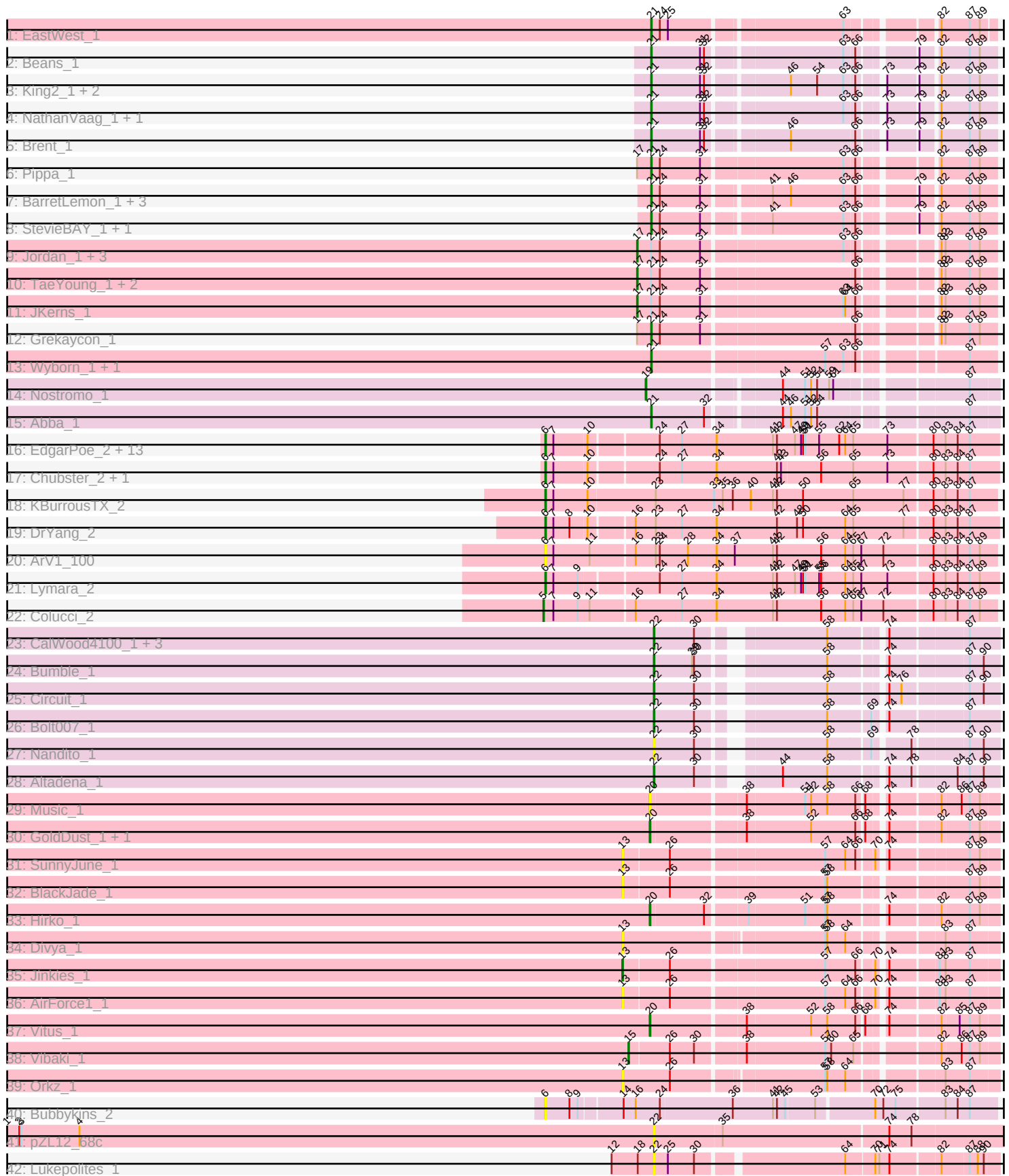




Note: Tracks are now grouped by subcluster and scaled. Switching in subcluster is indicated by changes in track color. Track scale is now set by default to display the region 30 bp upstream of start 1 to 30 bp downstream of the last possible start. If this default region is judged to be packed too tightly 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 263086 Report

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

Pham number 263086 has 73 members, 15 are drafts.

Phages represented in each track:

- Track 1 : EastWest_1
- Track 2 : Beans_1
- Track 3 : King2_1, Franzy_1, Jawnski_1
- Track 4 : NathanVaag_1, Piccoletto_1
- Track 5 : Brent_1
- Track 6 : Pippa_1
- Track 7 : BarretLemon_1, BigDome_1, LeeroyJ_1, Timinator_1
- Track 8 : StevieBAY_1, GravityBall_1
- Track 9 : Jordan_1, Sonny_1, Zartrosa_1, Shade_1
- Track 10 : TaeYoung_1, Martha_1, BossLady_1
- Track 11 : JKerns_1
- Track 12 : Grekaycon_1
- Track 13 : Wyborn_1, Sicarius2_1
- Track 14 : Nostromo_1
- Track 15 : Abba_1
- Track 16 : EdgarPoe_2, Conboy_2, MoyaNatalis_2, Chipper1996_20, Kabreeze_2, Chocolat_2, Scavito_2, JaNo_2, HumptyDumpty_2, RosiePosie_2, Mordred_2, Tophat_2, JayCookie_2, PrincessTrina_2
- Track 17 : Chubster_2, Linus_2
- Track 18 : KBurrousTX_2
- Track 19 : DrYang_2
- Track 20 : ArV1_100
- Track 21 : Lymara_2
- Track 22 : Colucci_2
- Track 23 : CalWood4100_1, Klevey_1, Prairie_1, Lilmac1015_1
- Track 24 : Bumble_1
- Track 25 : Circuit_1
- Track 26 : Bolt007_1
- Track 27 : Nandito_1
- Track 28 : Altadena_1
- Track 29 : Music_1
- Track 30 : GoldDust_1, Gooberta_1
- Track 31 : SunnyJune_1
- Track 32 : BlackJade_1
- Track 33 : Hirko_1
- Track 34 : Divya_1
- Track 35 : Jinkies_1

- Track 36 : AirForce1_1
- Track 37 : Vitus_1
- Track 38 : Vibaki_1
- Track 39 : Orkz_1
- Track 40 : Bubbykins_2
- Track 41 : pZL12_68c
- Track 42 : Lukepolites_1

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

The start number called the most often in the published annotations is 21, it was called in 18 of the 58 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Abba_1, BarretLemon_1, Beans_1, BigDome_1, Brent_1, EastWest_1, Franzy_1, GravityBall_1, Grekaycon_1, Jawnski_1, King2_1, LeeroyJ_1, NathanVaag_1, Piccoletto_1, Pippa_1, Sicarius2_1, StevieBAY_1, Timinator_1, Wyborn_1,

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

- BossLady_1, JKerns_1, Jordan_1, Martha_1, Shade_1, Sonny_1, TaeYoung_1, Zartrosa_1,

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

- AirForce1_1, Altadena_1, ArV1_100, BlackJade_1, Bolt007_1, Bubbykins_2, Bumble_1, CalWood4100_1, Chipper1996_20, Chocolat_2, Chubster_2, Circuit_1, Colucci_2, Conboy_2, Divya_1, DrYang_2, EdgarPoe_2, GoldDust_1, Gooberta_1, Hirko_1, HumptyDumpty_2, JaNo_2, JayCookie_2, Jinkies_1, KBurroustTX_2, Kabreeze_2, Klevey_1, Lilmac1015_1, Linus_2, Lukepolites_1, Lymara_2, Mordred_2, MoyaNatalis_2, Music_1, Nandito_1, Nostromo_1, Orkz_1, Prairie_1, PrincessTrina_2, RosiePosie_2, Scavito_2, SunnyJune_1, Tophat_2, Vibaki_1, Vitus_1, pZL12_68c,

Summary by start number:

Start 5:

- Found in 1 of 73 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Colucci_2 (AR),

Start 6:

- Found in 21 of 73 (28.8%) of genes in pham
- Manual Annotations of this start: 18 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ArV1_100 (AR), Bubbykins_2 (UNK), Chipper1996_20 (AR), Chocolat_2 (AR), Chubster_2 (AR), Conboy_2 (AR), DrYang_2 (AR), EdgarPoe_2 (AR), HumptyDumpty_2 (AR), JaNo_2 (AR), JayCookie_2 (AR), KBurroustTX_2 (AR), Kabreeze_2 (AR), Linus_2 (AR), Lymara_2 (AR), Mordred_2 (AR), MoyaNatalis_2 (AR), PrincessTrina_2 (AR), RosiePosie_2 (AR), Scavito_2 (AR), Tophat_2 (AR),

Start 13:

- Found in 6 of 73 (8.2%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AirForce1_1 (FL), BlackJade_1 (FL), Divya_1 (FL), Jinkies_1 (FL), Orkz_1 (FL), SunnyJune_1 (FL),

Start 15:

- Found in 1 of 73 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Vibaki_1 (FL),

Start 17:

- Found in 10 of 73 (13.7%) of genes in pham
- Manual Annotations of this start: 8 of 58
- Called 80.0% of time when present
- Phage (with cluster) where this start called: BossLady_1 (AO2), JKerns_1 (AO2), Jordan_1 (AO2), Martha_1 (AO2), Shade_1 (AO2), Sonny_1 (AO2), TaeYoung_1 (AO2), Zartrosa_1 (AO2),

Start 19:

- Found in 1 of 73 (1.4%) of genes in pham
- Manual Annotations of this start: 1 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Nostromo_1 (AO3),

Start 20:

- Found in 5 of 73 (6.8%) of genes in pham
- Manual Annotations of this start: 3 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GoldDust_1 (FL), Gooberta_1 (FL), Hirko_1 (FL), Music_1 (FL), Vitus_1 (FL),

Start 21:

- Found in 27 of 73 (37.0%) of genes in pham
- Manual Annotations of this start: 18 of 58
- Called 70.4% of time when present
- Phage (with cluster) where this start called: Abba_1 (AO3), BarretLemon_1 (AO2), Beans_1 (AO1), BigDome_1 (AO2), Brent_1 (AO1), EastWest_1 (AO), Franzy_1 (AO1), GravityBall_1 (AO2), Grekaycon_1 (AO2), Jawnski_1 (AO1), King2_1 (AO1), LeeroyJ_1 (AO2), NathanVaag_1 (AO1), Piccoletto_1 (AO1), Pippa_1 (AO2), Sicarius2_1 (AO2), StevieBAY_1 (AO2), Timinator_1 (AO2), Wyborn_1 (AO2),

Start 22:

- Found in 11 of 73 (15.1%) of genes in pham
- Manual Annotations of this start: 7 of 58
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Altadena_1 (FH), Bolt007_1 (FH), Bumble_1 (FH), CalWood4100_1 (FH), Circuit_1 (FH), Klevey_1 (FH), Lilmac1015_1 (FH), Lukepolites_1 (singleton), Nandito_1 (FH), Prairie_1 (FH), pZL12_68c (singleton),

Summary by clusters:

There are 9 clusters represented in this pham: singleton, AO, AR, AO3, AO2, AO1, FH, UNK, FL,

Info for manual annotations of cluster AO:

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

Info for manual annotations of cluster AO1:

- Start number 21 was manually annotated 7 times for cluster AO1.

Info for manual annotations of cluster AO2:

- Start number 17 was manually annotated 8 times for cluster AO2.
- Start number 21 was manually annotated 9 times for cluster AO2.

Info for manual annotations of cluster AO3:

- Start number 19 was manually annotated 1 time for cluster AO3.
- Start number 21 was manually annotated 1 time for cluster AO3.

Info for manual annotations of cluster AR:

- Start number 5 was manually annotated 1 time for cluster AR.
- Start number 6 was manually annotated 18 times for cluster AR.

Info for manual annotations of cluster FH:

- Start number 22 was manually annotated 7 times for cluster FH.

Info for manual annotations of cluster FL:

- Start number 13 was manually annotated 1 time for cluster FL.
- Start number 15 was manually annotated 1 time for cluster FL.
- Start number 20 was manually annotated 3 times for cluster FL.

Gene Information:

Gene: Abba_1 Start: 1, Stop: 459, Start Num: 21

Candidate Starts for Abba_1:

(Start: 21 @1 has 18 MA's), (32, 79), (44, 172), (46, 184), (51, 205), (52, 214), (54, 223), (87, 418),

Gene: AirForce1_1 Start: 1, Stop: 510, Start Num: 13

Candidate Starts for AirForce1_1:

(Start: 13 @1 has 1 MA's), (26, 67), (57, 283), (64, 313), (66, 328), (70, 349), (74, 358), (81, 424), (83, 433), (87, 469),

Gene: Altadena_1 Start: 1, Stop: 438, Start Num: 22

Candidate Starts for Altadena_1:

(Start: 22 @1 has 7 MA's), (30, 61), (44, 151), (58, 217), (74, 286), (78, 319), (84, 379), (87, 394), (90, 415),

Gene: ArV1_100 Start: 70474, Stop: 71133, Start Num: 6

Candidate Starts for ArV1_100:

(Start: 6 @70474 has 18 MA's), (7, 70486), (11, 70540), (16, 70603), (23, 70633), (24, 70639), (28, 70681), (34, 70723), (37, 70750), (41, 70807), (42, 70813), (56, 70879), (64, 70915), (65, 70927), (67, 70939), (72, 70972), (80, 71041), (83, 71059), (84, 71077), (87, 71095), (89, 71110),

Gene: BarretLemon_1 Start: 21, Stop: 470, Start Num: 21

Candidate Starts for BarretLemon_1:

(Start: 21 @21 has 18 MA's), (24, 33), (31, 93), (41, 177), (46, 204), (63, 282), (66, 297), (79, 366), (82, 390), (87, 432), (89, 447),

Gene: Beans_1 Start: 25, Stop: 474, Start Num: 21

Candidate Starts for Beans_1:

(Start: 21 @25 has 18 MA's), (31, 97), (32, 103), (63, 286), (66, 301), (79, 370), (82, 394), (87, 436), (89, 451),

Gene: BigDome_1 Start: 21, Stop: 470, Start Num: 21

Candidate Starts for BigDome_1:

(Start: 21 @21 has 18 MA's), (24, 33), (31, 93), (41, 177), (46, 204), (63, 282), (66, 297), (79, 366), (82, 390), (87, 432), (89, 447),

Gene: BlackJade_1 Start: 1, Stop: 507, Start Num: 13

Candidate Starts for BlackJade_1:

(Start: 13 @1 has 1 MA's), (26, 67), (57, 283), (58, 286), (87, 466), (89, 481),

Gene: Bolt007_1 Start: 1, Stop: 438, Start Num: 22

Candidate Starts for Bolt007_1:

(Start: 22 @1 has 7 MA's), (30, 61), (58, 217), (69, 274), (74, 286), (87, 394),

Gene: BossLady_1 Start: 1, Stop: 480, Start Num: 17

Candidate Starts for BossLady_1:

(Start: 17 @1 has 8 MA's), (Start: 21 @22 has 18 MA's), (24, 34), (31, 94), (66, 307), (82, 400), (83, 406), (87, 442), (89, 457),

Gene: Brent_1 Start: 25, Stop: 474, Start Num: 21

Candidate Starts for Brent_1:

(Start: 21 @25 has 18 MA's), (31, 97), (32, 103), (46, 208), (66, 301), (73, 328), (79, 370), (82, 394), (87, 436), (89, 451),

Gene: Bubbykins_2 Start: 660, Stop: 1301, Start Num: 6

Candidate Starts for Bubbykins_2:

(Start: 6 @660 has 18 MA's), (8, 696), (9, 708), (14, 768), (16, 786), (24, 822), (36, 927), (41, 987), (42, 993), (45, 1005), (53, 1047), (70, 1128), (72, 1140), (75, 1158), (83, 1227), (84, 1245), (87, 1263),

Gene: Bumble_1 Start: 1, Stop: 438, Start Num: 22

Candidate Starts for Bumble_1:

(Start: 22 @1 has 7 MA's), (29, 58), (30, 61), (58, 217), (74, 286), (87, 394), (90, 415),

Gene: CalWood4100_1 Start: 1, Stop: 438, Start Num: 22

Candidate Starts for CalWood4100_1:

(Start: 22 @1 has 7 MA's), (30, 61), (58, 217), (74, 286), (87, 394),

Gene: Chipper1996_20 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for Chipper1996_20:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: Chocolat_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for Chocolat_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: Chubster_2 Start: 657, Stop: 1307, Start Num: 6

Candidate Starts for Chubster_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (42, 987), (43, 993), (56, 1050), (65, 1098), (73, 1149), (80, 1212), (83, 1230), (84, 1248), (87, 1266),

Gene: Circuit_1 Start: 1, Stop: 438, Start Num: 22

Candidate Starts for Circuit_1:

(Start: 22 @1 has 7 MA's), (30, 61), (58, 217), (74, 286), (76, 304), (87, 394), (90, 415),

Gene: Colucci_2 Start: 654, Stop: 1313, Start Num: 5

Candidate Starts for Colucci_2:

(Start: 5 @654 has 1 MA's), (7, 666), (9, 702), (11, 720), (16, 783), (27, 852), (34, 903), (41, 987), (42, 993), (56, 1059), (64, 1095), (65, 1107), (67, 1119), (72, 1152), (80, 1221), (83, 1239), (84, 1257), (87, 1275), (89, 1290),

Gene: Conboy_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for Conboy_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: Divya_1 Start: 1, Stop: 504, Start Num: 13

Candidate Starts for Divya_1:

(Start: 13 @1 has 1 MA's), (57, 277), (58, 280), (64, 307), (83, 427), (87, 463),

Gene: DrYang_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for DrYang_2:

(Start: 6 @657 has 18 MA's), (7, 669), (8, 693), (10, 717), (16, 777), (23, 807), (27, 846), (34, 897), (42, 987), (48, 1017), (50, 1026), (64, 1089), (65, 1101), (77, 1176), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: EastWest_1 Start: 1, Stop: 447, Start Num: 21

Candidate Starts for EastWest_1:

(Start: 21 @1 has 18 MA's), (24, 13), (25, 25), (63, 262), (82, 370), (87, 412), (89, 427),

Gene: EdgarPoe_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for EdgarPoe_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: Franzy_1 Start: 25, Stop: 474, Start Num: 21

Candidate Starts for Franzy_1:

(Start: 21 @25 has 18 MA's), (31, 97), (32, 103), (46, 208), (54, 247), (63, 286), (66, 301), (73, 328), (79, 370), (82, 394), (87, 436), (89, 451),

Gene: GoldDust_1 Start: 1, Stop: 468, Start Num: 20

Candidate Starts for GoldDust_1:

(Start: 20 @1 has 3 MA's), (38, 130), (52, 223), (66, 289), (68, 298), (74, 319), (82, 388), (87, 427), (89, 442),

Gene: Gooberta_1 Start: 1, Stop: 468, Start Num: 20

Candidate Starts for Gooberta_1:

(Start: 20 @1 has 3 MA's), (38, 130), (52, 223), (66, 289), (68, 298), (74, 319), (82, 388), (87, 427), (89, 442),

Gene: GravityBall_1 Start: 21, Stop: 470, Start Num: 21

Candidate Starts for GravityBall_1:

(Start: 21 @21 has 18 MA's), (24, 33), (31, 93), (41, 177), (63, 282), (66, 297), (79, 366), (82, 390), (87, 432), (89, 447),

Gene: Grekaycon_1 Start: 22, Stop: 480, Start Num: 21

Candidate Starts for Grekaycon_1:

(Start: 17 @1 has 8 MA's), (Start: 21 @22 has 18 MA's), (24, 34), (31, 94), (66, 307), (82, 400), (83, 406), (87, 442), (89, 457),

Gene: Hirko_1 Start: 1, Stop: 468, Start Num: 20

Candidate Starts for Hirko_1:

(Start: 20 @1 has 3 MA's), (32, 79), (39, 133), (51, 214), (57, 244), (58, 247), (74, 319), (82, 388), (87, 427), (89, 442),

Gene: HumptyDumpty_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for HumptyDumpty_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: JKerns_1 Start: 1, Stop: 480, Start Num: 17

Candidate Starts for JKerns_1:

(Start: 17 @1 has 8 MA's), (Start: 21 @22 has 18 MA's), (24, 34), (31, 94), (63, 292), (64, 295), (66, 307), (82, 400), (83, 406), (87, 442), (89, 457),

Gene: JaNo_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for JaNo_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: Jawnski_1 Start: 25, Stop: 474, Start Num: 21

Candidate Starts for Jawnski_1:

(Start: 21 @25 has 18 MA's), (31, 97), (32, 103), (46, 208), (54, 247), (63, 286), (66, 301), (73, 328), (79, 370), (82, 394), (87, 436), (89, 451),

Gene: JayCookie_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for JayCookie_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: Jinkies_1 Start: 1, Stop: 510, Start Num: 13

Candidate Starts for Jinkies_1:

(Start: 13 @1 has 1 MA's), (26, 67), (57, 283), (66, 328), (70, 349), (74, 358), (81, 424), (83, 433), (87, 469),

Gene: Jordan_1 Start: 1, Stop: 480, Start Num: 17

Candidate Starts for Jordan_1:

(Start: 17 @1 has 8 MA's), (Start: 21 @22 has 18 MA's), (24, 34), (31, 94), (63, 292), (66, 307), (82, 400), (83, 406), (87, 442), (89, 457),

Gene: KBurrousTX_2 Start: 654, Stop: 1316, Start Num: 6

Candidate Starts for KBurrousTX_2:

(Start: 6 @654 has 18 MA's), (7, 666), (10, 717), (23, 816), (33, 903), (35, 915), (36, 930), (40, 957), (41, 990), (42, 996), (50, 1035), (65, 1110), (77, 1185), (80, 1224), (83, 1242), (84, 1260), (87, 1278),

Gene: Kabreeze_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for Kabreeze_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: King2_1 Start: 25, Stop: 474, Start Num: 21

Candidate Starts for King2_1:

(Start: 21 @25 has 18 MA's), (31, 97), (32, 103), (46, 208), (54, 247), (63, 286), (66, 301), (73, 328), (79, 370), (82, 394), (87, 436), (89, 451),

Gene: Klevey_1 Start: 1, Stop: 438, Start Num: 22

Candidate Starts for Klevey_1:

(Start: 22 @1 has 7 MA's), (30, 61), (58, 217), (74, 286), (87, 394),

Gene: LeeroyJ_1 Start: 21, Stop: 470, Start Num: 21

Candidate Starts for LeeroyJ_1:

(Start: 21 @21 has 18 MA's), (24, 33), (31, 93), (41, 177), (46, 204), (63, 282), (66, 297), (79, 366), (82, 390), (87, 432), (89, 447),

Gene: Lilmac1015_1 Start: 1, Stop: 438, Start Num: 22

Candidate Starts for Lilmac1015_1:

(Start: 22 @1 has 7 MA's), (30, 61), (58, 217), (74, 286), (87, 394),

Gene: Linus_2 Start: 657, Stop: 1307, Start Num: 6

Candidate Starts for Linus_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (42, 987), (43, 993), (56, 1050), (65, 1098), (73, 1149), (80, 1212), (83, 1230), (84, 1248), (87, 1266),

Gene: Lukepolites_1 Start: 64, Stop: 534, Start Num: 22

Candidate Starts for Lukepolites_1:

(12, 1), (18, 40), (Start: 22 @64 has 7 MA's), (25, 85), (30, 124), (64, 325), (70, 364), (71, 370), (74, 385), (82, 454), (87, 493), (88, 505), (90, 514),

Gene: Lymara_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for Lymara_2:

(Start: 6 @657 has 18 MA's), (7, 669), (9, 705), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (56, 1053), (64, 1089), (65, 1101), (67, 1113), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269), (89, 1284),

Gene: Martha_1 Start: 1, Stop: 480, Start Num: 17

Candidate Starts for Martha_1:

(Start: 17 @1 has 8 MA's), (Start: 21 @22 has 18 MA's), (24, 34), (31, 94), (66, 307), (82, 400), (83, 406), (87, 442), (89, 457),

Gene: Mordred_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for Mordred_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: MoyaNatalis_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for MoyaNatalis_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: Music_1 Start: 1, Stop: 468, Start Num: 20

Candidate Starts for Music_1:

(Start: 20 @1 has 3 MA's), (38, 130), (51, 214), (52, 223), (58, 247), (66, 289), (68, 298), (74, 319), (82, 388), (86, 415), (87, 427), (89, 442),

Gene: Nandito_1 Start: 1, Stop: 438, Start Num: 22

Candidate Starts for Nandito_1:

(Start: 22 @1 has 7 MA's), (30, 61), (58, 217), (69, 274), (78, 319), (87, 394), (90, 415),

Gene: NathanVaag_1 Start: 25, Stop: 474, Start Num: 21

Candidate Starts for NathanVaag_1:

(Start: 21 @25 has 18 MA's), (31, 97), (32, 103), (63, 286), (66, 301), (73, 328), (79, 370), (82, 394), (87, 436), (89, 451),

Gene: Nostromo_1 Start: 1, Stop: 468, Start Num: 19

Candidate Starts for Nostromo_1:

(Start: 19 @1 has 1 MA's), (44, 181), (51, 214), (52, 223), (54, 232), (59, 250), (61, 256), (87, 427),

Gene: Orkz_1 Start: 1, Stop: 504, Start Num: 13

Candidate Starts for Orkz_1:

(Start: 13 @1 has 1 MA's), (26, 70), (57, 277), (58, 280), (64, 307), (83, 427), (87, 463),

Gene: Piccoletto_1 Start: 25, Stop: 474, Start Num: 21

Candidate Starts for Piccoletto_1:

(Start: 21 @25 has 18 MA's), (31, 97), (32, 103), (63, 286), (66, 301), (73, 328), (79, 370), (82, 394), (87, 436), (89, 451),

Gene: Pippa_1 Start: 22, Stop: 480, Start Num: 21

Candidate Starts for Pippa_1:

(Start: 17 @1 has 8 MA's), (Start: 21 @22 has 18 MA's), (24, 34), (31, 94), (63, 292), (66, 307), (82, 400), (87, 442), (89, 457),

Gene: Prairie_1 Start: 1, Stop: 438, Start Num: 22

Candidate Starts for Prairie_1:

(Start: 22 @1 has 7 MA's), (30, 61), (58, 217), (74, 286), (87, 394),

Gene: PrincessTrina_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for PrincessTrina_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: RosiePosie_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for RosiePosie_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: Scavito_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for Scavito_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: Shade_1 Start: 1, Stop: 480, Start Num: 17

Candidate Starts for Shade_1:

(Start: 17 @1 has 8 MA's), (Start: 21 @22 has 18 MA's), (24, 34), (31, 94), (63, 292), (66, 307), (82, 400), (83, 406), (87, 442), (89, 457),

Gene: Sicarius2_1 Start: 1, Stop: 462, Start Num: 21

Candidate Starts for Sicarius2_1:

(Start: 21 @1 has 18 MA's), (57, 244), (63, 271), (66, 286), (87, 424),

Gene: Sonny_1 Start: 1, Stop: 480, Start Num: 17

Candidate Starts for Sonny_1:

(Start: 17 @1 has 8 MA's), (Start: 21 @22 has 18 MA's), (24, 34), (31, 94), (63, 292), (66, 307), (82, 400), (83, 406), (87, 442), (89, 457),

Gene: StevieBAY_1 Start: 21, Stop: 470, Start Num: 21

Candidate Starts for StevieBAY_1:

(Start: 21 @21 has 18 MA's), (24, 33), (31, 93), (41, 177), (63, 282), (66, 297), (79, 366), (82, 390), (87, 432), (89, 447),

Gene: SunnyJune_1 Start: 1, Stop: 507, Start Num: 13

Candidate Starts for SunnyJune_1:

(Start: 13 @1 has 1 MA's), (26, 67), (57, 283), (64, 313), (66, 328), (70, 349), (74, 358), (87, 466), (89, 481),

Gene: TaeYoung_1 Start: 1, Stop: 480, Start Num: 17

Candidate Starts for TaeYoung_1:

(Start: 17 @1 has 8 MA's), (Start: 21 @22 has 18 MA's), (24, 34), (31, 94), (66, 307), (82, 400), (83, 406), (87, 442), (89, 457),

Gene: Timinator_1 Start: 21, Stop: 470, Start Num: 21

Candidate Starts for Timinator_1:

(Start: 21 @21 has 18 MA's), (24, 33), (31, 93), (41, 177), (46, 204), (63, 282), (66, 297), (79, 366), (82, 390), (87, 432), (89, 447),

Gene: Tophat_2 Start: 657, Stop: 1310, Start Num: 6

Candidate Starts for Tophat_2:

(Start: 6 @657 has 18 MA's), (7, 669), (10, 717), (24, 813), (27, 846), (34, 897), (41, 981), (42, 987), (47, 1014), (49, 1023), (50, 1026), (51, 1029), (55, 1050), (62, 1080), (64, 1089), (65, 1101), (73, 1152), (80, 1215), (83, 1233), (84, 1251), (87, 1269),

Gene: Vibaki_1 Start: 1, Stop: 498, Start Num: 15

Candidate Starts for Vibaki_1:

(Start: 15 @1 has 1 MA's), (26, 58), (30, 94), (38, 160), (57, 274), (60, 283), (65, 316), (82, 418), (86, 445), (87, 457), (89, 472),

Gene: Vitus_1 Start: 1, Stop: 471, Start Num: 20

Candidate Starts for Vitus_1:

(Start: 20 @1 has 3 MA's), (38, 133), (52, 226), (58, 250), (66, 292), (68, 301), (74, 322), (82, 391), (85, 415), (87, 430), (89, 445),

Gene: Wyborn_1 Start: 1, Stop: 462, Start Num: 21

Candidate Starts for Wyborn_1:

(Start: 21 @1 has 18 MA's), (57, 244), (63, 271), (66, 286), (87, 424),

Gene: Zartrosa_1 Start: 1, Stop: 480, Start Num: 17

Candidate Starts for Zartrosa_1:

(Start: 17 @1 has 8 MA's), (Start: 21 @22 has 18 MA's), (24, 34), (31, 94), (63, 292), (66, 307), (82, 400), (83, 406), (87, 442), (89, 457),

Gene: pZL12_68c Start: 56713, Stop: 56180, Start Num: 22

Candidate Starts for pZL12_68c:

(1, 57679), (2, 57661), (3, 57658), (4, 57571), (Start: 22 @56713 has 7 MA's), (35, 56614), (74, 56371), (78, 56338),