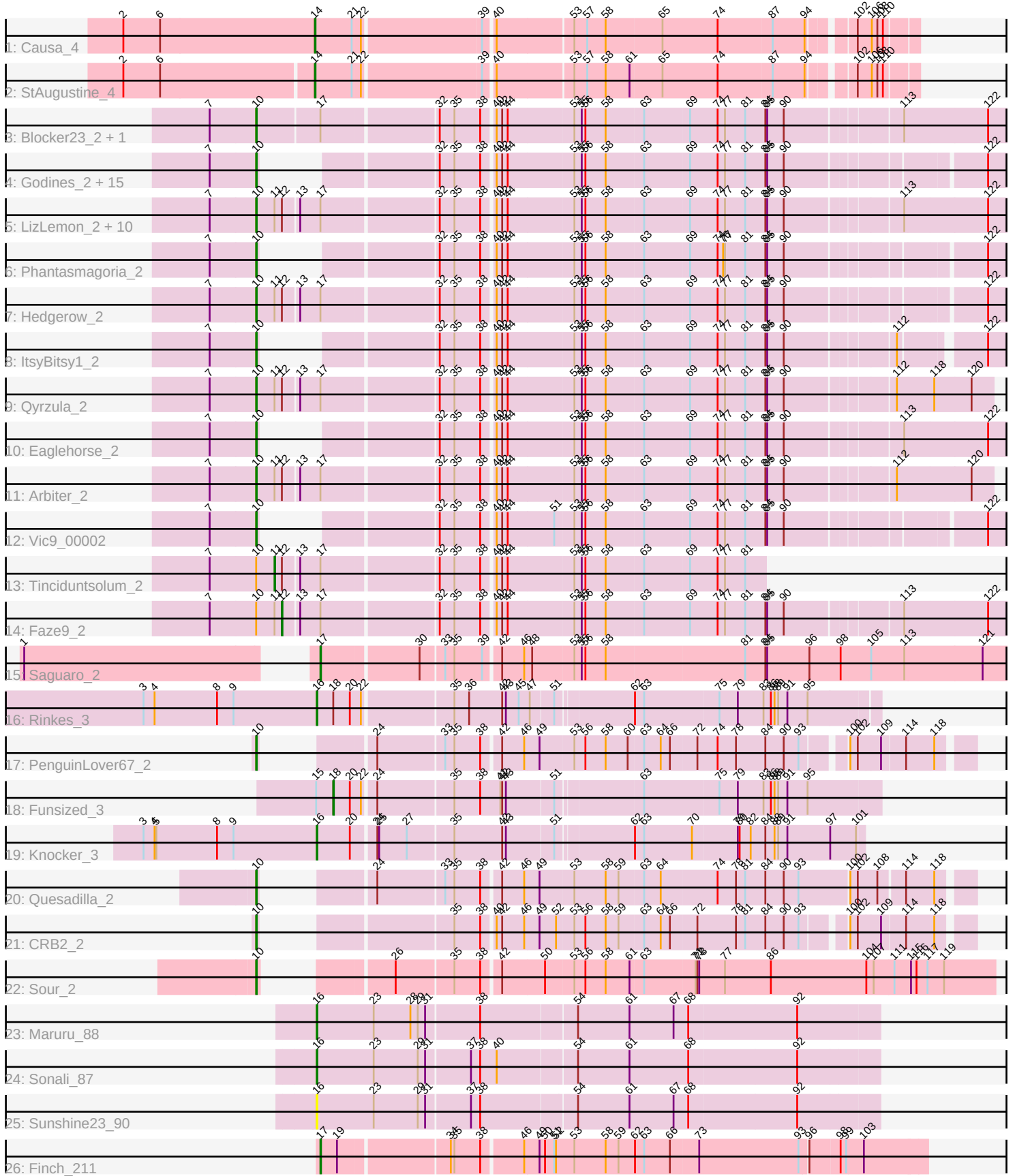


# Pham 276258



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 276258 Report

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

Pham number 276258 has 52 members, 3 are drafts.

Phages represented in each track:

- Track 1 : Causa\_4
- Track 2 : StAugustine\_4
- Track 3 : Blocker23\_2, PrinceCharming\_2
- Track 4 : Godines\_2, Ares\_2, Opia\_2, Allegro\_2, Kolhan\_2, Lephleur\_2, Bananafish\_2, Kheth\_2, Tres\_2, Calamitous\_2, Sabella\_2, Holeinone\_2, TA17A\_2, MasterPo\_2, Laurie\_2, LilSmirk\_2
- Track 5 : LizLemon\_2, Boyle\_2, Rosebush\_2, FrenchFry\_2, Coffee\_2, Rhinoforte\_2, Glass\_2, Lars\_2, Brownie5\_2, Kaleb\_2, West99\_2
- Track 6 : Phantasmagoria\_2
- Track 7 : Hedgerow\_2
- Track 8 : ItsyBitsy1\_2
- Track 9 : Qyrzula\_2
- Track 10 : Eaglehorse\_2
- Track 11 : Arbiter\_2
- Track 12 : Vic9\_00002
- Track 13 : Tinciduntolum\_2
- Track 14 : Faze9\_2
- Track 15 : Saguaro\_2
- Track 16 : Rinkes\_3
- Track 17 : PenguinLover67\_2
- Track 18 : Funsized\_3
- Track 19 : Knocker\_3
- Track 20 : Quesadilla\_2
- Track 21 : CRB2\_2
- Track 22 : Sour\_2
- Track 23 : Maruru\_88
- Track 24 : Sonali\_87
- Track 25 : Sunshine23\_90
- Track 26 : Finch\_211

### ***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 38 of the 49 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Allegro\_2, Arbiter\_2, Ares\_2, Bananafish\_2, Blocker23\_2, Boyle\_2, Brownie5\_2, CRB2\_2, Calamitous\_2, Coffee\_2, Eaglehorse\_2, FrenchFry\_2, Glass\_2, Godines\_2, Hedgerow\_2, Holeinone\_2, ItsyBitsy1\_2, Kaleb\_2, Kheth\_2, Kolhan\_2, Lars\_2, Laurie\_2, Lephleur\_2, LilSmirk\_2, LizLemon\_2, MasterPo\_2, Opia\_2, PenguinLover67\_2, Phantasmagoria\_2, PrinceCharming\_2, Quesadilla\_2, Qyrzula\_2, Rhinoforte\_2, Rosebush\_2, Sabella\_2, Sour\_2, TA17A\_2, Tres\_2, Vic9\_00002, West99\_2,

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

- Faze9\_2, Tinciduntsum\_2,

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

- Causa\_4, Finch\_211, Funsized\_3, Knocker\_3, Maruru\_88, Rinkes\_3, Saguaro\_2, Sonali\_87, StAugustine\_4, Sunshine23\_90,

### Summary by start number:

Start 10:

- Found in 42 of 52 ( 80.8% ) of genes in pham
- Manual Annotations of this start: 38 of 49
- Called 95.2% of time when present
- Phage (with cluster) where this start called: Allegro\_2 (B2), Arbiter\_2 (B2), Ares\_2 (B2), Bananafish\_2 (B2), Blocker23\_2 (B2), Boyle\_2 (B2), Brownie5\_2 (B2), CRB2\_2 (B9), Calamitous\_2 (B2), Coffee\_2 (B2), Eaglehorse\_2 (B2), FrenchFry\_2 (B2), Glass\_2 (B2), Godines\_2 (B2), Hedgerow\_2 (B2), Holeinone\_2 (B2), ItsyBitsy1\_2 (B2), Kaleb\_2 (B2), Kheth\_2 (B2), Kolhan\_2 (B2), Lars\_2 (B2), Laurie\_2 (B2), Lephleur\_2 (B2), LilSmirk\_2 (B2), LizLemon\_2 (B2), MasterPo\_2 (B2), Opia\_2 (B2), PenguinLover67\_2 (B9), Phantasmagoria\_2 (B2), PrinceCharming\_2 (B2), Quesadilla\_2 (B9), Qyrzula\_2 (B2), Rhinoforte\_2 (B2), Rosebush\_2 (B2), Sabella\_2 (B2), Sour\_2 (DR), TA17A\_2 (B2), Tres\_2 (B2), Vic9\_00002 (B2), West99\_2 (B2),

Start 11:

- Found in 16 of 52 ( 30.8% ) of genes in pham
- Manual Annotations of this start: 1 of 49
- Called 6.2% of time when present
- Phage (with cluster) where this start called: Tinciduntsum\_2 (B2),

Start 12:

- Found in 16 of 52 ( 30.8% ) of genes in pham
- Manual Annotations of this start: 1 of 49
- Called 6.2% of time when present
- Phage (with cluster) where this start called: Faze9\_2 (B2),

Start 14:

- Found in 2 of 52 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 2 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Causa\_4 (AI), StAugustine\_4 (AI),

Start 16:

- Found in 5 of 52 ( 9.6% ) of genes in pham

- Manual Annotations of this start: 4 of 49
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Knocker\_3 (B9), Maruru\_88 (FG), Rinkes\_3 (B9), Sonali\_87 (FG), Sunshine23\_90 (FG),

Start 17:

- Found in 20 of 52 ( 38.5% ) of genes in pham
- Manual Annotations of this start: 2 of 49
- Called 10.0% of time when present
- Phage (with cluster) where this start called: Finch\_211 (singleton), Saguaro\_2 (B7),

Start 18:

- Found in 2 of 52 ( 3.8% ) of genes in pham
- Manual Annotations of this start: 1 of 49
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Funsized\_3 (B9),

### **Summary by clusters:**

There are 7 clusters represented in this pham: singleton, AI, B7, B2, FG, DR, B9,

Info for manual annotations of cluster AI:

- Start number 14 was manually annotated 2 times for cluster AI.

Info for manual annotations of cluster B2:

- Start number 10 was manually annotated 34 times for cluster B2.
- Start number 11 was manually annotated 1 time for cluster B2.
- Start number 12 was manually annotated 1 time for cluster B2.

Info for manual annotations of cluster B7:

- Start number 17 was manually annotated 1 time for cluster B7.

Info for manual annotations of cluster B9:

- Start number 10 was manually annotated 3 times for cluster B9.
- Start number 16 was manually annotated 2 times for cluster B9.
- Start number 18 was manually annotated 1 time for cluster B9.

Info for manual annotations of cluster DR:

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

Info for manual annotations of cluster FG:

- Start number 16 was manually annotated 2 times for cluster FG.

### **Gene Information:**

Gene: Allegro\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Allegro\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Arbiter\_2 Start: 789, Stop: 1919, Start Num: 10

Candidate Starts for Arbiter\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (112, 1767), (120, 1884),

Gene: Ares\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Ares\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Bananafish\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Bananafish\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Blocker23\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for Blocker23\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Boyle\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for Boyle\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Brownie5\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for Brownie5\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: CRB2\_2 Start: 630, Stop: 1619, Start Num: 10

Candidate Starts for CRB2\_2:

(Start: 10 @630 has 38 MA's), (35, 840), (38, 882), (40, 900), (42, 909), (46, 945), (49, 969), (52, 996), (53, 1020), (56, 1038), (58, 1071), (59, 1092), (63, 1131), (64, 1158), (66, 1173), (72, 1215), (78, 1278), (81, 1293), (84, 1326), (90, 1356), (93, 1380), (100, 1440), (102, 1452), (109, 1488), (114, 1524), (118, 1566),

Gene: Calamitous\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Calamitous\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Causa\_4 Start: 1633, Stop: 2544, Start Num: 14

Candidate Starts for Causa\_4:

(2, 1321), (6, 1381), (Start: 14 @1633 has 2 MA's), (21, 1693), (22, 1705), (39, 1891), (40, 1906), (53, 2026), (57, 2047), (58, 2077), (65, 2167), (74, 2257), (87, 2344), (94, 2395), (102, 2455), (106, 2476), (108, 2485), (110, 2494),

Gene: Coffee\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for Coffee\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Eaglehorse\_2 Start: 789, Stop: 1847, Start Num: 10

Candidate Starts for Eaglehorse\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (113, 1680), (122, 1812),

Gene: Faze9\_2 Start: 831, Stop: 1946, Start Num: 12

Candidate Starts for Faze9\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Finch\_211 Start: 122885, Stop: 123829, Start Num: 17

Candidate Starts for Finch\_211:

(Start: 17 @122885 has 2 MA's), (19, 122912), (34, 123080), (35, 123086), (38, 123128), (46, 123191), (49, 123215), (50, 123224), (51, 123239), (52, 123242), (53, 123272), (58, 123323), (59, 123344), (62, 123368), (63, 123383), (66, 123425), (73, 123470), (93, 123632), (96, 123644), (98, 123692), (99, 123701), (103, 123728),

Gene: FrenchFry\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for FrenchFry\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Funsized\_3 Start: 1714, Stop: 2565, Start Num: 18

Candidate Starts for Funsized\_3:

(15, 1687), (Start: 18 @1714 has 1 MA's), (20, 1741), (22, 1756), (24, 1774), (35, 1894), (38, 1936), (41, 1969), (42, 1972), (43, 1978), (51, 2053), (63, 2185), (75, 2305), (79, 2335), (83, 2377), (86, 2389), (88, 2395), (89, 2401), (91, 2416), (95, 2449),

Gene: Glass\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for Glass\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Godines\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Godines\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Hedgerow\_2 Start: 789, Stop: 1928, Start Num: 10

Candidate Starts for Hedgerow\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (122, 1893),

Gene: Holeinone\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Holeinone\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: ItsyBitsy1\_2 Start: 789, Stop: 1820, Start Num: 10

Candidate Starts for ItsyBitsy1\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (112, 1668), (122, 1785),

Gene: Kaleb\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for Kaleb\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Kheth\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Kheth\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Knocker\_3 Start: 1699, Stop: 2547, Start Num: 16

Candidate Starts for Knocker\_3:

(3, 1417), (4, 1435), (5, 1438), (8, 1537), (9, 1564), (Start: 16 @1699 has 4 MA's), (20, 1753), (24, 1786), (25, 1789), (27, 1834), (35, 1906), (42, 1981), (43, 1987), (51, 2062), (62, 2179), (63, 2194), (70, 2272), (79, 2344), (80, 2347), (82, 2365), (84, 2389), (88, 2404), (89, 2410), (91, 2425), (97, 2494), (101, 2536),

Gene: Kolhan\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Kolhan\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Lars\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for Lars\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Laurie\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Laurie\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Lephleur\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Lephleur\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: LilSmirk\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for LilSmirk\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: LizLemon\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for LizLemon\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Maruru\_88 Start: 53421, Stop: 54311, Start Num: 16

Candidate Starts for Maruru\_88:

(Start: 16 @53421 has 4 MA's), (23, 53514), (28, 53574), (29, 53586), (31, 53598), (38, 53682), (54, 53829), (61, 53913), (67, 53985), (68, 54009), (92, 54183),

Gene: MasterPo\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for MasterPo\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Opia\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Opia\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: PenguinLover67\_2 Start: 630, Stop: 1619, Start Num: 10

Candidate Starts for PenguinLover67\_2:

(Start: 10 @630 has 38 MA's), (24, 720), (33, 825), (35, 840), (38, 882), (42, 909), (46, 945), (49, 969), (53, 1020), (56, 1038), (58, 1071), (60, 1107), (63, 1131), (64, 1158), (66, 1173), (72, 1215), (74, 1248), (78, 1278), (84, 1326), (90, 1356), (93, 1380), (100, 1440), (102, 1452), (109, 1488), (114, 1524), (118, 1566),



Gene: Phantasmagoria\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Phantasmagoria\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (76, 1407), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: PrinceCharming\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for PrinceCharming\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Quesadilla\_2 Start: 630, Stop: 1634, Start Num: 10

Candidate Starts for Quesadilla\_2:

(Start: 10 @630 has 38 MA's), (24, 720), (33, 825), (35, 840), (38, 882), (42, 909), (46, 945), (49, 969), (53, 1020), (58, 1071), (59, 1092), (63, 1131), (64, 1158), (74, 1248), (78, 1278), (81, 1293), (84, 1326), (90, 1356), (93, 1380), (100, 1458), (102, 1470), (108, 1500), (114, 1539), (118, 1581),

Gene: Qyrzula\_2 Start: 789, Stop: 1919, Start Num: 10

Candidate Starts for Qyrzula\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (112, 1767), (118, 1824), (120, 1884),

Gene: Rhinoforte\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for Rhinoforte\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Rinkes\_3 Start: 1688, Stop: 2560, Start Num: 16

Candidate Starts for Rinkes\_3:

(3, 1406), (4, 1424), (8, 1526), (9, 1553), (Start: 16 @1688 has 4 MA's), (Start: 18 @1715 has 1 MA's), (20, 1742), (22, 1757), (35, 1895), (36, 1919), (42, 1973), (43, 1979), (45, 2000), (47, 2018), (51, 2054), (62, 2171), (63, 2186), (75, 2306), (79, 2336), (83, 2378), (86, 2390), (88, 2396), (89, 2402), (91, 2417), (95, 2450),

Gene: Rosebush\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for Rosebush\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),

Gene: Sabella\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Sabella\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Saguaro\_2 Start: 732, Stop: 1823, Start Num: 17

Candidate Starts for Saguaro\_2:

(1, 333), (Start: 17 @732 has 2 MA's), (30, 882), (33, 918), (35, 933), (39, 978), (42, 1002), (46, 1038), (48, 1050), (53, 1113), (55, 1125), (56, 1131), (58, 1164), (81, 1386), (84, 1419), (85, 1422), (96, 1491), (98, 1542), (105, 1590), (113, 1644), (121, 1770),

Gene: Sonali\_87 Start: 54040, Stop: 54930, Start Num: 16

Candidate Starts for Sonali\_87:

(Start: 16 @54040 has 4 MA's), (23, 54133), (29, 54205), (31, 54217), (37, 54286), (38, 54301), (40, 54325), (54, 54448), (61, 54532), (68, 54628), (92, 54802),

Gene: Sour\_2 Start: 612, Stop: 1685, Start Num: 10

Candidate Starts for Sour\_2:

(Start: 10 @612 has 38 MA's), (26, 735), (35, 825), (38, 867), (42, 894), (50, 963), (53, 1005), (56, 1023), (58, 1056), (61, 1095), (63, 1116), (71, 1197), (72, 1200), (73, 1203), (77, 1245), (86, 1320), (104, 1476), (107, 1488), (111, 1521), (115, 1548), (116, 1557), (117, 1575), (119, 1602),

Gene: StAugustine\_4 Start: 1624, Stop: 2535, Start Num: 14

Candidate Starts for StAugustine\_4:

(2, 1321), (6, 1381), (Start: 14 @1624 has 2 MA's), (21, 1684), (22, 1696), (39, 1882), (40, 1897), (53, 2017), (57, 2038), (58, 2068), (61, 2107), (65, 2158), (74, 2248), (87, 2335), (94, 2386), (102, 2446), (106, 2467), (108, 2476), (110, 2485),

Gene: Sunshine23\_90 Start: 53776, Stop: 54666, Start Num: 16

Candidate Starts for Sunshine23\_90:

(Start: 16 @53776 has 4 MA's), (23, 53869), (29, 53941), (31, 53953), (37, 54022), (38, 54037), (54, 54184), (61, 54268), (67, 54340), (68, 54364), (92, 54538),

Gene: TA17A\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for TA17A\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Tinciduntolum\_2 Start: 819, Stop: 1574, Start Num: 11

Candidate Starts for Tinciduntolum\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542),

Gene: Tres\_2 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Tres\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: Vic9\_00002 Start: 789, Stop: 1829, Start Num: 10

Candidate Starts for Vic9\_00002:

(7, 714), (Start: 10 @789 has 38 MA's), (32, 966), (35, 990), (38, 1032), (40, 1050), (42, 1059), (44, 1068), (51, 1143), (53, 1170), (55, 1182), (56, 1188), (58, 1221), (63, 1281), (69, 1353), (74, 1398), (77, 1410), (81, 1443), (84, 1476), (85, 1479), (90, 1506), (122, 1794),

Gene: West99\_2 Start: 789, Stop: 1946, Start Num: 10

Candidate Starts for West99\_2:

(7, 714), (Start: 10 @789 has 38 MA's), (Start: 11 @819 has 1 MA's), (Start: 12 @831 has 1 MA's), (13, 855), (Start: 17 @888 has 2 MA's), (32, 1065), (35, 1089), (38, 1131), (40, 1149), (42, 1158), (44, 1167), (53, 1269), (55, 1281), (56, 1287), (58, 1320), (63, 1380), (69, 1452), (74, 1497), (77, 1509), (81, 1542), (84, 1575), (85, 1578), (90, 1605), (113, 1779), (122, 1911),