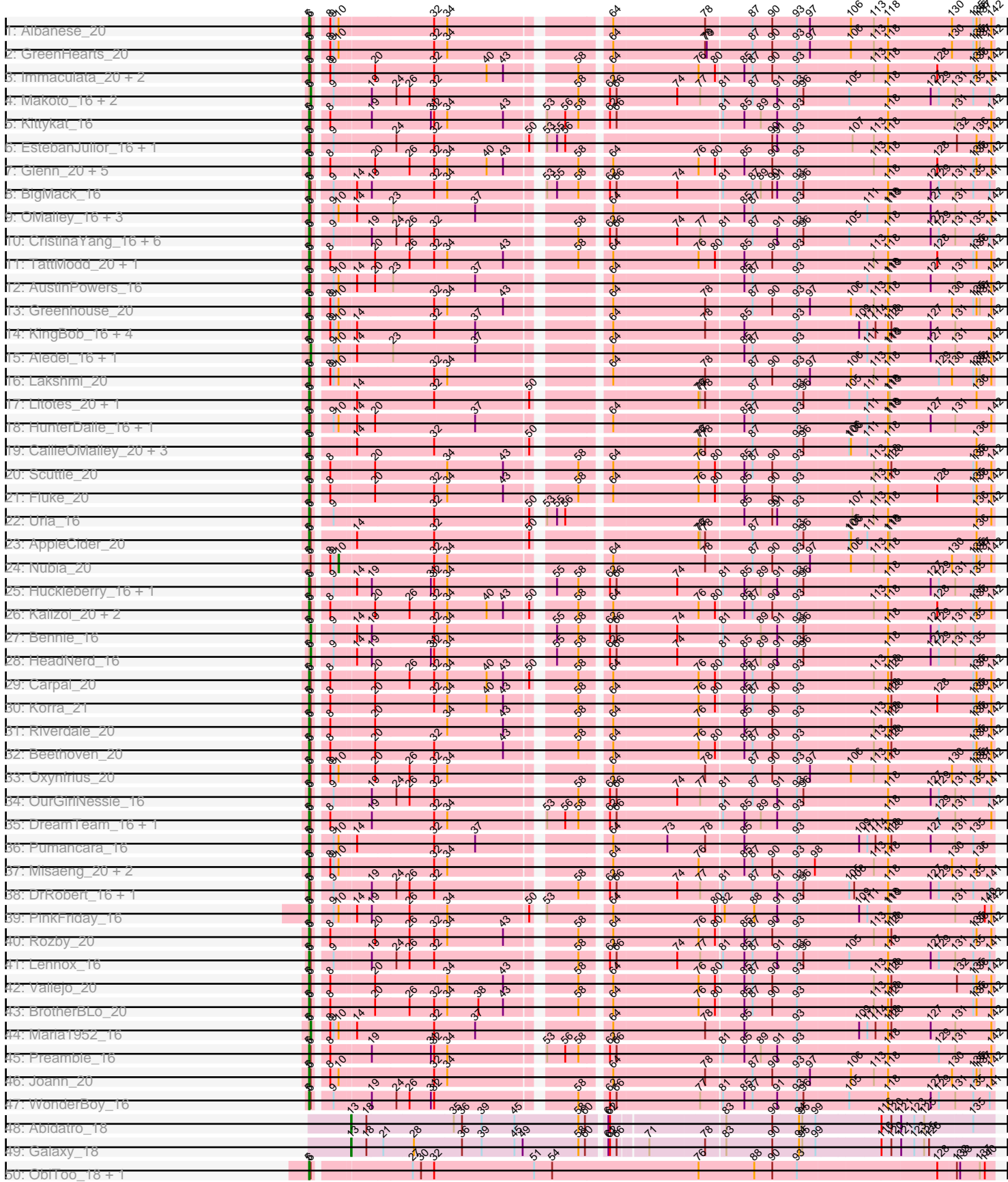
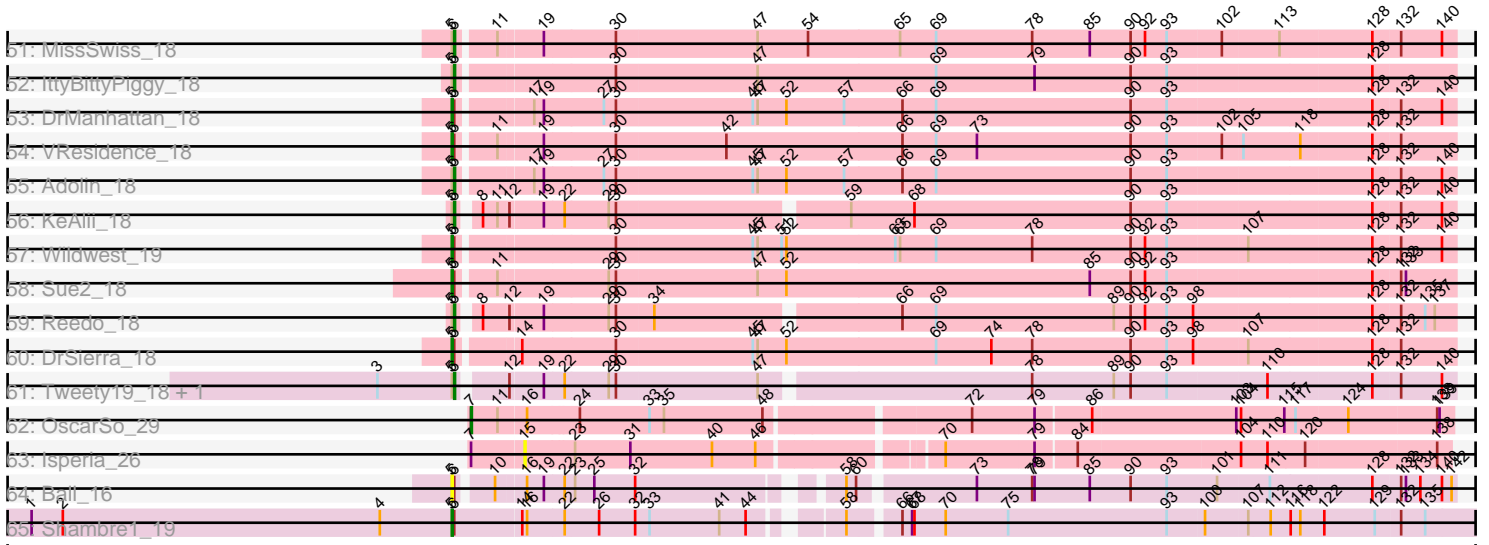


Pham 216020



Pham 216020



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 216020 Report

This analysis was run 02/22/25 on database version 588.

Pham number 216020 has 104 members, 3 are drafts.

Phages represented in each track:

- Track 1 : Albanese\_20
- Track 2 : GreenHearts\_20
- Track 3 : Immaculata\_20, Cholula\_20, Potatoes\_20
- Track 4 : Makoto\_16, ChewChew\_16, Pterodactyl\_16
- Track 5 : Kittykat\_16
- Track 6 : EstebanJulior\_16, MamaPearl\_16
- Track 7 : Glenn\_20, RAP15\_20, MeganNoll\_20, Savage2526\_20, Jumboset\_20, MrGloopy\_20
- Track 8 : BigMack\_16
- Track 9 : OMalley\_16, Eunoia\_16, Riovina\_16, Supakev\_16
- Track 10 : CristinaYang\_16, Lasagna\_16, PitaDog\_16, LilStuart\_16, Nancia\_16, Bodacious\_16, Lucy\_16
- Track 11 : TattModd\_20, Wawa\_20
- Track 12 : AustinPowers\_16
- Track 13 : Greenhouse\_20
- Track 14 : KingBob\_16, Herb\_16, Sergei\_16, Temper16\_16, Daiboju\_16
- Track 15 : Aledel\_16, Chridison\_16
- Track 16 : Lakshmi\_20
- Track 17 : Litotes\_20, Wayne\_20
- Track 18 : HunterDalle\_16, Vulture\_16
- Track 19 : CallieOMalley\_20, Suppi\_20, Canowicakte\_20, PartyCup\_20
- Track 20 : Scuttle\_20
- Track 21 : Fluke\_20
- Track 22 : Urla\_16
- Track 23 : AppleCider\_20
- Track 24 : Nubia\_20
- Track 25 : Huckleberry\_16, Moki\_16
- Track 26 : Kalizoi\_20, Dino\_20, Zorro\_20
- Track 27 : Bennie\_16
- Track 28 : HeadNerd\_16
- Track 29 : Carpal\_20
- Track 30 : Korra\_21
- Track 31 : Riverdale\_20
- Track 32 : Beethoven\_20
- Track 33 : Oxynfrius\_20
- Track 34 : OurGirlNessie\_16
- Track 35 : DreamTeam\_16, Gisselle\_16

- Track 36 : Pumancara\_16
- Track 37 : Misaeng\_20, RcigaStruga\_20, Huntingdon\_20
- Track 38 : DrRobert\_16, Christian\_16
- Track 39 : PinkFriday\_16
- Track 40 : Rozby\_20
- Track 41 : Lennox\_16
- Track 42 : Vallejo\_20
- Track 43 : BrotherBLo\_20
- Track 44 : Maria1952\_16
- Track 45 : Preamble\_16
- Track 46 : Joann\_20
- Track 47 : WonderBoy\_16
- Track 48 : Abidatro\_18
- Track 49 : Galaxy\_18
- Track 50 : ObiToo\_18, Crewmate\_19
- Track 51 : MissSwiss\_18
- Track 52 : IttyBittyPiggy\_18
- Track 53 : DrManhattan\_18
- Track 54 : VResidence\_18
- Track 55 : Adolin\_18
- Track 56 : KeAlii\_18
- Track 57 : Wildwest\_19
- Track 58 : Sue2\_18
- Track 59 : Reedo\_18
- Track 60 : DrSierra\_18
- Track 61 : Tweety19\_18, Snek\_18
- Track 62 : OscarSo\_29
- Track 63 : Isperia\_26
- Track 64 : Ball\_16
- Track 65 : Shambre1\_19

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

The start number called the most often in the published annotations is 5, it was called in 82 of the 101 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Albanese\_20, AppleCider\_20, AustinPowers\_16, Ball\_16, Beethoven\_20, BigMack\_16, Bodacious\_16, BrotherBLo\_20, CallieOMalley\_20, Canowicakte\_20, Carpal\_20, Cholula\_20, Christian\_16, Crewmate\_19, CristinaYang\_16, Daiboju\_16, Dino\_20, DrManhattan\_18, DrRobert\_16, DrSierra\_18, DreamTeam\_16, EstebanJulior\_16, Eunoia\_16, Fluke\_20, Gisselle\_16, Glenn\_20, GreenHearts\_20, Greenhouse\_20, Herb\_16, Huckleberry\_16, HunterDalle\_16, Huntingdon\_20, Immaculata\_20, Joann\_20, Jumboset\_20, Kalizoi\_20, KingBob\_16, Kittykat\_16, Korra\_21, Lakshmi\_20, Lasagna\_16, Lennox\_16, LilStuart\_16, Litotes\_20, Lucy\_16, MamaPearl\_16, MeganNoll\_20, Misaeng\_20, Moki\_16, MrGloopy\_20, Nancia\_16, OMalley\_16, ObiToo\_18, OurGirlNessie\_16, Oxynfrius\_20, PartyCup\_20, PinkFriday\_16, PitaDog\_16, Potatoes\_20, Preamble\_16, Pumancara\_16, RAP15\_20, RcigaStruga\_20, Riovina\_16, Riverdale\_20, Rozby\_20, Savage2526\_20, Scuttle\_20, Sergei\_16, Shambre1\_19, Sue2\_18, Supakev\_16, Suppi\_20, TattModd\_20,

Temper16\_16, Urla\_16, VResidence\_18, Vallejo\_20, Vulture\_16, Wawa\_20, Wayne\_20, Wildwest\_19, WonderBoy\_16, Zorro\_20,

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

- Adolin\_18, Aledel\_16, Bennie\_16, ChewChew\_16, Chridison\_16, HeadNerd\_16, IttyBittyPiggy\_18, KeAlii\_18, Makoto\_16, Maria1952\_16, MissSwiss\_18, Nubia\_20, Pterodactyl\_16, Reedo\_18, Snek\_18, Tweety19\_18,

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

- Abidatro\_18, Galaxy\_18, Isperia\_26, OscarSo\_29,

### Summary by start number:

Start 5:

- Found in 100 of 104 ( 96.2% ) of genes in pham
- Manual Annotations of this start: 82 of 101
- Called 84.0% of time when present
- Phage (with cluster) where this start called: Albanese\_20 (AK), AppleCider\_20 (AK), AustinPowers\_16 (AK), Ball\_16 (singleton), Beethoven\_20 (AK), BigMack\_16 (AK), Bodacious\_16 (AK), BrotherBLo\_20 (AK), CallieOMalley\_20 (AK), Canowicakte\_20 (AK), Carpal\_20 (AK), Cholula\_20 (AK), Christian\_16 (AK), Crewmate\_19 (AZ1), CristinaYang\_16 (AK), Daiboju\_16 (AK), Dino\_20 (AK), DrManhattan\_18 (AZ1), DrRobert\_16 (AK), DrSierra\_18 (AZ1), DreamTeam\_16 (AK), EstebanJulior\_16 (AK), Eunoia\_16 (AK), Fluke\_20 (AK), Gisselle\_16 (AK), Glenn\_20 (AK), GreenHearts\_20 (AK), Greenhouse\_20 (AK), Herb\_16 (AK), Huckleberry\_16 (AK), HunterDalle\_16 (AK), Huntingdon\_20 (AK), Immaculata\_20 (AK), Joann\_20 (AK), Jumboset\_20 (AK), Kalizoi\_20 (AK), KingBob\_16 (AK), Kittykat\_16 (AK), Korra\_21 (AK), Lakshmi\_20 (AK), Lasagna\_16 (AK), Lennox\_16 (AK), LilStuart\_16 (AK), Litotes\_20 (AK), Lucy\_16 (AK), MamaPearl\_16 (AK), MeganNoll\_20 (AK), Misaeng\_20 (AK), Moki\_16 (AK), MrGloopy\_20 (AK), Nancia\_16 (AK), OMalley\_16 (AK), ObiToo\_18 (AZ1), OurGirlNessie\_16 (AK), Oxynfrius\_20 (AK), PartyCup\_20 (AK), PinkFriday\_16 (AK), PitaDog\_16 (AK), Potatoes\_20 (AK), Preamble\_16 (AK), Pumancara\_16 (AK), RAP15\_20 (AK), RcigaStruga\_20 (AK), Riovina\_16 (AK), Riverdale\_20 (AK), Rozby\_20 (AK), Savage2526\_20 (AK), Scuttle\_20 (AK), Sergei\_16 (AK), Shambre1\_19 (singleton), Sue2\_18 (AZ1), Supakev\_16 (AK), Suppi\_20 (AK), TattModd\_20 (AK), Temper16\_16 (AK), Urla\_16 (AK), VResidence\_18 (AZ1), Vallejo\_20 (AK), Vulture\_16 (AK), Wawa\_20 (AK), Wayne\_20 (AK), Wildwest\_19 (AZ1), WonderBoy\_16 (AK), Zorro\_20 (AK),

Start 6:

- Found in 100 of 104 ( 96.2% ) of genes in pham
- Manual Annotations of this start: 15 of 101
- Called 15.0% of time when present
- Phage (with cluster) where this start called: Adolin\_18 (AZ1), Aledel\_16 (AK), Bennie\_16 (AK), ChewChew\_16 (AK), Chridison\_16 (AK), HeadNerd\_16 (AK), IttyBittyPiggy\_18 (AZ1), KeAlii\_18 (AZ1), Makoto\_16 (AK), Maria1952\_16 (AK), MissSwiss\_18 (AZ1), Pterodactyl\_16 (AK), Reedo\_18 (AZ1), Snek\_18 (AZ3), Tweety19\_18 (AZ3),

Start 7:

- Found in 2 of 104 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 1 of 101
- Called 50.0% of time when present

- Phage (with cluster) where this start called: OscarSo\_29 (GJ),

Start 10:

- Found in 28 of 104 ( 26.9% ) of genes in pham
- Manual Annotations of this start: 1 of 101
- Called 3.6% of time when present
- Phage (with cluster) where this start called: Nubia\_20 (AK),

Start 13:

- Found in 2 of 104 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 2 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Abidatro\_18 (AS1), Galaxy\_18 (AS1),

Start 15:

- Found in 1 of 104 ( 1.0% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Isperia\_26 (GJ),

### **Summary by clusters:**

There are 6 clusters represented in this pham: AS1, AK, singleton, AZ1, AZ3, GJ,

Info for manual annotations of cluster AK:

- Start number 5 was manually annotated 74 times for cluster AK.
- Start number 6 was manually annotated 8 times for cluster AK.
- Start number 10 was manually annotated 1 time for cluster AK.

Info for manual annotations of cluster AS1:

- Start number 13 was manually annotated 2 times for cluster AS1.

Info for manual annotations of cluster AZ1:

- Start number 5 was manually annotated 7 times for cluster AZ1.
- Start number 6 was manually annotated 5 times for cluster AZ1.

Info for manual annotations of cluster AZ3:

- Start number 6 was manually annotated 2 times for cluster AZ3.

Info for manual annotations of cluster GJ:

- Start number 7 was manually annotated 1 time for cluster GJ.

### **Gene Information:**

Gene: Abidatro\_18 Start: 13671, Stop: 14783, Start Num: 13

Candidate Starts for Abidatro\_18:

(Start: 13 @13671 has 2 MA's), (18, 13698), (35, 13854), (36, 13869), (39, 13905), (45, 13965), (58, 14082), (60, 14094), (61, 14124), (62, 14127), (83, 14313), (90, 14397), (94, 14442), (95, 14448), (99, 14472), (116, 14586), (120, 14604), (121, 14619), (123, 14643), (125, 14661), (135, 14745),

Gene: Adolin\_18 Start: 14366, Stop: 15577, Start Num: 6

Candidate Starts for Adolin\_18:

(Start: 5 @14363 has 82 MA's), (Start: 6 @14366 has 15 MA's), (17, 14447), (19, 14459), (27, 14531), (30, 14546), (45, 14714), (47, 14720), (52, 14756), (57, 14828), (66, 14900), (69, 14942), (90, 15185), (93, 15230), (128, 15476), (132, 15509), (140, 15560),

Gene: Albanese\_20 Start: 16081, Stop: 17238, Start Num: 5

Candidate Starts for Albanese\_20:

(Start: 5 @16081 has 82 MA's), (Start: 6 @16084 has 15 MA's), (8, 16105), (9, 16111), (Start: 10 @16120 has 1 MA's), (32, 16285), (34, 16306), (64, 16561), (78, 16726), (87, 16807), (90, 16843), (93, 16888), (97, 16912), (106, 16981), (113, 17023), (118, 17047), (130, 17161), (135, 17200), (136, 17206), (137, 17212), (142, 17233),

Gene: Aledel\_16 Start: 14404, Stop: 15558, Start Num: 6

Candidate Starts for Aledel\_16:

(Start: 5 @14401 has 82 MA's), (Start: 6 @14404 has 15 MA's), (9, 14431), (Start: 10 @14440 has 1 MA's), (14, 14467), (23, 14530), (37, 14677), (64, 14881), (85, 15112), (87, 15127), (93, 15208), (111, 15331), (118, 15367), (119, 15370), (127, 15442), (131, 15487), (142, 15553),

Gene: AppleCider\_20 Start: 16039, Stop: 17196, Start Num: 5

Candidate Starts for AppleCider\_20:

(Start: 5 @16039 has 82 MA's), (Start: 6 @16042 has 15 MA's), (14, 16105), (32, 16243), (50, 16408), (76, 16672), (77, 16675), (78, 16684), (87, 16765), (93, 16846), (96, 16858), (105, 16936), (106, 16939), (111, 16969), (118, 17005), (119, 17008), (136, 17164),

Gene: AustinPowers\_16 Start: 14402, Stop: 15559, Start Num: 5

Candidate Starts for AustinPowers\_16:

(Start: 5 @14402 has 82 MA's), (Start: 6 @14405 has 15 MA's), (9, 14432), (Start: 10 @14441 has 1 MA's), (14, 14468), (20, 14501), (23, 14531), (37, 14678), (64, 14882), (85, 15113), (87, 15128), (93, 15209), (111, 15332), (118, 15368), (119, 15371), (127, 15443), (131, 15488), (142, 15554),

Gene: Ball\_16 Start: 13208, Stop: 14359, Start Num: 5

Candidate Starts for Ball\_16:

(Start: 5 @13208 has 82 MA's), (Start: 6 @13211 has 15 MA's), (Start: 10 @13247 has 1 MA's), (16, 13280), (19, 13301), (22, 13325), (23, 13337), (25, 13361), (32, 13412), (58, 13628), (60, 13640), (73, 13772), (78, 13841), (79, 13844), (85, 13913), (90, 13964), (93, 14009), (101, 14072), (111, 14135), (128, 14258), (132, 14291), (133, 14297), (134, 14315), (140, 14342), (142, 14354),

Gene: Beethoven\_20 Start: 15985, Stop: 17142, Start Num: 5

Candidate Starts for Beethoven\_20:

(Start: 5 @15985 has 82 MA's), (Start: 6 @15988 has 15 MA's), (8, 16009), (20, 16084), (32, 16189), (43, 16312), (58, 16420), (64, 16465), (76, 16618), (80, 16648), (85, 16696), (87, 16711), (90, 16747), (93, 16792), (113, 16927), (118, 16951), (120, 16957), (135, 17104), (136, 17110), (142, 17137),

Gene: Bennie\_16 Start: 14410, Stop: 15564, Start Num: 6

Candidate Starts for Bennie\_16:

(Start: 5 @14407 has 82 MA's), (Start: 6 @14410 has 15 MA's), (9, 14440), (14, 14476), (19, 14503), (32, 14614), (34, 14635), (55, 14806), (58, 14845), (62, 14884), (66, 14896), (74, 15004), (81, 15079), (89, 15148), (91, 15178), (93, 15214), (96, 15226), (118, 15373), (127, 15448), (129, 15463), (131, 15493), (135, 15526),

Gene: BigMack\_16 Start: 14394, Stop: 15551, Start Num: 5

Candidate Starts for BigMack\_16:

(Start: 5 @14394 has 82 MA's), (Start: 6 @14397 has 15 MA's), (9, 14427), (14, 14463), (19, 14490), (32, 14601), (34, 14622), (53, 14775), (55, 14793), (58, 14832), (62, 14871), (66, 14883), (74, 14991), (81, 15066), (87, 15120), (89, 15135), (90, 15156), (91, 15165), (93, 15201), (96, 15213), (118, 15360), (127, 15435), (129, 15450), (131, 15480), (135, 15513), (141, 15543),

Gene: Bodacious\_16 Start: 14407, Stop: 15561, Start Num: 5

Candidate Starts for Bodacious\_16:

(Start: 5 @14407 has 82 MA's), (Start: 6 @14410 has 15 MA's), (9, 14437), (19, 14500), (24, 14542), (26, 14566), (32, 14611), (58, 14842), (62, 14881), (66, 14893), (74, 15001), (77, 15043), (81, 15076), (87, 15130), (91, 15175), (93, 15211), (96, 15223), (105, 15301), (118, 15370), (127, 15445), (129, 15460), (131, 15490), (135, 15523), (141, 15553),

Gene: BrotherBLo\_20 Start: 15991, Stop: 17148, Start Num: 5

Candidate Starts for BrotherBLo\_20:

(Start: 5 @15991 has 82 MA's), (Start: 6 @15994 has 15 MA's), (8, 16015), (20, 16090), (26, 16150), (32, 16195), (34, 16216), (38, 16273), (43, 16318), (58, 16426), (64, 16471), (76, 16624), (80, 16654), (85, 16702), (87, 16717), (90, 16753), (93, 16798), (113, 16933), (118, 16957), (120, 16963), (135, 17110), (136, 17116), (142, 17143),

Gene: CallieOMalley\_20 Start: 16039, Stop: 17196, Start Num: 5

Candidate Starts for CallieOMalley\_20:

(Start: 5 @16039 has 82 MA's), (Start: 6 @16042 has 15 MA's), (14, 16105), (32, 16243), (50, 16408), (76, 16672), (77, 16675), (78, 16684), (87, 16765), (93, 16846), (96, 16858), (105, 16936), (106, 16939), (111, 16969), (118, 17005), (136, 17164),

Gene: Canowicakte\_20 Start: 16074, Stop: 17231, Start Num: 5

Candidate Starts for Canowicakte\_20:

(Start: 5 @16074 has 82 MA's), (Start: 6 @16077 has 15 MA's), (14, 16140), (32, 16278), (50, 16443), (76, 16707), (77, 16710), (78, 16719), (87, 16800), (93, 16881), (96, 16893), (105, 16971), (106, 16974), (111, 17004), (118, 17040), (136, 17199),

Gene: Carpal\_20 Start: 15992, Stop: 17149, Start Num: 5

Candidate Starts for Carpal\_20:

(Start: 5 @15992 has 82 MA's), (Start: 6 @15995 has 15 MA's), (8, 16016), (20, 16091), (26, 16151), (32, 16196), (34, 16217), (40, 16289), (43, 16319), (50, 16361), (58, 16427), (64, 16472), (76, 16625), (80, 16655), (85, 16703), (87, 16718), (90, 16754), (93, 16799), (113, 16934), (118, 16958), (120, 16964), (135, 17111), (136, 17117), (142, 17144),

Gene: ChewChew\_16 Start: 14409, Stop: 15560, Start Num: 6

Candidate Starts for ChewChew\_16:

(Start: 5 @14406 has 82 MA's), (Start: 6 @14409 has 15 MA's), (9, 14436), (19, 14499), (24, 14541), (26, 14565), (32, 14610), (58, 14841), (62, 14880), (66, 14892), (74, 15000), (77, 15042), (81, 15075), (87, 15129), (91, 15174), (93, 15210), (96, 15222), (105, 15300), (118, 15369), (127, 15444), (129, 15459), (131, 15489), (135, 15522), (141, 15552),

Gene: Cholula\_20 Start: 16037, Stop: 17194, Start Num: 5

Candidate Starts for Cholula\_20:

(Start: 5 @16037 has 82 MA's), (Start: 6 @16040 has 15 MA's), (8, 16061), (9, 16067), (20, 16136), (32, 16241), (40, 16334), (43, 16364), (58, 16472), (64, 16517), (76, 16670), (80, 16700), (85, 16748), (87, 16763), (90, 16799), (93, 16844), (113, 16979), (118, 17003), (128, 17090), (135, 17156), (136, 17162), (142, 17189),

Gene: Chridison\_16 Start: 14405, Stop: 15559, Start Num: 6



Candidate Starts for Chridison\_16:

(Start: 5 @14402 has 82 MA's), (Start: 6 @14405 has 15 MA's), (9, 14432), (Start: 10 @14441 has 1 MA's), (14, 14468), (23, 14531), (37, 14678), (64, 14882), (85, 15113), (87, 15128), (93, 15209), (111, 15332), (118, 15368), (119, 15371), (127, 15443), (131, 15488), (142, 15554),

Gene: Christian\_16 Start: 14407, Stop: 15561, Start Num: 5

Candidate Starts for Christian\_16:

(Start: 5 @14407 has 82 MA's), (Start: 6 @14410 has 15 MA's), (9, 14437), (19, 14500), (24, 14542), (26, 14566), (32, 14611), (58, 14842), (62, 14881), (66, 14893), (74, 15001), (77, 15043), (81, 15076), (87, 15130), (91, 15175), (93, 15211), (96, 15223), (105, 15301), (108, 15310), (118, 15370), (127, 15445), (129, 15460), (131, 15490), (135, 15523), (141, 15553),

Gene: Crewmate\_19 Start: 14349, Stop: 15560, Start Num: 5

Candidate Starts for Crewmate\_19:

(Start: 5 @14349 has 82 MA's), (Start: 6 @14352 has 15 MA's), (27, 14514), (30, 14529), (32, 14553), (51, 14733), (54, 14766), (76, 15033), (88, 15135), (90, 15168), (93, 15213), (128, 15459), (132, 15492), (133, 15498), (137, 15534), (140, 15543),

Gene: CristinaYang\_16 Start: 14407, Stop: 15561, Start Num: 5

Candidate Starts for CristinaYang\_16:

(Start: 5 @14407 has 82 MA's), (Start: 6 @14410 has 15 MA's), (9, 14437), (19, 14500), (24, 14542), (26, 14566), (32, 14611), (58, 14842), (62, 14881), (66, 14893), (74, 15001), (77, 15043), (81, 15076), (87, 15130), (91, 15175), (93, 15211), (96, 15223), (105, 15301), (118, 15370), (127, 15445), (129, 15460), (131, 15490), (135, 15523), (141, 15553),

Gene: Daiboju\_16 Start: 14410, Stop: 15567, Start Num: 5

Candidate Starts for Daiboju\_16:

(Start: 5 @14410 has 82 MA's), (Start: 6 @14413 has 15 MA's), (8, 14434), (9, 14440), (Start: 10 @14449 has 1 MA's), (14, 14476), (32, 14614), (37, 14686), (64, 14890), (78, 15055), (85, 15121), (93, 15217), (109, 15325), (111, 15340), (114, 15355), (118, 15376), (120, 15382), (127, 15451), (131, 15496), (142, 15562),

Gene: Dino\_20 Start: 15990, Stop: 17147, Start Num: 5

Candidate Starts for Dino\_20:

(Start: 5 @15990 has 82 MA's), (Start: 6 @15993 has 15 MA's), (8, 16014), (20, 16089), (26, 16149), (32, 16194), (34, 16215), (40, 16287), (43, 16317), (50, 16359), (58, 16425), (64, 16470), (76, 16623), (80, 16653), (85, 16701), (87, 16716), (90, 16752), (93, 16797), (113, 16932), (118, 16956), (128, 17043), (135, 17109), (136, 17115), (142, 17142),

Gene: DrManhattan\_18 Start: 14353, Stop: 15567, Start Num: 5

Candidate Starts for DrManhattan\_18:

(Start: 5 @14353 has 82 MA's), (Start: 6 @14356 has 15 MA's), (17, 14437), (19, 14449), (27, 14521), (30, 14536), (45, 14704), (47, 14710), (52, 14746), (57, 14818), (66, 14890), (69, 14932), (90, 15175), (93, 15220), (128, 15466), (132, 15499), (140, 15550),

Gene: DrRobert\_16 Start: 14407, Stop: 15561, Start Num: 5

Candidate Starts for DrRobert\_16:

(Start: 5 @14407 has 82 MA's), (Start: 6 @14410 has 15 MA's), (9, 14437), (19, 14500), (24, 14542), (26, 14566), (32, 14611), (58, 14842), (62, 14881), (66, 14893), (74, 15001), (77, 15043), (81, 15076), (87, 15130), (91, 15175), (93, 15211), (96, 15223), (105, 15301), (108, 15310), (118, 15370), (127, 15445), (129, 15460), (131, 15490), (135, 15523), (141, 15553),

Gene: DrSierra\_18 Start: 14444, Stop: 15658, Start Num: 5

Candidate Starts for DrSierra\_18:

(Start: 5 @14444 has 82 MA's), (Start: 6 @14447 has 15 MA's), (14, 14513), (30, 14627), (45, 14795), (47, 14801), (52, 14837), (69, 15023), (74, 15092), (78, 15143), (90, 15266), (93, 15311), (98, 15344), (107, 15407), (128, 15557), (132, 15590),

Gene: DreamTeam\_16 Start: 14447, Stop: 15601, Start Num: 5

Candidate Starts for DreamTeam\_16:

(Start: 5 @14447 has 82 MA's), (Start: 6 @14450 has 15 MA's), (8, 14471), (19, 14540), (32, 14651), (34, 14672), (53, 14825), (56, 14858), (58, 14882), (62, 14921), (66, 14933), (81, 15116), (85, 15155), (89, 15185), (91, 15215), (93, 15251), (118, 15410), (129, 15500), (131, 15530), (142, 15596),

Gene: EstebanJulior\_16 Start: 14415, Stop: 15572, Start Num: 5

Candidate Starts for EstebanJulior\_16:

(Start: 5 @14415 has 82 MA's), (Start: 6 @14418 has 15 MA's), (9, 14445), (24, 14550), (32, 14619), (50, 14784), (53, 14793), (55, 14811), (56, 14826), (90, 15177), (91, 15186), (93, 15222), (107, 15318), (113, 15357), (118, 15381), (132, 15504), (136, 15540), (142, 15567),

Gene: Eunoia\_16 Start: 14401, Stop: 15558, Start Num: 5

Candidate Starts for Eunoia\_16:

(Start: 5 @14401 has 82 MA's), (Start: 6 @14404 has 15 MA's), (9, 14431), (Start: 10 @14440 has 1 MA's), (14, 14467), (23, 14530), (37, 14677), (64, 14881), (85, 15112), (87, 15127), (93, 15208), (111, 15331), (118, 15367), (119, 15370), (127, 15442), (131, 15487), (142, 15553),

Gene: Fluke\_20 Start: 16033, Stop: 17190, Start Num: 5

Candidate Starts for Fluke\_20:

(Start: 5 @16033 has 82 MA's), (Start: 6 @16036 has 15 MA's), (8, 16057), (20, 16132), (32, 16237), (34, 16258), (43, 16360), (58, 16468), (64, 16513), (76, 16666), (80, 16696), (85, 16744), (90, 16795), (93, 16840), (113, 16975), (118, 16999), (128, 17086), (135, 17152), (136, 17158), (142, 17185),

Gene: Galaxy\_18 Start: 13677, Stop: 14789, Start Num: 13

Candidate Starts for Galaxy\_18:

(Start: 13 @13677 has 2 MA's), (18, 13704), (21, 13734), (28, 13788), (36, 13875), (39, 13911), (45, 13971), (49, 13986), (58, 14088), (60, 14100), (61, 14130), (62, 14133), (66, 14145), (71, 14190), (78, 14286), (83, 14319), (90, 14403), (94, 14448), (95, 14454), (99, 14478), (116, 14592), (120, 14610), (121, 14625), (123, 14649), (125, 14667), (126, 14676),

Gene: Gisselle\_16 Start: 14447, Stop: 15601, Start Num: 5

Candidate Starts for Gisselle\_16:

(Start: 5 @14447 has 82 MA's), (Start: 6 @14450 has 15 MA's), (8, 14471), (19, 14540), (32, 14651), (34, 14672), (53, 14825), (56, 14858), (58, 14882), (62, 14921), (66, 14933), (81, 15116), (85, 15155), (89, 15185), (91, 15215), (93, 15251), (118, 15410), (129, 15500), (131, 15530), (142, 15596),

Gene: Glenn\_20 Start: 16042, Stop: 17199, Start Num: 5

Candidate Starts for Glenn\_20:

(Start: 5 @16042 has 82 MA's), (Start: 6 @16045 has 15 MA's), (8, 16066), (20, 16141), (26, 16201), (32, 16246), (34, 16267), (40, 16339), (43, 16369), (58, 16477), (64, 16522), (76, 16675), (80, 16705), (85, 16753), (90, 16804), (93, 16849), (113, 16984), (118, 17008), (128, 17095), (135, 17161), (136, 17167), (142, 17194),

Gene: GreenHearts\_20 Start: 16128, Stop: 17285, Start Num: 5

Candidate Starts for GreenHearts\_20:

(Start: 5 @16128 has 82 MA's), (Start: 6 @16131 has 15 MA's), (8, 16152), (9, 16158), (Start: 10 @16167 has 1 MA's), (32, 16332), (34, 16353), (64, 16608), (78, 16773), (79, 16776), (87, 16854), (90,

16890), (93, 16935), (97, 16959), (106, 17028), (113, 17070), (118, 17094), (130, 17208), (135, 17247), (136, 17253), (137, 17259), (142, 17280),

Gene: Greenhouse\_20 Start: 16052, Stop: 17209, Start Num: 5

Candidate Starts for Greenhouse\_20:

(Start: 5 @16052 has 82 MA's), (Start: 6 @16055 has 15 MA's), (8, 16076), (9, 16082), (Start: 10 @16091 has 1 MA's), (32, 16256), (34, 16277), (43, 16379), (64, 16532), (78, 16697), (87, 16778), (90, 16814), (93, 16859), (97, 16883), (106, 16952), (113, 16994), (118, 17018), (130, 17132), (135, 17171), (136, 17177), (137, 17183), (142, 17204),

Gene: HeadNerd\_16 Start: 14410, Stop: 15564, Start Num: 6

Candidate Starts for HeadNerd\_16:

(Start: 5 @14407 has 82 MA's), (Start: 6 @14410 has 15 MA's), (9, 14440), (14, 14476), (19, 14503), (31, 14608), (32, 14614), (34, 14635), (55, 14806), (58, 14845), (62, 14884), (66, 14896), (74, 15004), (81, 15079), (85, 15118), (89, 15148), (91, 15178), (93, 15214), (96, 15226), (118, 15373), (127, 15448), (129, 15463), (131, 15493), (135, 15526),

Gene: Herb\_16 Start: 14410, Stop: 15567, Start Num: 5

Candidate Starts for Herb\_16:

(Start: 5 @14410 has 82 MA's), (Start: 6 @14413 has 15 MA's), (8, 14434), (9, 14440), (Start: 10 @14449 has 1 MA's), (14, 14476), (32, 14614), (37, 14686), (64, 14890), (78, 15055), (85, 15121), (93, 15217), (109, 15325), (111, 15340), (114, 15355), (118, 15376), (120, 15382), (127, 15451), (131, 15496), (142, 15562),

Gene: Huckleberry\_16 Start: 14407, Stop: 15564, Start Num: 5

Candidate Starts for Huckleberry\_16:

(Start: 5 @14407 has 82 MA's), (Start: 6 @14410 has 15 MA's), (9, 14440), (14, 14476), (19, 14503), (31, 14608), (32, 14614), (34, 14635), (55, 14806), (58, 14845), (62, 14884), (66, 14896), (74, 15004), (81, 15079), (85, 15118), (89, 15148), (91, 15178), (93, 15214), (96, 15226), (118, 15373), (127, 15448), (129, 15463), (131, 15493), (135, 15526),

Gene: HunterDalle\_16 Start: 14401, Stop: 15558, Start Num: 5

Candidate Starts for HunterDalle\_16:

(Start: 5 @14401 has 82 MA's), (Start: 6 @14404 has 15 MA's), (9, 14431), (Start: 10 @14440 has 1 MA's), (14, 14467), (20, 14500), (37, 14677), (64, 14881), (85, 15112), (87, 15127), (93, 15208), (111, 15331), (118, 15367), (119, 15370), (127, 15442), (131, 15487), (142, 15553),

Gene: Huntingdon\_20 Start: 16038, Stop: 17195, Start Num: 5

Candidate Starts for Huntingdon\_20:

(Start: 5 @16038 has 82 MA's), (Start: 6 @16041 has 15 MA's), (8, 16062), (9, 16068), (Start: 10 @16077 has 1 MA's), (32, 16242), (34, 16263), (64, 16518), (76, 16671), (85, 16749), (87, 16764), (90, 16800), (93, 16845), (98, 16878), (113, 16980), (118, 17004), (130, 17118), (136, 17163),

Gene: Immaculata\_20 Start: 16036, Stop: 17193, Start Num: 5

Candidate Starts for Immaculata\_20:

(Start: 5 @16036 has 82 MA's), (Start: 6 @16039 has 15 MA's), (8, 16060), (9, 16066), (20, 16135), (32, 16240), (40, 16333), (43, 16363), (58, 16471), (64, 16516), (76, 16669), (80, 16699), (85, 16747), (87, 16762), (90, 16798), (93, 16843), (113, 16978), (118, 17002), (128, 17089), (135, 17155), (136, 17161), (142, 17188),

Gene: Ispertia\_26 Start: 17304, Stop: 18395, Start Num: 15

Candidate Starts for Ispertia\_26:

(Start: 7 @17241 has 1 MA's), (15, 17304), (23, 17364), (31, 17433), (40, 17535), (46, 17589), (70, 17787), (79, 17895), (84, 17943), (104, 18141), (110, 18174), (120, 18219), (138, 18378),

Gene: IttyBittyPiggy\_18 Start: 14441, Stop: 15652, Start Num: 6

Candidate Starts for IttyBittyPiggy\_18:

(Start: 5 @14438 has 82 MA's), (Start: 6 @14441 has 15 MA's), (30, 14621), (47, 14795), (69, 15017), (79, 15140), (90, 15260), (93, 15305), (128, 15551),

Gene: Joann\_20 Start: 16032, Stop: 17189, Start Num: 5

Candidate Starts for Joann\_20:

(Start: 5 @16032 has 82 MA's), (Start: 6 @16035 has 15 MA's), (8, 16056), (Start: 10 @16071 has 1 MA's), (32, 16236), (34, 16257), (64, 16512), (78, 16677), (87, 16758), (90, 16794), (93, 16839), (97, 16863), (106, 16932), (113, 16974), (118, 16998), (130, 17112), (135, 17151), (136, 17157), (137, 17163), (142, 17184),

Gene: Jumboset\_20 Start: 15985, Stop: 17142, Start Num: 5

Candidate Starts for Jumboset\_20:

(Start: 5 @15985 has 82 MA's), (Start: 6 @15988 has 15 MA's), (8, 16009), (20, 16084), (26, 16144), (32, 16189), (34, 16210), (40, 16282), (43, 16312), (58, 16420), (64, 16465), (76, 16618), (80, 16648), (85, 16696), (90, 16747), (93, 16792), (113, 16927), (118, 16951), (128, 17038), (135, 17104), (136, 17110), (142, 17137),

Gene: Kalizoi\_20 Start: 15984, Stop: 17141, Start Num: 5

Candidate Starts for Kalizoi\_20:

(Start: 5 @15984 has 82 MA's), (Start: 6 @15987 has 15 MA's), (8, 16008), (20, 16083), (26, 16143), (32, 16188), (34, 16209), (40, 16281), (43, 16311), (50, 16353), (58, 16419), (64, 16464), (76, 16617), (80, 16647), (85, 16695), (87, 16710), (90, 16746), (93, 16791), (113, 16926), (118, 16950), (128, 17037), (135, 17103), (136, 17109), (142, 17136),

Gene: KeAlii\_18 Start: 13937, Stop: 15121, Start Num: 6

Candidate Starts for KeAlii\_18:

(Start: 5 @13934 has 82 MA's), (Start: 6 @13937 has 15 MA's), (8, 13955), (11, 13973), (12, 13985), (19, 14024), (22, 14048), (29, 14102), (30, 14111), (59, 14381), (68, 14459), (90, 14729), (93, 14774), (128, 15020), (132, 15053), (140, 15104),

Gene: KingBob\_16 Start: 14410, Stop: 15567, Start Num: 5

Candidate Starts for KingBob\_16:

(Start: 5 @14410 has 82 MA's), (Start: 6 @14413 has 15 MA's), (8, 14434), (9, 14440), (Start: 10 @14449 has 1 MA's), (14, 14476), (32, 14614), (37, 14686), (64, 14890), (78, 15055), (85, 15121), (93, 15217), (109, 15325), (111, 15340), (114, 15355), (118, 15376), (120, 15382), (127, 15451), (131, 15496), (142, 15562),

Gene: Kittykat\_16 Start: 14431, Stop: 15585, Start Num: 5

Candidate Starts for Kittykat\_16:

(Start: 5 @14431 has 82 MA's), (Start: 6 @14434 has 15 MA's), (8, 14455), (19, 14524), (31, 14629), (32, 14635), (34, 14656), (43, 14758), (53, 14809), (56, 14842), (58, 14866), (62, 14905), (66, 14917), (81, 15100), (85, 15139), (89, 15169), (91, 15199), (93, 15235), (118, 15394), (131, 15514), (142, 15580),

Gene: Korra\_21 Start: 15990, Stop: 17147, Start Num: 5

Candidate Starts for Korra\_21:

(Start: 5 @15990 has 82 MA's), (Start: 6 @15993 has 15 MA's), (8, 16014), (20, 16089), (32, 16194), (34, 16215), (40, 16287), (43, 16317), (58, 16425), (64, 16470), (76, 16623), (80, 16653), (85, 16701),

(87, 16716), (90, 16752), (93, 16797), (118, 16956), (120, 16962), (128, 17043), (135, 17109), (136, 17115), (142, 17142),

Gene: Lakshmi\_20 Start: 16057, Stop: 17214, Start Num: 5

Candidate Starts for Lakshmi\_20:

(Start: 5 @16057 has 82 MA's), (Start: 6 @16060 has 15 MA's), (8, 16081), (9, 16087), (Start: 10 @16096 has 1 MA's), (32, 16261), (34, 16282), (64, 16537), (78, 16702), (87, 16783), (90, 16819), (93, 16864), (97, 16888), (106, 16957), (113, 16999), (118, 17023), (129, 17113), (130, 17137), (135, 17176), (136, 17182), (137, 17188), (142, 17209),

Gene: Lasagna\_16 Start: 14407, Stop: 15561, Start Num: 5

Candidate Starts for Lasagna\_16:

(Start: 5 @14407 has 82 MA's), (Start: 6 @14410 has 15 MA's), (9, 14437), (19, 14500), (24, 14542), (26, 14566), (32, 14611), (58, 14842), (62, 14881), (66, 14893), (74, 15001), (77, 15043), (81, 15076), (87, 15130), (91, 15175), (93, 15211), (96, 15223), (105, 15301), (118, 15370), (127, 15445), (129, 15460), (131, 15490), (135, 15523), (141, 15553),

Gene: Lennox\_16 Start: 14395, Stop: 15549, Start Num: 5

Candidate Starts for Lennox\_16:

(Start: 5 @14395 has 82 MA's), (Start: 6 @14398 has 15 MA's), (9, 14425), (19, 14488), (24, 14530), (26, 14554), (32, 14599), (58, 14830), (62, 14869), (66, 14881), (74, 14989), (77, 15031), (81, 15064), (85, 15103), (87, 15118), (91, 15163), (93, 15199), (96, 15211), (105, 15289), (118, 15358), (127, 15433), (129, 15448), (131, 15478), (135, 15511), (141, 15541),

Gene: LilStuart\_16 Start: 14395, Stop: 15549, Start Num: 5

Candidate Starts for LilStuart\_16:

(Start: 5 @14395 has 82 MA's), (Start: 6 @14398 has 15 MA's), (9, 14425), (19, 14488), (24, 14530), (26, 14554), (32, 14599), (58, 14830), (62, 14869), (66, 14881), (74, 14989), (77, 15031), (81, 15064), (87, 15118), (91, 15163), (93, 15199), (96, 15211), (105, 15289), (118, 15358), (127, 15433), (129, 15448), (131, 15478), (135, 15511), (141, 15541),

Gene: Litotes\_20 Start: 16024, Stop: 17181, Start Num: 5

Candidate Starts for Litotes\_20:

(Start: 5 @16024 has 82 MA's), (Start: 6 @16027 has 15 MA's), (14, 16090), (32, 16228), (50, 16393), (76, 16657), (77, 16660), (78, 16669), (87, 16750), (93, 16831), (96, 16843), (105, 16921), (111, 16954), (118, 16990), (119, 16993), (136, 17149),

Gene: Lucy\_16 Start: 14387, Stop: 15541, Start Num: 5

Candidate Starts for Lucy\_16:

(Start: 5 @14387 has 82 MA's), (Start: 6 @14390 has 15 MA's), (9, 14417), (19, 14480), (24, 14522), (26, 14546), (32, 14591), (58, 14822), (62, 14861), (66, 14873), (74, 14981), (77, 15023), (81, 15056), (87, 15110), (91, 15155), (93, 15191), (96, 15203), (105, 15281), (118, 15350), (127, 15425), (129, 15440), (131, 15470), (135, 15503), (141, 15533),

Gene: Makoto\_16 Start: 14411, Stop: 15562, Start Num: 6

Candidate Starts for Makoto\_16:

(Start: 5 @14408 has 82 MA's), (Start: 6 @14411 has 15 MA's), (9, 14438), (19, 14501), (24, 14543), (26, 14567), (32, 14612), (58, 14843), (62, 14882), (66, 14894), (74, 15002), (77, 15044), (81, 15077), (87, 15131), (91, 15176), (93, 15212), (96, 15224), (105, 15302), (118, 15371), (127, 15446), (129, 15461), (131, 15491), (135, 15524), (141, 15554),

Gene: MamaPearl\_16 Start: 14415, Stop: 15572, Start Num: 5

Candidate Starts for MamaPearl\_16:

(Start: 5 @14415 has 82 MA's), (Start: 6 @14418 has 15 MA's), (9, 14445), (24, 14550), (32, 14619), (50, 14784), (53, 14793), (55, 14811), (56, 14826), (90, 15177), (91, 15186), (93, 15222), (107, 15318), (113, 15357), (118, 15381), (132, 15504), (136, 15540), (142, 15567),

Gene: Maria1952\_16 Start: 14413, Stop: 15567, Start Num: 6

Candidate Starts for Maria1952\_16:

(Start: 5 @14410 has 82 MA's), (Start: 6 @14413 has 15 MA's), (8, 14434), (9, 14440), (Start: 10 @14449 has 1 MA's), (14, 14476), (32, 14614), (37, 14686), (64, 14890), (78, 15055), (85, 15121), (93, 15217), (109, 15325), (111, 15340), (114, 15355), (118, 15376), (120, 15382), (127, 15451), (131, 15496), (142, 15562),

Gene: MeganNoll\_20 Start: 16042, Stop: 17199, Start Num: 5

Candidate Starts for MeganNoll\_20:

(Start: 5 @16042 has 82 MA's), (Start: 6 @16045 has 15 MA's), (8, 16066), (20, 16141), (26, 16201), (32, 16246), (34, 16267), (40, 16339), (43, 16369), (58, 16477), (64, 16522), (76, 16675), (80, 16705), (85, 16753), (90, 16804), (93, 16849), (113, 16984), (118, 17008), (128, 17095), (135, 17161), (136, 17167), (142, 17194),

Gene: Misaeng\_20 Start: 16102, Stop: 17259, Start Num: 5

Candidate Starts for Misaeng\_20:

(Start: 5 @16102 has 82 MA's), (Start: 6 @16105 has 15 MA's), (8, 16126), (9, 16132), (Start: 10 @16141 has 1 MA's), (32, 16306), (34, 16327), (64, 16582), (76, 16735), (85, 16813), (87, 16828), (90, 16864), (93, 16909), (98, 16942), (113, 17044), (118, 17068), (130, 17182), (136, 17227),

Gene: MissSwiss\_18 Start: 14398, Stop: 15609, Start Num: 6

Candidate Starts for MissSwiss\_18:

(Start: 5 @14395 has 82 MA's), (Start: 6 @14398 has 15 MA's), (11, 14440), (19, 14491), (30, 14578), (47, 14752), (54, 14815), (65, 14929), (69, 14974), (78, 15094), (85, 15166), (90, 15217), (92, 15235), (93, 15262), (102, 15328), (113, 15397), (128, 15508), (132, 15541), (140, 15592),

Gene: Moki\_16 Start: 14407, Stop: 15564, Start Num: 5

Candidate Starts for Moki\_16:

(Start: 5 @14407 has 82 MA's), (Start: 6 @14410 has 15 MA's), (9, 14440), (14, 14476), (19, 14503), (31, 14608), (32, 14614), (34, 14635), (55, 14806), (58, 14845), (62, 14884), (66, 14896), (74, 15004), (81, 15079), (85, 15118), (89, 15148), (91, 15178), (93, 15214), (96, 15226), (118, 15373), (127, 15448), (129, 15463), (131, 15493), (135, 15526),

Gene: MrGloopy\_20 Start: 15976, Stop: 17133, Start Num: 5

Candidate Starts for MrGloopy\_20:

(Start: 5 @15976 has 82 MA's), (Start: 6 @15979 has 15 MA's), (8, 16000), (20, 16075), (26, 16135), (32, 16180), (34, 16201), (40, 16273), (43, 16303), (58, 16411), (64, 16456), (76, 16609), (80, 16639), (85, 16687), (90, 16738), (93, 16783), (113, 16918), (118, 16942), (128, 17029), (135, 17095), (136, 17101), (142, 17128),

Gene: Nancia\_16 Start: 14407, Stop: 15561, Start Num: 5

Candidate Starts for Nancia\_16:

(Start: 5 @14407 has 82 MA's), (Start: 6 @14410 has 15 MA's), (9, 14437), (19, 14500), (24, 14542), (26, 14566), (32, 14611), (58, 14842), (62, 14881), (66, 14893), (74, 15001), (77, 15043), (81, 15076), (87, 15130), (91, 15175), (93, 15211), (96, 15223), (105, 15301), (118, 15370), (127, 15445), (129, 15460), (131, 15490), (135, 15523), (141, 15553),

Gene: Nubia\_20 Start: 16056, Stop: 17174, Start Num: 10

Candidate Starts for Nubia\_20:

(Start: 5 @16017 has 82 MA's), (Start: 6 @16020 has 15 MA's), (8, 16041), (9, 16047), (Start: 10 @16056 has 1 MA's), (32, 16221), (34, 16242), (64, 16497), (78, 16662), (87, 16743), (90, 16779), (93, 16824), (97, 16848), (106, 16917), (113, 16959), (118, 16983), (130, 17097), (135, 17136), (136, 17142), (137, 17148), (142, 17169),

Gene: OMalley\_16 Start: 14401, Stop: 15558, Start Num: 5

Candidate Starts for OMalley\_16:

(Start: 5 @14401 has 82 MA's), (Start: 6 @14404 has 15 MA's), (9, 14431), (Start: 10 @14440 has 1 MA's), (14, 14467), (23, 14530), (37, 14677), (64, 14881), (85, 15112), (87, 15127), (93, 15208), (111, 15331), (118, 15367), (119, 15370), (127, 15442), (131, 15487), (142, 15553),

Gene: ObiToo\_18 Start: 14086, Stop: 15297, Start Num: 5

Candidate Starts for ObiToo\_18:

(Start: 5 @14086 has 82 MA's), (Start: 6 @14089 has 15 MA's), (27, 14251), (30, 14266), (32, 14290), (51, 14470), (54, 14503), (76, 14770), (88, 14872), (90, 14905), (93, 14950), (128, 15196), (132, 15229), (133, 15235), (137, 15271), (140, 15280),

Gene: OscarSo\_29 Start: 19754, Stop: 20926, Start Num: 7

Candidate Starts for OscarSo\_29:

(Start: 7 @19754 has 1 MA's), (11, 19787), (16, 19820), (24, 19883), (33, 19970), (35, 19988), (48, 20111), (72, 20345), (79, 20420), (86, 20486), (103, 20663), (104, 20669), (115, 20723), (117, 20735), (124, 20798), (138, 20906), (139, 20909),

Gene: OurGirlNessie\_16 Start: 14387, Stop: 15541, Start Num: 5

Candidate Starts for OurGirlNessie\_16:

(Start: 5 @14387 has 82 MA's), (Start: 6 @14390 has 15 MA's), (9, 14417), (19, 14480), (24, 14522), (26, 14546), (32, 14591), (58, 14822), (62, 14861), (66, 14873), (74, 14981), (77, 15023), (81, 15056), (87, 15110), (91, 15155), (93, 15191), (96, 15203), (118, 15350), (127, 15425), (129, 15440), (131, 15470), (135, 15503), (141, 15533),

Gene: Oxynfrius\_20 Start: 16030, Stop: 17187, Start Num: 5

Candidate Starts for Oxynfrius\_20:

(Start: 5 @16030 has 82 MA's), (Start: 6 @16033 has 15 MA's), (8, 16054), (9, 16060), (Start: 10 @16069 has 1 MA's), (20, 16129), (26, 16189), (32, 16234), (34, 16255), (64, 16510), (78, 16675), (87, 16756), (90, 16792), (93, 16837), (97, 16861), (106, 16930), (113, 16972), (118, 16996), (130, 17110), (135, 17149), (136, 17155), (137, 17161), (142, 17182),

Gene: PartyCup\_20 Start: 16071, Stop: 17228, Start Num: 5

Candidate Starts for PartyCup\_20:

(Start: 5 @16071 has 82 MA's), (Start: 6 @16074 has 15 MA's), (14, 16137), (32, 16275), (50, 16440), (76, 16704), (77, 16707), (78, 16716), (87, 16797), (93, 16878), (96, 16890), (105, 16968), (106, 16971), (111, 17001), (118, 17037), (136, 17196),

Gene: PinkFriday\_16 Start: 14431, Stop: 15588, Start Num: 5

Candidate Starts for PinkFriday\_16:

(Start: 5 @14431 has 82 MA's), (Start: 6 @14434 has 15 MA's), (9, 14461), (Start: 10 @14470 has 1 MA's), (14, 14497), (19, 14524), (26, 14590), (34, 14656), (50, 14800), (53, 14809), (64, 14911), (80, 15094), (82, 15106), (88, 15160), (91, 15202), (93, 15238), (109, 15346), (111, 15361), (118, 15397), (119, 15400), (131, 15517), (140, 15571), (142, 15583),

Gene: PitaDog\_16 Start: 14398, Stop: 15552, Start Num: 5

Candidate Starts for PitaDog\_16:

(Start: 5 @14398 has 82 MA's), (Start: 6 @14401 has 15 MA's), (9, 14428), (19, 14491), (24, 14533), (26, 14557), (32, 14602), (58, 14833), (62, 14872), (66, 14884), (74, 14992), (77, 15034), (81, 15067), (87, 15121), (91, 15166), (93, 15202), (96, 15214), (105, 15292), (118, 15361), (127, 15436), (129, 15451), (131, 15481), (135, 15514), (141, 15544),

Gene: Potatoes\_20 Start: 16037, Stop: 17194, Start Num: 5

Candidate Starts for Potatoes\_20:

(Start: 5 @16037 has 82 MA's), (Start: 6 @16040 has 15 MA's), (8, 16061), (9, 16067), (20, 16136), (32, 16241), (40, 16334), (43, 16364), (58, 16472), (64, 16517), (76, 16670), (80, 16700), (85, 16748), (87, 16763), (90, 16799), (93, 16844), (113, 16979), (118, 17003), (128, 17090), (135, 17156), (136, 17162), (142, 17189),

Gene: Preamble\_16 Start: 14408, Stop: 15562, Start Num: 5

Candidate Starts for Preamble\_16:

(Start: 5 @14408 has 82 MA's), (Start: 6 @14411 has 15 MA's), (8, 14432), (19, 14501), (31, 14606), (32, 14612), (34, 14633), (53, 14786), (56, 14819), (58, 14843), (62, 14882), (66, 14894), (81, 15077), (85, 15116), (89, 15146), (91, 15176), (93, 15212), (118, 15371), (129, 15461), (131, 15491), (142, 15557),

Gene: Pterodactyl\_16 Start: 14391, Stop: 15542, Start Num: 6

Candidate Starts for Pterodactyl\_16:

(Start: 5 @14388 has 82 MA's), (Start: 6 @14391 has 15 MA's), (9, 14418), (19, 14481), (24, 14523), (26, 14547), (32, 14592), (58, 14823), (62, 14862), (66, 14874), (74, 14982), (77, 15024), (81, 15057), (87, 15111), (91, 15156), (93, 15192), (96, 15204), (105, 15282), (118, 15351), (127, 15426), (129, 15441), (131, 15471), (135, 15504), (141, 15534),

Gene: Pumancara\_16 Start: 14412, Stop: 15569, Start Num: 5

Candidate Starts for Pumancara\_16:

(Start: 5 @14412 has 82 MA's), (Start: 6 @14415 has 15 MA's), (9, 14442), (Start: 10 @14451 has 1 MA's), (14, 14478), (32, 14616), (37, 14688), (64, 14892), (73, 14988), (78, 15057), (85, 15123), (93, 15219), (109, 15327), (111, 15342), (114, 15357), (118, 15378), (120, 15384), (127, 15453), (131, 15498), (135, 15531),

Gene: RAP15\_20 Start: 16042, Stop: 17199, Start Num: 5

Candidate Starts for RAP15\_20:

(Start: 5 @16042 has 82 MA's), (Start: 6 @16045 has 15 MA's), (8, 16066), (20, 16141), (26, 16201), (32, 16246), (34, 16267), (40, 16339), (43, 16369), (58, 16477), (64, 16522), (76, 16675), (80, 16705), (85, 16753), (90, 16804), (93, 16849), (113, 16984), (118, 17008), (128, 17095), (135, 17161), (136, 17167), (142, 17194),

Gene: RcigaStruga\_20 Start: 16038, Stop: 17195, Start Num: 5

Candidate Starts for RcigaStruga\_20:

(Start: 5 @16038 has 82 MA's), (Start: 6 @16041 has 15 MA's), (8, 16062), (9, 16068), (Start: 10 @16077 has 1 MA's), (32, 16242), (34, 16263), (64, 16518), (76, 16671), (85, 16749), (87, 16764), (90, 16800), (93, 16845), (98, 16878), (113, 16980), (118, 17004), (130, 17118), (136, 17163),

Gene: Reedo\_18 Start: 13956, Stop: 15140, Start Num: 6

Candidate Starts for Reedo\_18:

(Start: 5 @13953 has 82 MA's), (Start: 6 @13956 has 15 MA's), (8, 13974), (12, 14004), (19, 14043), (29, 14121), (30, 14130), (34, 14175), (66, 14463), (69, 14505), (89, 14727), (90, 14748), (92, 14766), (93, 14793), (98, 14826), (128, 15039), (132, 15072), (135, 15102), (137, 15114),

Gene: Riovina\_16 Start: 14401, Stop: 15558, Start Num: 5



Candidate Starts for Riovina\_16:

(Start: 5 @14401 has 82 MA's), (Start: 6 @14404 has 15 MA's), (9, 14431), (Start: 10 @14440 has 1 MA's), (14, 14467), (23, 14530), (37, 14677), (64, 14881), (85, 15112), (87, 15127), (93, 15208), (111, 15331), (118, 15367), (119, 15370), (127, 15442), (131, 15487), (142, 15553),

Gene: Riverdale\_20 Start: 15972, Stop: 17129, Start Num: 5

Candidate Starts for Riverdale\_20:

(Start: 5 @15972 has 82 MA's), (Start: 6 @15975 has 15 MA's), (8, 15996), (20, 16071), (34, 16197), (43, 16299), (58, 16407), (64, 16452), (76, 16605), (85, 16683), (90, 16734), (93, 16779), (113, 16914), (118, 16938), (120, 16944), (135, 17091), (136, 17097), (142, 17124),

Gene: Rozby\_20 Start: 15973, Stop: 17130, Start Num: 5

Candidate Starts for Rozby\_20:

(Start: 5 @15973 has 82 MA's), (Start: 6 @15976 has 15 MA's), (8, 15997), (20, 16072), (26, 16132), (32, 16177), (34, 16198), (43, 16300), (58, 16408), (64, 16453), (76, 16606), (80, 16636), (85, 16684), (87, 16699), (90, 16735), (93, 16780), (113, 16915), (118, 16939), (120, 16945), (135, 17092), (136, 17098), (142, 17125),

Gene: Savage2526\_20 Start: 16036, Stop: 17193, Start Num: 5

Candidate Starts for Savage2526\_20:

(Start: 5 @16036 has 82 MA's), (Start: 6 @16039 has 15 MA's), (8, 16060), (20, 16135), (26, 16195), (32, 16240), (34, 16261), (40, 16333), (43, 16363), (58, 16471), (64, 16516), (76, 16669), (80, 16699), (85, 16747), (90, 16798), (93, 16843), (113, 16978), (118, 17002), (128, 17089), (135, 17155), (136, 17161), (142, 17188),

Gene: Scuttle\_20 Start: 16041, Stop: 17198, Start Num: 5

Candidate Starts for Scuttle\_20:

(Start: 5 @16041 has 82 MA's), (Start: 6 @16044 has 15 MA's), (8, 16065), (20, 16140), (34, 16266), (43, 16368), (58, 16476), (64, 16521), (76, 16674), (80, 16704), (85, 16752), (87, 16767), (90, 16803), (93, 16848), (113, 16983), (118, 17007), (120, 17013), (135, 17160), (136, 17166), (142, 17193),

Gene: Sergei\_16 Start: 14410, Stop: 15567, Start Num: 5

Candidate Starts for Sergei\_16:

(Start: 5 @14410 has 82 MA's), (Start: 6 @14413 has 15 MA's), (8, 14434), (9, 14440), (Start: 10 @14449 has 1 MA's), (14, 14476), (32, 14614), (37, 14686), (64, 14890), (78, 15055), (85, 15121), (93, 15217), (109, 15325), (111, 15340), (114, 15355), (118, 15376), (120, 15382), (127, 15451), (131, 15496), (142, 15562),

Gene: Shambre1\_19 Start: 15533, Stop: 16816, Start Num: 5

Candidate Starts for Shambre1\_19:

(1, 15008), (2, 15047), (4, 15443), (Start: 5 @15533 has 82 MA's), (Start: 6 @15536 has 15 MA's), (14, 15617), (16, 15623), (22, 15668), (26, 15710), (32, 15755), (33, 15770), (41, 15857), (44, 15890), (58, 15977), (66, 16031), (67, 16043), (68, 16046), (70, 16085), (75, 16163), (93, 16361), (100, 16406), (107, 16457), (112, 16484), (116, 16508), (118, 16520), (122, 16550), (129, 16613), (132, 16643), (135, 16673),

Gene: Snek\_18 Start: 12989, Stop: 14173, Start Num: 6

Candidate Starts for Snek\_18:

(3, 12893), (Start: 5 @12986 has 82 MA's), (Start: 6 @12989 has 15 MA's), (12, 13037), (19, 13076), (22, 13100), (29, 13154), (30, 13163), (47, 13337), (78, 13658), (89, 13760), (90, 13781), (93, 13826), (110, 13946), (128, 14072), (132, 14105), (140, 14156),

Gene: Sue2\_18 Start: 14593, Stop: 15807, Start Num: 5

Candidate Starts for Sue2\_18:

(Start: 5 @14593 has 82 MA's), (Start: 6 @14596 has 15 MA's), (11, 14638), (29, 14767), (30, 14776), (47, 14950), (52, 14986), (85, 15364), (90, 15415), (92, 15433), (93, 15460), (128, 15706), (132, 15739), (133, 15745),

Gene: Supakev\_16 Start: 14403, Stop: 15560, Start Num: 5

Candidate Starts for Supakev\_16:

(Start: 5 @14403 has 82 MA's), (Start: 6 @14406 has 15 MA's), (9, 14433), (Start: 10 @14442 has 1 MA's), (14, 14469), (23, 14532), (37, 14679), (64, 14883), (85, 15114), (87, 15129), (93, 15210), (111, 15333), (118, 15369), (119, 15372), (127, 15444), (131, 15489), (142, 15555),

Gene: Suppi\_20 Start: 16074, Stop: 17231, Start Num: 5

Candidate Starts for Suppi\_20:

(Start: 5 @16074 has 82 MA's), (Start: 6 @16077 has 15 MA's), (14, 16140), (32, 16278), (50, 16443), (76, 16707), (77, 16710), (78, 16719), (87, 16800), (93, 16881), (96, 16893), (105, 16971), (106, 16974), (111, 17004), (118, 17040), (136, 17199),

Gene: TattModd\_20 Start: 16035, Stop: 17192, Start Num: 5

Candidate Starts for TattModd\_20:

(Start: 5 @16035 has 82 MA's), (Start: 6 @16038 has 15 MA's), (8, 16059), (20, 16134), (26, 16194), (32, 16239), (34, 16260), (43, 16362), (58, 16470), (64, 16515), (76, 16668), (80, 16698), (85, 16746), (90, 16797), (93, 16842), (113, 16977), (118, 17001), (128, 17088), (135, 17154), (136, 17160), (142, 17187),

Gene: Temper16\_16 Start: 14410, Stop: 15567, Start Num: 5

Candidate Starts for Temper16\_16:

(Start: 5 @14410 has 82 MA's), (Start: 6 @14413 has 15 MA's), (8, 14434), (9, 14440), (Start: 10 @14449 has 1 MA's), (14, 14476), (32, 14614), (37, 14686), (64, 14890), (78, 15055), (85, 15121), (93, 15217), (109, 15325), (111, 15340), (114, 15355), (118, 15376), (120, 15382), (127, 15451), (131, 15496), (142, 15562),

Gene: Tweety19\_18 Start: 12988, Stop: 14172, Start Num: 6

Candidate Starts for Tweety19\_18:

(3, 12892), (Start: 5 @12985 has 82 MA's), (Start: 6 @12988 has 15 MA's), (12, 13036), (19, 13075), (22, 13099), (29, 13153), (30, 13162), (47, 13336), (78, 13657), (89, 13759), (90, 13780), (93, 13825), (110, 13945), (128, 14071), (132, 14104), (140, 14155),

Gene: Urla\_16 Start: 14417, Stop: 15574, Start Num: 5

Candidate Starts for Urla\_16:

(Start: 5 @14417 has 82 MA's), (Start: 6 @14420 has 15 MA's), (9, 14447), (32, 14621), (50, 14786), (53, 14795), (55, 14813), (56, 14828), (85, 15128), (90, 15179), (91, 15188), (93, 15224), (107, 15320), (113, 15359), (118, 15383), (136, 15542), (142, 15569),

Gene: VResidence\_18 Start: 14006, Stop: 15220, Start Num: 5

Candidate Starts for VResidence\_18:

(Start: 5 @14006 has 82 MA's), (Start: 6 @14009 has 15 MA's), (11, 14051), (19, 14102), (30, 14189), (42, 14324), (66, 14543), (69, 14585), (73, 14636), (90, 14828), (93, 14873), (102, 14939), (105, 14963), (118, 15032), (128, 15119), (132, 15152),

Gene: Vallejo\_20 Start: 15974, Stop: 17131, Start Num: 5

Candidate Starts for Vallejo\_20:

(Start: 5 @15974 has 82 MA's), (Start: 6 @15977 has 15 MA's), (8, 15998), (20, 16073), (34, 16199), (43, 16301), (58, 16409), (64, 16454), (76, 16607), (80, 16637), (85, 16685), (87, 16700), (90, 16736),

(93, 16781), (113, 16916), (118, 16940), (120, 16946), (132, 17063), (135, 17093), (136, 17099), (142, 17126),

Gene: Vulture\_16 Start: 14401, Stop: 15558, Start Num: 5

Candidate Starts for Vulture\_16:

(Start: 5 @14401 has 82 MA's), (Start: 6 @14404 has 15 MA's), (9, 14431), (Start: 10 @14440 has 1 MA's), (14, 14467), (20, 14500), (37, 14677), (64, 14881), (85, 15112), (87, 15127), (93, 15208), (111, 15331), (118, 15367), (119, 15370), (127, 15442), (131, 15487), (142, 15553),

Gene: Wawa\_20 Start: 16011, Stop: 17168, Start Num: 5

Candidate Starts for Wawa\_20:

(Start: 5 @16011 has 82 MA's), (Start: 6 @16014 has 15 MA's), (8, 16035), (20, 16110), (26, 16170), (32, 16215), (34, 16236), (43, 16338), (58, 16446), (64, 16491), (76, 16644), (80, 16674), (85, 16722), (90, 16773), (93, 16818), (113, 16953), (118, 16977), (128, 17064), (135, 17130), (136, 17136), (142, 17163),

Gene: Wayne\_20 Start: 16120, Stop: 17277, Start Num: 5

Candidate Starts for Wayne\_20:

(Start: 5 @16120 has 82 MA's), (Start: 6 @16123 has 15 MA's), (14, 16186), (32, 16324), (50, 16489), (76, 16753), (77, 16756), (78, 16765), (87, 16846), (93, 16927), (96, 16939), (105, 17017), (111, 17050), (118, 17086), (119, 17089), (136, 17245),

Gene: Wildwest\_19 Start: 15358, Stop: 16572, Start Num: 5

Candidate Starts for Wildwest\_19:

(Start: 5 @15358 has 82 MA's), (Start: 6 @15361 has 15 MA's), (30, 15541), (45, 15709), (47, 15715), (51, 15745), (52, 15751), (63, 15886), (65, 15892), (69, 15937), (78, 16057), (90, 16180), (92, 16198), (93, 16225), (107, 16321), (128, 16471), (132, 16504), (140, 16555),

Gene: WonderBoy\_16 Start: 14388, Stop: 15542, Start Num: 5

Candidate Starts for WonderBoy\_16:

(Start: 5 @14388 has 82 MA's), (Start: 6 @14391 has 15 MA's), (9, 14418), (19, 14481), (24, 14523), (26, 14547), (31, 14586), (32, 14592), (58, 14823), (62, 14862), (66, 14874), (77, 15024), (81, 15057), (85, 15096), (87, 15111), (91, 15156), (93, 15192), (96, 15204), (105, 15282), (118, 15351), (127, 15426), (129, 15441), (131, 15471), (135, 15504), (141, 15534),

Gene: Zorro\_20 Start: 15990, Stop: 17147, Start Num: 5

Candidate Starts for Zorro\_20:

(Start: 5 @15990 has 82 MA's), (Start: 6 @15993 has 15 MA's), (8, 16014), (20, 16089), (26, 16149), (32, 16194), (34, 16215), (40, 16287), (43, 16317), (50, 16359), (58, 16425), (64, 16470), (76, 16623), (80, 16653), (85, 16701), (87, 16716), (90, 16752), (93, 16797), (113, 16932), (118, 16956), (128, 17043), (135, 17109), (136, 17115), (142, 17142),