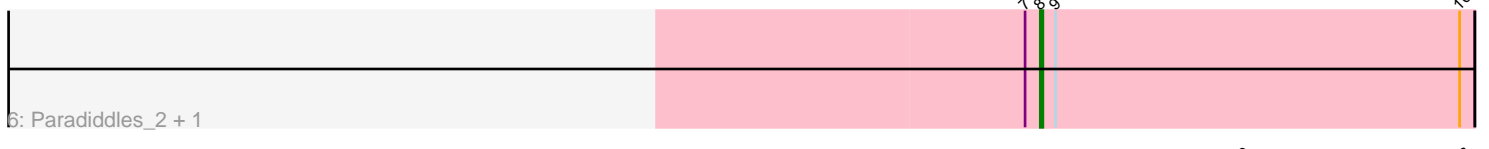
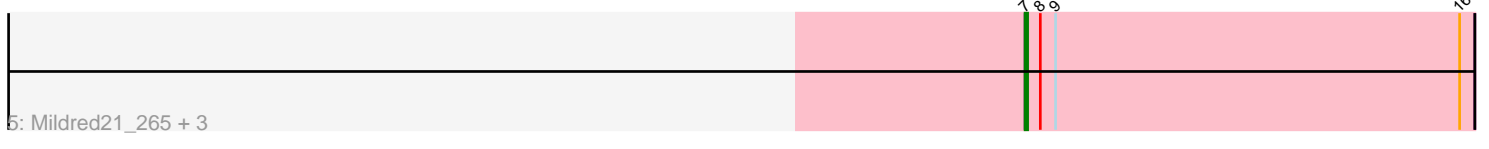
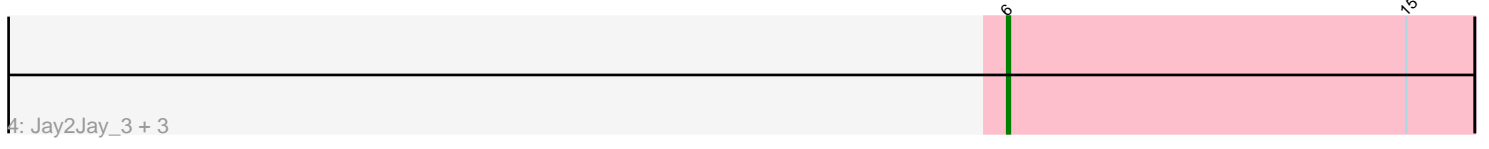
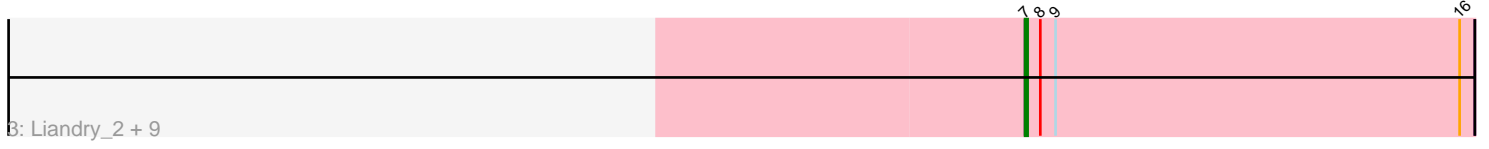
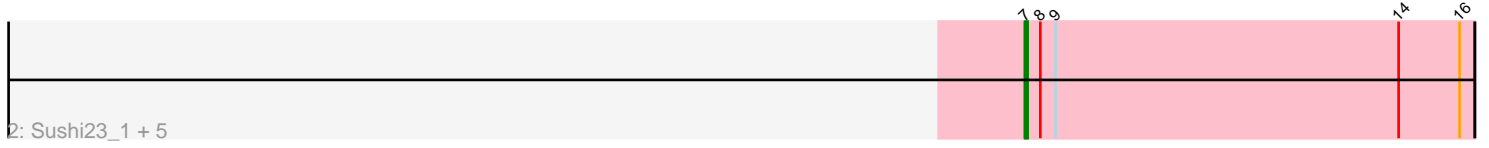
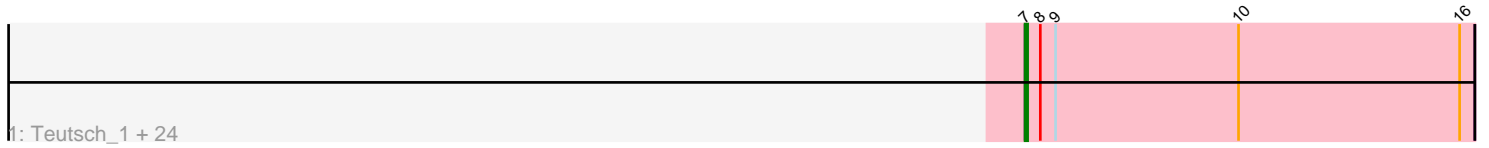


Pham 202951



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 202951 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202951 has 61 members, 4 are drafts.

Phages represented in each track:

- Track 1 : Teutsch\_1, Persimmon\_1, Watermoore\_248, BlueOtter\_249, PacManQ\_248, Leo04\_252, PacManQ\_1, Lululemon\_248, Larnav\_251, Larnav\_1, Scheme\_2, Cursive\_255, Cross\_249, Leo04\_1, Cursive\_1, BlueOtter\_1, HangryHippo\_249, HangryHippo\_1, Pepperwood\_2, Lululemon\_1, Persimmon\_252, Cross\_1, Teutsch\_248, Scheme\_255, Watermoore\_1
- Track 2 : Sushi23\_1, Tribute\_1, Tribute\_247, Sushi23\_252, Samisti12\_252, Samisti12\_1
- Track 3 : Liandry\_2, PinkiePie\_2, Squillium\_254, NootNoot\_247, Liandry\_251, Bartholomune\_252, Bartholomune\_2, PinkiePie\_252, NootNoot\_2, Squillium\_2
- Track 4 : Jay2Jay\_3, Warpy\_3, Jay2Jay\_258, Warpy\_255
- Track 5 : Mildred21\_265, Braelyn\_247, Braelyn\_2, Mildred21\_2
- Track 6 : Paradiddles\_2, Paradiddles\_243
- Track 7 : Pepperwood\_251
- Track 8 : WhereRU\_1, WhereRU\_250, Navo\_1, Navo\_243
- Track 9 : Peebs\_1, Peebs\_248
- Track 10 : Shuckle\_2, Shuckle\_255
- Track 11 : Ponzi\_12

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

The start number called the most often in the published annotations is 7, it was called in 49 of the 57 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Bartholomune\_2, Bartholomune\_252, BlueOtter\_1, BlueOtter\_249, Braelyn\_2, Braelyn\_247, Cross\_1, Cross\_249, Cursive\_1, Cursive\_255, HangryHippo\_1, HangryHippo\_249, Larnav\_1, Larnav\_251, Leo04\_1, Leo04\_252, Liandry\_2, Liandry\_251, Lululemon\_1, Lululemon\_248, Mildred21\_2, Mildred21\_265, Navo\_1, Navo\_243, NootNoot\_2, NootNoot\_247, PacManQ\_1, PacManQ\_248, Peebs\_1, Peebs\_248, Pepperwood\_2, Persimmon\_1, Persimmon\_252, PinkiePie\_2, PinkiePie\_252, Samisti12\_1, Samisti12\_252, Scheme\_2, Scheme\_255, Squillium\_2, Squillium\_254, Sushi23\_1, Sushi23\_252, Teutsch\_1, Teutsch\_248, Tribute\_1, Tribute\_247, Watermoore\_1, Watermoore\_248, WhereRU\_1, WhereRU\_250,

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

- Paradiddles\_2, Paradiddles\_243, Pepperwood\_251,

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

- Jay2Jay\_258, Jay2Jay\_3, Ponzi\_12, Shuckle\_2, Shuckle\_255, Warpy\_255, Warpy\_3,

### Summary by start number:

Start 6:

- Found in 6 of 61 ( 9.8% ) of genes in pham
- Manual Annotations of this start: 4 of 57
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Jay2Jay\_258 (BE1), Jay2Jay\_3 (BE1), Shuckle\_2 (BE1), Shuckle\_255 (BE1), Warpy\_255 (BE1), Warpy\_3 (BE1),

Start 7:

- Found in 54 of 61 ( 88.5% ) of genes in pham
- Manual Annotations of this start: 49 of 57
- Called 94.4% of time when present
- Phage (with cluster) where this start called: Bartholomune\_2 (BE1), Bartholomune\_252 (BE1), BlueOtter\_1 (BE1), BlueOtter\_249 (BE1), Braelyn\_2 (BE1), Braelyn\_247 (BE1), Cross\_1 (BE1), Cross\_249 (BE1), Cursive\_1 (BE1), Cursive\_255 (BE1), HangryHippo\_1 (BE1), HangryHippo\_249 (BE1), Larnav\_1 (BE1), Larnav\_251 (BE1), Leo04\_1 (BE1), Leo04\_252 (BE1), Liandry\_2 (BE1), Liandry\_251 (BE1), Lululemon\_1 (BE1), Lululemon\_248 (BE1), Mildred21\_2 (BE1), Mildred21\_265 (BE1), Navo\_1 (BE1), Navo\_243 (BE1), NootNoot\_2 (BE1), NootNoot\_247 (BE1), PacManQ\_1 (BE1), PacManQ\_248 (BE1), Peebs\_1 (BE1), Peebs\_248 (BE1), Pepperwood\_2 (BE1), Persimmon\_1 (BE1), Persimmon\_252 (BE1), PinkiePie\_2 (BE1), PinkiePie\_252 (BE1), Samisti12\_1 (BE1), Samisti12\_252 (BE1), Scheme\_2 (BE1), Scheme\_255 (BE1), Squillium\_2 (BE1), Squillium\_254 (BE1), Sushi23\_1 (BE1), Sushi23\_252 (BE1), Teutsch\_1 (BE1), Teutsch\_248 (BE1), Tribute\_1 (BE1), Tribute\_247 (BE1), Watermoore\_1 (BE1), Watermoore\_248 (BE1), WhereRU\_1 (BE1), WhereRU\_250 (BE1),

Start 8:

- Found in 54 of 61 ( 88.5% ) of genes in pham
- Manual Annotations of this start: 3 of 57
- Called 5.6% of time when present
- Phage (with cluster) where this start called: Paradiddles\_2 (BE1), Paradiddles\_243 (BE1), Pepperwood\_251 (BE1),

Start 9:

- Found in 55 of 61 ( 90.2% ) of genes in pham
- Manual Annotations of this start: 1 of 57
- Called 1.8% of time when present
- Phage (with cluster) where this start called: Ponzi\_12 (singleton),

### Summary by clusters:

There are 2 clusters represented in this pham: singleton, BE1,

Info for manual annotations of cluster BE1:

- Start number 6 was manually annotated 4 times for cluster BE1.
- Start number 7 was manually annotated 49 times for cluster BE1.
- Start number 8 was manually annotated 3 times for cluster BE1.

### **Gene Information:**

Gene: Bartholomune\_252 Start: 122372, Stop: 122196, Start Num: 7

Candidate Starts for Bartholomune\_252:

(Start: 7 @122372 has 49 MA's), (Start: 8 @122366 has 3 MA's), (Start: 9 @122360 has 1 MA's), (16, 122201),

Gene: Bartholomune\_2 Start: 1273, Stop: 1097, Start Num: 7

Candidate Starts for Bartholomune\_2:

(Start: 7 @1273 has 49 MA's), (Start: 8 @1267 has 3 MA's), (Start: 9 @1261 has 1 MA's), (16, 1102),

Gene: BlueOtter\_249 Start: 122167, Stop: 121991, Start Num: 7

Candidate Starts for BlueOtter\_249:

(Start: 7 @122167 has 49 MA's), (Start: 8 @122161 has 3 MA's), (Start: 9 @122155 has 1 MA's), (10, 122083), (16, 121996),

Gene: BlueOtter\_1 Start: 1080, Stop: 904, Start Num: 7

Candidate Starts for BlueOtter\_1:

(Start: 7 @1080 has 49 MA's), (Start: 8 @1074 has 3 MA's), (Start: 9 @1068 has 1 MA's), (10, 996), (16, 909),

Gene: Braelyn\_247 Start: 121694, Stop: 121518, Start Num: 7

Candidate Starts for Braelyn\_247:

(Start: 7 @121694 has 49 MA's), (Start: 8 @121688 has 3 MA's), (Start: 9 @121682 has 1 MA's), (16, 121523),

Gene: Braelyn\_2 Start: 1284, Stop: 1108, Start Num: 7

Candidate Starts for Braelyn\_2:

(Start: 7 @1284 has 49 MA's), (Start: 8 @1278 has 3 MA's), (Start: 9 @1272 has 1 MA's), (16, 1113),

Gene: Cross\_249 Start: 122812, Stop: 122636, Start Num: 7

Candidate Starts for Cross\_249:

(Start: 7 @122812 has 49 MA's), (Start: 8 @122806 has 3 MA's), (Start: 9 @122800 has 1 MA's), (10, 122728), (16, 122641),

Gene: Cross\_1 Start: 1080, Stop: 904, Start Num: 7

Candidate Starts for Cross\_1:

(Start: 7 @1080 has 49 MA's), (Start: 8 @1074 has 3 MA's), (Start: 9 @1068 has 1 MA's), (10, 996), (16, 909),

Gene: Cursive\_255 Start: 123089, Stop: 122913, Start Num: 7

Candidate Starts for Cursive\_255:

(Start: 7 @123089 has 49 MA's), (Start: 8 @123083 has 3 MA's), (Start: 9 @123077 has 1 MA's), (10, 123005), (16, 122918),

Gene: Cursive\_1 Start: 1080, Stop: 904, Start Num: 7

Candidate Starts for Cursive\_1:

(Start: 7 @1080 has 49 MA's), (Start: 8 @1074 has 3 MA's), (Start: 9 @1068 has 1 MA's), (10, 996), (16, 909),

Gene: HangryHippo\_249 Start: 122167, Stop: 121991, Start Num: 7

Candidate Starts for HangryHippo\_249:

(Start: 7 @122167 has 49 MA's), (Start: 8 @122161 has 3 MA's), (Start: 9 @122155 has 1 MA's), (10, 122083), (16, 121996),

Gene: HangryHippo\_1 Start: 1080, Stop: 904, Start Num: 7

Candidate Starts for HangryHippo\_1:

(Start: 7 @1080 has 49 MA's), (Start: 8 @1074 has 3 MA's), (Start: 9 @1068 has 1 MA's), (10, 996), (16, 909),

Gene: Jay2Jay\_3 Start: 1079, Stop: 897, Start Num: 6

Candidate Starts for Jay2Jay\_3:

(Start: 6 @1079 has 4 MA's), (15, 923),

Gene: Jay2Jay\_258 Start: 123172, Stop: 122990, Start Num: 6

Candidate Starts for Jay2Jay\_258:

(Start: 6 @123172 has 4 MA's), (15, 123016),

Gene: Larnav\_251 Start: 123084, Stop: 122908, Start Num: 7

Candidate Starts for Larnav\_251:

(Start: 7 @123084 has 49 MA's), (Start: 8 @123078 has 3 MA's), (Start: 9 @123072 has 1 MA's), (10, 123000), (16, 122913),

Gene: Larnav\_1 Start: 1079, Stop: 903, Start Num: 7

Candidate Starts for Larnav\_1:

(Start: 7 @1079 has 49 MA's), (Start: 8 @1073 has 3 MA's), (Start: 9 @1067 has 1 MA's), (10, 995), (16, 908),

Gene: Leo04\_252 Start: 123197, Stop: 123021, Start Num: 7

Candidate Starts for Leo04\_252:

(Start: 7 @123197 has 49 MA's), (Start: 8 @123191 has 3 MA's), (Start: 9 @123185 has 1 MA's), (10, 123113), (16, 123026),

Gene: Leo04\_1 Start: 1079, Stop: 903, Start Num: 7

Candidate Starts for Leo04\_1:

(Start: 7 @1079 has 49 MA's), (Start: 8 @1073 has 3 MA's), (Start: 9 @1067 has 1 MA's), (10, 995), (16, 908),

Gene: Liandry\_2 Start: 1273, Stop: 1097, Start Num: 7

Candidate Starts for Liandry\_2:

(Start: 7 @1273 has 49 MA's), (Start: 8 @1267 has 3 MA's), (Start: 9 @1261 has 1 MA's), (16, 1102),

Gene: Liandry\_251 Start: 122794, Stop: 122618, Start Num: 7

Candidate Starts for Liandry\_251:

(Start: 7 @122794 has 49 MA's), (Start: 8 @122788 has 3 MA's), (Start: 9 @122782 has 1 MA's), (16, 122623),

Gene: Lululemon\_248 Start: 121972, Stop: 121796, Start Num: 7

Candidate Starts for Lululemon\_248:

(Start: 7 @121972 has 49 MA's), (Start: 8 @121966 has 3 MA's), (Start: 9 @121960 has 1 MA's), (10, 121888), (16, 121801),

Gene: Lululemon\_1 Start: 1080, Stop: 904, Start Num: 7

Candidate Starts for Lululemon\_1:

(Start: 7 @1080 has 49 MA's), (Start: 8 @1074 has 3 MA's), (Start: 9 @1068 has 1 MA's), (10, 996), (16, 909),

Gene: Mildred21\_265 Start: 122471, Stop: 122295, Start Num: 7

Candidate Starts for Mildred21\_265:

(Start: 7 @122471 has 49 MA's), (Start: 8 @122465 has 3 MA's), (Start: 9 @122459 has 1 MA's), (16, 122300),

Gene: Mildred21\_2 Start: 1313, Stop: 1137, Start Num: 7

Candidate Starts for Mildred21\_2:

(Start: 7 @1313 has 49 MA's), (Start: 8 @1307 has 3 MA's), (Start: 9 @1301 has 1 MA's), (16, 1142),

Gene: Navo\_1 Start: 1070, Stop: 894, Start Num: 7

Candidate Starts for Navo\_1:

(Start: 7 @1070 has 49 MA's), (Start: 8 @1064 has 3 MA's), (Start: 9 @1058 has 1 MA's), (12, 947), (16, 899),

Gene: Navo\_243 Start: 120695, Stop: 120519, Start Num: 7

Candidate Starts for Navo\_243:

(Start: 7 @120695 has 49 MA's), (Start: 8 @120689 has 3 MA's), (Start: 9 @120683 has 1 MA's), (12, 120572), (16, 120524),

Gene: NootNoot\_247 Start: 121582, Stop: 121406, Start Num: 7

Candidate Starts for NootNoot\_247:

(Start: 7 @121582 has 49 MA's), (Start: 8 @121576 has 3 MA's), (Start: 9 @121570 has 1 MA's), (16, 121411),

Gene: NootNoot\_2 Start: 1283, Stop: 1107, Start Num: 7

Candidate Starts for NootNoot\_2:

(Start: 7 @1283 has 49 MA's), (Start: 8 @1277 has 3 MA's), (Start: 9 @1271 has 1 MA's), (16, 1112),

Gene: PacManQ\_248 Start: 121972, Stop: 121796, Start Num: 7

Candidate Starts for PacManQ\_248:

(Start: 7 @121972 has 49 MA's), (Start: 8 @121966 has 3 MA's), (Start: 9 @121960 has 1 MA's), (10, 121888), (16, 121801),

Gene: PacManQ\_1 Start: 1080, Stop: 904, Start Num: 7

Candidate Starts for PacManQ\_1:

(Start: 7 @1080 has 49 MA's), (Start: 8 @1074 has 3 MA's), (Start: 9 @1068 has 1 MA's), (10, 996), (16, 909),

Gene: Paradiddles\_2 Start: 1267, Stop: 1097, Start Num: 8

Candidate Starts for Paradiddles\_2:

(Start: 7 @1273 has 49 MA's), (Start: 8 @1267 has 3 MA's), (Start: 9 @1261 has 1 MA's), (16, 1102),

Gene: Paradiddles\_243 Start: 123975, Stop: 123805, Start Num: 8

Candidate Starts for Paradiddles\_243:

(Start: 7 @123981 has 49 MA's), (Start: 8 @123975 has 3 MA's), (Start: 9 @123969 has 1 MA's), (16, 123810),

Gene: Peebs\_1 Start: 1080, Stop: 904, Start Num: 7

Candidate Starts for Peebs\_1:

(5, 1095), (Start: 7 @1080 has 49 MA's), (Start: 8 @1074 has 3 MA's), (Start: 9 @1068 has 1 MA's), (14, 933), (16, 909),

Gene: Peebs\_248 Start: 123055, Stop: 122879, Start Num: 7

Candidate Starts for Peebs\_248:

(5, 123070), (Start: 7 @123055 has 49 MA's), (Start: 8 @123049 has 3 MA's), (Start: 9 @123043 has 1 MA's), (14, 122908), (16, 122884),

Gene: Pepperwood\_251 Start: 123013, Stop: 122843, Start Num: 8

Candidate Starts for Pepperwood\_251:

(Start: 7 @123019 has 49 MA's), (Start: 8 @123013 has 3 MA's), (Start: 9 @123007 has 1 MA's), (10, 122935), (16, 122848),

Gene: Pepperwood\_2 Start: 1234, Stop: 1058, Start Num: 7

Candidate Starts for Pepperwood\_2:

(Start: 7 @1234 has 49 MA's), (Start: 8 @1228 has 3 MA's), (Start: 9 @1222 has 1 MA's), (10, 1150), (16, 1063),

Gene: Persimmon\_1 Start: 1070, Stop: 894, Start Num: 7

Candidate Starts for Persimmon\_1:

(Start: 7 @1070 has 49 MA's), (Start: 8 @1064 has 3 MA's), (Start: 9 @1058 has 1 MA's), (10, 986), (16, 899),

Gene: Persimmon\_252 Start: 121881, Stop: 121705, Start Num: 7

Candidate Starts for Persimmon\_252:

(Start: 7 @121881 has 49 MA's), (Start: 8 @121875 has 3 MA's), (Start: 9 @121869 has 1 MA's), (10, 121797), (16, 121710),

Gene: PinkiePie\_2 Start: 1273, Stop: 1097, Start Num: 7

Candidate Starts for PinkiePie\_2:

(Start: 7 @1273 has 49 MA's), (Start: 8 @1267 has 3 MA's), (Start: 9 @1261 has 1 MA's), (16, 1102),

Gene: PinkiePie\_252 Start: 122794, Stop: 122618, Start Num: 7

Candidate Starts for PinkiePie\_252:

(Start: 7 @122794 has 49 MA's), (Start: 8 @122788 has 3 MA's), (Start: 9 @122782 has 1 MA's), (16, 122623),

Gene: Ponzi\_12 Start: 7788, Stop: 7648, Start Num: 9

Candidate Starts for Ponzi\_12:

(1, 8169), (2, 8064), (3, 7908), (4, 7905), (Start: 9 @7788 has 1 MA's), (10, 7716), (13, 7659),

Gene: Samisti12\_252 Start: 124123, Stop: 123947, Start Num: 7

Candidate Starts for Samisti12\_252:

(Start: 7 @124123 has 49 MA's), (Start: 8 @124117 has 3 MA's), (Start: 9 @124111 has 1 MA's), (14, 123976), (16, 123952),

Gene: Samisti12\_1 Start: 1079, Stop: 903, Start Num: 7

Candidate Starts for Samisti12\_1:

(Start: 7 @1079 has 49 MA's), (Start: 8 @1073 has 3 MA's), (Start: 9 @1067 has 1 MA's), (14, 932), (16, 908),

Gene: Scheme\_2 Start: 1234, Stop: 1058, Start Num: 7

Candidate Starts for Scheme\_2:

(Start: 7 @1234 has 49 MA's), (Start: 8 @1228 has 3 MA's), (Start: 9 @1222 has 1 MA's), (10, 1150), (16, 1063),

Gene: Scheme\_255 Start: 124429, Stop: 124253, Start Num: 7

Candidate Starts for Scheme\_255:

(Start: 7 @124429 has 49 MA's), (Start: 8 @124423 has 3 MA's), (Start: 9 @124417 has 1 MA's), (10, 124345), (16, 124258),

Gene: Shuckle\_2 Start: 1119, Stop: 937, Start Num: 6

Candidate Starts for Shuckle\_2:

(Start: 6 @1119 has 4 MA's), (11, 1020), (15, 963),

Gene: Shuckle\_255 Start: 123752, Stop: 123570, Start Num: 6

Candidate Starts for Shuckle\_255:

(Start: 6 @123752 has 4 MA's), (11, 123653), (15, 123596),

Gene: Squillium\_254 Start: 122797, Stop: 122621, Start Num: 7

Candidate Starts for Squillium\_254:

(Start: 7 @122797 has 49 MA's), (Start: 8 @122791 has 3 MA's), (Start: 9 @122785 has 1 MA's), (16, 122626),

Gene: Squillium\_2 Start: 1273, Stop: 1097, Start Num: 7

Candidate Starts for Squillium\_2:

(Start: 7 @1273 has 49 MA's), (Start: 8 @1267 has 3 MA's), (Start: 9 @1261 has 1 MA's), (16, 1102),

Gene: Sushi23\_1 Start: 1080, Stop: 904, Start Num: 7

Candidate Starts for Sushi23\_1:

(Start: 7 @1080 has 49 MA's), (Start: 8 @1074 has 3 MA's), (Start: 9 @1068 has 1 MA's), (14, 933), (16, 909),

Gene: Sushi23\_252 Start: 123923, Stop: 123747, Start Num: 7

Candidate Starts for Sushi23\_252:

(Start: 7 @123923 has 49 MA's), (Start: 8 @123917 has 3 MA's), (Start: 9 @123911 has 1 MA's), (14, 123776), (16, 123752),

Gene: Teutsch\_1 Start: 1080, Stop: 904, Start Num: 7

Candidate Starts for Teutsch\_1:

(Start: 7 @1080 has 49 MA's), (Start: 8 @1074 has 3 MA's), (Start: 9 @1068 has 1 MA's), (10, 996), (16, 909),

Gene: Teutsch\_248 Start: 123289, Stop: 123113, Start Num: 7

Candidate Starts for Teutsch\_248:

(Start: 7 @123289 has 49 MA's), (Start: 8 @123283 has 3 MA's), (Start: 9 @123277 has 1 MA's), (10, 123205), (16, 123118),

Gene: Tribute\_1 Start: 1081, Stop: 905, Start Num: 7

Candidate Starts for Tribute\_1:



(Start: 7 @1081 has 49 MA's), (Start: 8 @1075 has 3 MA's), (Start: 9 @1069 has 1 MA's), (14, 934), (16, 910),

Gene: Tribute\_247 Start: 123625, Stop: 123449, Start Num: 7

Candidate Starts for Tribute\_247:

(Start: 7 @123625 has 49 MA's), (Start: 8 @123619 has 3 MA's), (Start: 9 @123613 has 1 MA's), (14, 123478), (16, 123454),

Gene: Warpy\_3 Start: 1100, Stop: 918, Start Num: 6

Candidate Starts for Warpy\_3:

(Start: 6 @1100 has 4 MA's), (15, 944),

Gene: Warpy\_255 Start: 122638, Stop: 122456, Start Num: 6

Candidate Starts for Warpy\_255:

(Start: 6 @122638 has 4 MA's), (15, 122482),

Gene: Watermoore\_248 Start: 123677, Stop: 123501, Start Num: 7

Candidate Starts for Watermoore\_248:

(Start: 7 @123677 has 49 MA's), (Start: 8 @123671 has 3 MA's), (Start: 9 @123665 has 1 MA's), (10, 123593), (16, 123506),

Gene: Watermoore\_1 Start: 1081, Stop: 905, Start Num: 7

Candidate Starts for Watermoore\_1:

(Start: 7 @1081 has 49 MA's), (Start: 8 @1075 has 3 MA's), (Start: 9 @1069 has 1 MA's), (10, 997), (16, 910),

Gene: WhereRU\_1 Start: 1071, Stop: 895, Start Num: 7

Candidate Starts for WhereRU\_1:

(Start: 7 @1071 has 49 MA's), (Start: 8 @1065 has 3 MA's), (Start: 9 @1059 has 1 MA's), (12, 948), (16, 900),

Gene: WhereRU\_250 Start: 122216, Stop: 122040, Start Num: 7

Candidate Starts for WhereRU\_250:

(Start: 7 @122216 has 49 MA's), (Start: 8 @122210 has 3 MA's), (Start: 9 @122204 has 1 MA's), (12, 122093), (16, 122045),