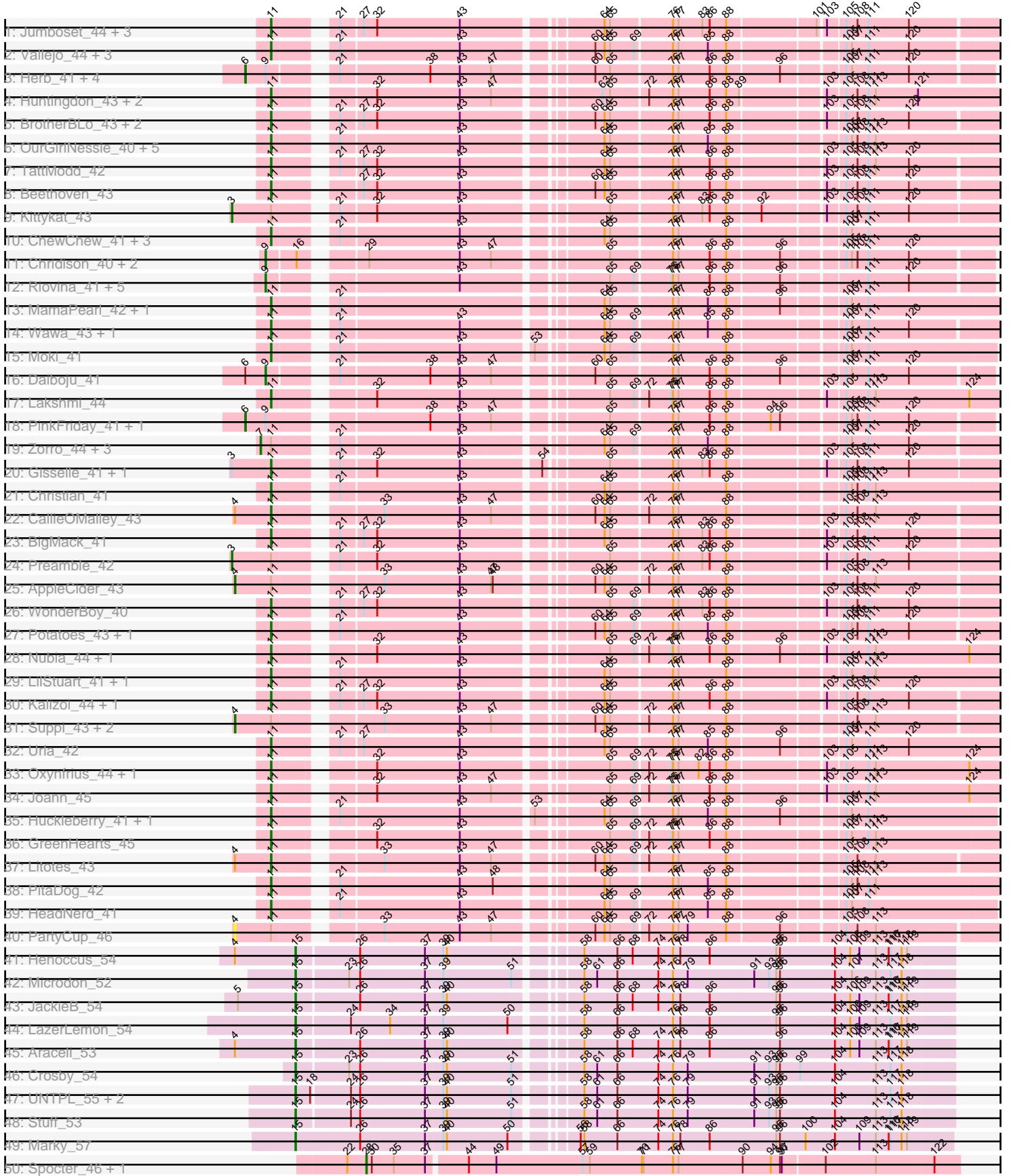
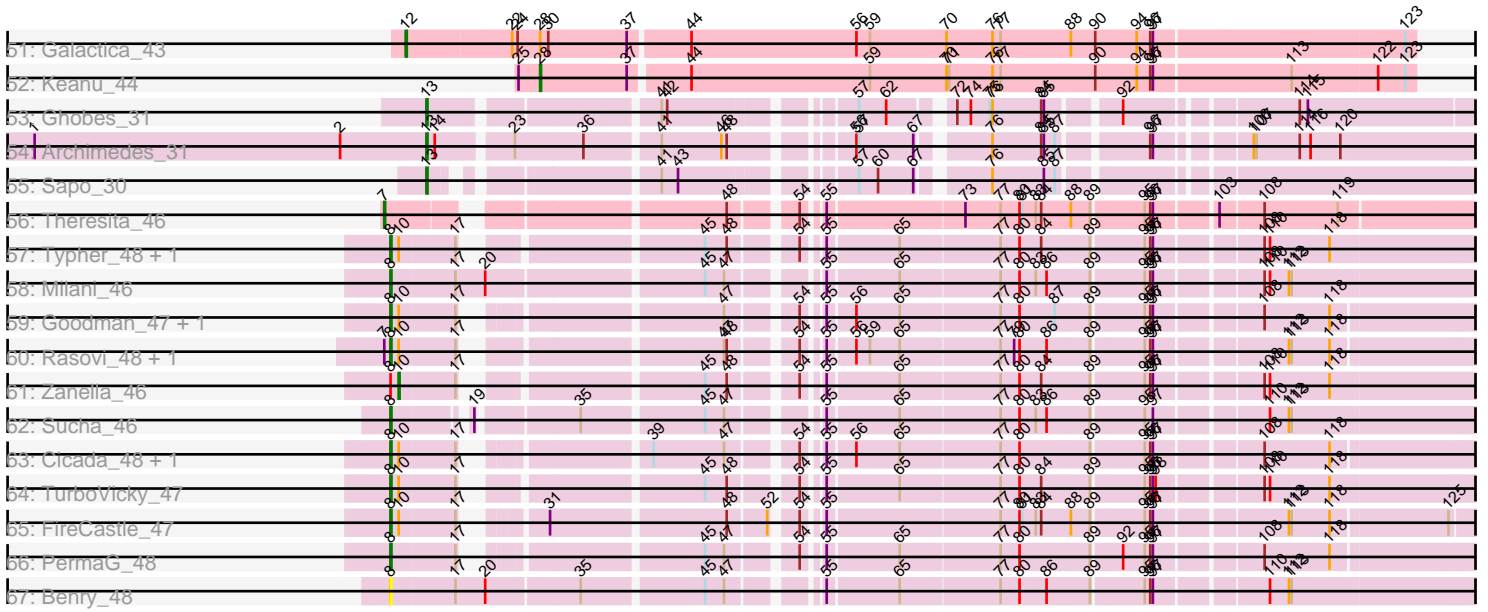


Pham 157716



Pham 157716



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 157716 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157716 has 118 members, 7 are drafts.

Phages represented in each track:

- Track 1 : Jumboset\_44, MrGloopy\_44, Glenn\_44, Savage2526\_44
- Track 2 : Vallejo\_44, Riverdale\_44, Immaculata\_43, Carpal\_43
- Track 3 : Herb\_41, Temper16\_41, Maria1952\_40, KingBob\_41, Sergei\_41
- Track 4 : Huntingdon\_43, Misaeng\_43, RcigaStruga\_43
- Track 5 : BrotherBLo\_43, Rozby\_43, Fluke\_44
- Track 6 : OurGirlNessie\_40, Lennox\_41, Makoto\_41, Lucy\_41, Pterodactyl\_41, DrRobert\_40
- Track 7 : TattModd\_42
- Track 8 : Beethoven\_43
- Track 9 : Kittykat\_43
- Track 10 : ChewChew\_41, Bodacious\_41, CristinaYang\_41, Nancia\_41
- Track 11 : Chridison\_40, Vulture\_41, HunterDalle\_41
- Track 12 : Riovina\_41, AustinPowers\_42, Supakev\_41, OMalley\_41, Eunoia\_41, Aledel\_41
- Track 13 : MamaPearl\_42, EstebanJulior\_42
- Track 14 : Wawa\_43, Korra\_43
- Track 15 : Moki\_41
- Track 16 : Daiboju\_41
- Track 17 : Lakshmi\_44
- Track 18 : PinkFriday\_41, Pumancara\_41
- Track 19 : Zorro\_44, MeganNoll\_43, Dino\_44, RAP15\_44
- Track 20 : Gisselle\_41, DreamTeam\_41
- Track 21 : Christian\_41
- Track 22 : CallieOMalley\_43
- Track 23 : BigMack\_41
- Track 24 : Preamble\_42
- Track 25 : AppleCider\_43
- Track 26 : WonderBoy\_40
- Track 27 : Potatoes\_43, Cholula\_43
- Track 28 : Nubia\_44, Albanese\_44
- Track 29 : LilStuart\_41, Lasagna\_40
- Track 30 : Kalizoi\_44, Scuttle\_43
- Track 31 : Suppi\_43, Wayne\_43, Canowicakte\_43
- Track 32 : Urla\_42
- Track 33 : Oxynfrius\_44, Greenhouse\_45
- Track 34 : Joann\_45
- Track 35 : Huckleberry\_41, Bennie\_41

- Track 36 : GreenHearts\_45
- Track 37 : Litotes\_43
- Track 38 : PitaDog\_42
- Track 39 : HeadNerd\_41
- Track 40 : PartyCup\_46
- Track 41 : Henoccus\_54
- Track 42 : Microdon\_52
- Track 43 : JackieB\_54
- Track 44 : LazerLemon\_54
- Track 45 : Araceli\_53
- Track 46 : Crosby\_54
- Track 47 : UNTPL\_55, Bogota\_54, Intolerant\_51
- Track 48 : Stuff\_53
- Track 49 : Marky\_57
- Track 50 : Spocter\_46, Hiyaa\_45
- Track 51 : Galactica\_43
- Track 52 : Keanu\_44
- Track 53 : Ghobes\_31
- Track 54 : Archimedes\_31
- Track 55 : Sapo\_30
- Track 56 : Theresita\_46
- Track 57 : Typher\_48, Jera\_47
- Track 58 : Milani\_46
- Track 59 : Goodman\_47, Johann\_47
- Track 60 : Rasovi\_48, Htur\_47
- Track 61 : Zanella\_46
- Track 62 : Sucha\_46
- Track 63 : Cicada\_48, SBlackberry\_46
- Track 64 : TurboVicky\_47
- Track 65 : FireCastle\_47
- Track 66 : PermaG\_48
- Track 67 : Benry\_48

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

The start number called the most often in the published annotations is 11, it was called in 55 of the 111 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• Albanese\_44, Beethoven\_43, Bennie\_41, BigMack\_41, Bodacious\_41, BrotherBLo\_43, CallieOMalley\_43, Carpal\_43, ChewChew\_41, Cholula\_43, Christian\_41, CristinaYang\_41, DrRobert\_40, DreamTeam\_41, EstebanJulior\_42, Fluke\_44, Gisselle\_41, Glenn\_44, GreenHearts\_45, Greenhouse\_45, HeadNerd\_41, Huckleberry\_41, Huntingdon\_43, Immaculata\_43, Joann\_45, Jumboset\_44, Kalizoi\_44, Korra\_43, Lakshmi\_44, Lasagna\_40, Lennox\_41, LilStuart\_41, Litotes\_43, Lucy\_41, Makoto\_41, MamaPearl\_42, Misaeng\_43, Moki\_41, MrGloopy\_44, Nancia\_41, Nubia\_44, OurGirlNessie\_40, Oxyftrius\_44, PitaDog\_42, Potatoes\_43, Pterodactyl\_41, RcigaStruga\_43, Riverdale\_44, Rozby\_43, Savage2526\_44, Scuttle\_43, TattModd\_42, Urla\_42, Vallejo\_44, Wawa\_43, WonderBoy\_40,

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

- AppleCider\_43, Canowicakte\_43, Dino\_44, Kittykat\_43, MeganNoll\_43, PartyCup\_46, Preamble\_42, RAP15\_44, Suppi\_43, Wayne\_43, Zorro\_44,

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

- Aledel\_41, Araceli\_53, Archimedes\_31, AustinPowers\_42, Benry\_48, Bogota\_54, Chridison\_40, Cicada\_48, Crosby\_54, Daiboju\_41, Eunoia\_41, FireCastle\_47, Galactica\_43, Ghobes\_31, Goodman\_47, Henoccus\_54, Herb\_41, Hiyaa\_45, Htur\_47, HunterDalle\_41, Intolerant\_51, JackieB\_54, Jera\_47, Johann\_47, Keanu\_44, KingBob\_41, LazerLemon\_54, Maria1952\_40, Marky\_57, Microdon\_52, Milani\_46, OMalley\_41, PermaG\_48, PinkFriday\_41, Pumancara\_41, Rasovi\_48, Rivovina\_41, SBlackberry\_46, Sapo\_30, Sergei\_41, Spocter\_46, Stuff\_53, Sucha\_46, Supakev\_41, Temper16\_41, Theresita\_46, TurboVicky\_47, Typher\_48, UNTPL\_55, Vulture\_41, Zanella\_46,

### Summary by start number:

Start 3:

- Found in 4 of 118 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 2 of 111
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Kittykat\_43 (AK), Preamble\_42 (AK),

Start 4:

- Found in 9 of 118 ( 7.6% ) of genes in pham
- Manual Annotations of this start: 4 of 111
- Called 55.6% of time when present
- Phage (with cluster) where this start called: AppleCider\_43 (AK), Canowicakte\_43 (AK), PartyCup\_46 (AK), Suppi\_43 (AK), Wayne\_43 (AK),

Start 6:

- Found in 8 of 118 ( 6.8% ) of genes in pham
- Manual Annotations of this start: 6 of 111
- Called 87.5% of time when present
- Phage (with cluster) where this start called: Herb\_41 (AK), KingBob\_41 (AK), Maria1952\_40 (AK), PinkFriday\_41 (AK), Pumancara\_41 (AK), Sergei\_41 (AK), Temper16\_41 (AK),

Start 7:

- Found in 7 of 118 ( 5.9% ) of genes in pham
- Manual Annotations of this start: 5 of 111
- Called 71.4% of time when present
- Phage (with cluster) where this start called: Dino\_44 (AK), MeganNoll\_43 (AK), RAP15\_44 (AK), Theresita\_46 (EA7), Zorro\_44 (AK),

Start 8:

- Found in 15 of 118 ( 12.7% ) of genes in pham
- Manual Annotations of this start: 12 of 111
- Called 93.3% of time when present
- Phage (with cluster) where this start called: Benry\_48 (EJ), Cicada\_48 (EJ), FireCastle\_47 (EJ), Goodman\_47 (EJ), Htur\_47 (EJ), Jera\_47 (EJ), Johann\_47 (EJ), Milani\_46 (EJ), PermaG\_48 (EJ), Rasovi\_48 (EJ), SBlackberry\_46 (EJ), Sucha\_46

(EJ), TurboVicky\_47 (EJ), Typher\_48 (EJ),

Start 9:

- Found in 17 of 118 ( 14.4% ) of genes in pham
- Manual Annotations of this start: 9 of 111
- Called 58.8% of time when present
- Phage (with cluster) where this start called: Aledel\_41 (AK), AustinPowers\_42 (AK), Chridison\_40 (AK), Daiboju\_41 (AK), Eunoia\_41 (AK), HunterDalle\_41 (AK), OMalley\_41 (AK), Riovina\_41 (AK), Supakev\_41 (AK), Vulture\_41 (AK),

Start 10:

- Found in 11 of 118 ( 9.3% ) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 9.1% of time when present
- Phage (with cluster) where this start called: Zanella\_46 (EJ),

Start 11:

- Found in 67 of 118 ( 56.8% ) of genes in pham
- Manual Annotations of this start: 55 of 111
- Called 83.6% of time when present
- Phage (with cluster) where this start called: Albanese\_44 (AK), Beethoven\_43 (AK), Bennie\_41 (AK), BigMack\_41 (AK), Bodacious\_41 (AK), BrotherBLo\_43 (AK), CallieOMalley\_43 (AK), Carpal\_43 (AK), ChewChew\_41 (AK), Cholula\_43 (AK), Christian\_41 (AK), CristinaYang\_41 (AK), DrRobert\_40 (AK), DreamTeam\_41 (AK), EstebanJulior\_42 (AK), Fluke\_44 (AK), Gisselle\_41 (AK), Glenn\_44 (AK), GreenHearts\_45 (AK), Greenhouse\_45 (AK), HeadNerd\_41 (AK), Huckleberry\_41 (AK), Huntingdon\_43 (AK), Immaculata\_43 (AK), Joann\_45 (AK), Jumboset\_44 (AK), Kalizoi\_44 (AK), Korra\_43 (AK), Lakshmi\_44 (AK), Lasagna\_40 (AK), Lennox\_41 (AK), LilStuart\_41 (AK), Litotes\_43 (AK), Lucy\_41 (AK), Makoto\_41 (AK), MamaPearl\_42 (AK), Misaeng\_43 (AK), Moki\_41 (AK), MrGloopy\_44 (AK), Nancia\_41 (AK), Nubia\_44 (AK), OurGirlNessie\_40 (AK), Oxyntrius\_44 (AK), PitaDog\_42 (AK), Potatoes\_43 (AK), Pterodactyl\_41 (AK), RcigaStruga\_43 (AK), Riverdale\_44 (AK), Rozby\_43 (AK), Savage2526\_44 (AK), Scuttle\_43 (AK), TattModd\_42 (AK), Urla\_42 (AK), Vallejo\_44 (AK), Wawa\_43 (AK), WonderBoy\_40 (AK),

Start 12:

- Found in 1 of 118 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Galactica\_43 (BQ),

Start 13:

- Found in 3 of 118 ( 2.5% ) of genes in pham
- Manual Annotations of this start: 3 of 111
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Archimedes\_31 (DA), Ghobes\_31 (DA), Sapo\_30 (DA),

Start 15:

- Found in 11 of 118 ( 9.3% ) of genes in pham
- Manual Annotations of this start: 11 of 111
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Araceli\_53 (BH), Bogota\_54 (BH), Crosby\_54 (BH), Henoccus\_54 (BH), Intolerant\_51 (BH), JackieB\_54 (BH), LazerLemon\_54 (BH), Marky\_57 (BH), Microdon\_52 (BH), Stuff\_53 (BH), UNTPL\_55 (BH),

Start 28:

- Found in 4 of 118 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 2 of 111
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Hiyaa\_45 (BQ), Keanu\_44 (BQ), Spocter\_46 (BQ),

### **Summary by clusters:**

There are 6 clusters represented in this pham: EJ, AK, BH, DA, BQ, EA7,

Info for manual annotations of cluster AK:

- Start number 3 was manually annotated 2 times for cluster AK.
- Start number 4 was manually annotated 4 times for cluster AK.
- Start number 6 was manually annotated 6 times for cluster AK.
- Start number 7 was manually annotated 4 times for cluster AK.
- Start number 9 was manually annotated 9 times for cluster AK.
- Start number 11 was manually annotated 55 times for cluster AK.

Info for manual annotations of cluster BH:

- Start number 15 was manually annotated 11 times for cluster BH.

Info for manual annotations of cluster BQ:

- Start number 12 was manually annotated 1 time for cluster BQ.
- Start number 28 was manually annotated 2 times for cluster BQ.

Info for manual annotations of cluster DA:

- Start number 13 was manually annotated 3 times for cluster DA.

Info for manual annotations of cluster EA7:

- Start number 7 was manually annotated 1 time for cluster EA7.

Info for manual annotations of cluster EJ:

- Start number 8 was manually annotated 12 times for cluster EJ.
- Start number 10 was manually annotated 1 time for cluster EJ.

### **Gene Information:**

Gene: Albanese\_44 Start: 29446, Stop: 30498, Start Num: 11

Candidate Starts for Albanese\_44:

(Start: 11 @29446 has 55 MA's), (32, 29572), (43, 29707), (65, 29914), (69, 29953), (72, 29968), (75, 30004), (76, 30007), (77, 30016), (86, 30067), (88, 30091), (96, 30172), (103, 30232), (105, 30259), (111, 30295), (113, 30307), (124, 30457),

Gene: Aledel\_41 Start: 28837, Stop: 29880, Start Num: 9

Candidate Starts for Aledel\_41:

(Start: 9 @28837 has 9 MA's), (43, 29104), (65, 29311), (69, 29350), (75, 29401), (76, 29404), (77, 29413), (86, 29464), (88, 29488), (96, 29569), (111, 29692), (120, 29758),

Gene: AppleCider\_43 Start: 28800, Stop: 29906, Start Num: 4

Candidate Starts for AppleCider\_43:

(Start: 4 @28800 has 4 MA's), (Start: 11 @28857 has 55 MA's), (33, 28998), (43, 29121), (47, 29169), (48, 29172), (60, 29304), (64, 29319), (65, 29328), (72, 29382), (76, 29421), (77, 29430), (88, 29505), (105, 29673), (108, 29691), (113, 29721),

Gene: Araceli\_53 Start: 37442, Stop: 38452, Start Num: 15

Candidate Starts for Araceli\_53:

(Start: 4 @37346 has 4 MA's), (Start: 15 @37442 has 11 MA's), (26, 37538), (37, 37640), (39, 37667), (40, 37673), (58, 37856), (66, 37910), (68, 37934), (74, 37976), (76, 38000), (78, 38012), (86, 38060), (96, 38174), (104, 38264), (106, 38288), (109, 38303), (113, 38330), (116, 38351), (117, 38354), (118, 38372), (119, 38381),

Gene: Archimedes\_31 Start: 29275, Stop: 28235, Start Num: 13

Candidate Starts for Archimedes\_31:

(1, 29710), (2, 29371), (Start: 13 @29275 has 3 MA's), (14, 29266), (23, 29191), (36, 29116), (41, 29041), (46, 28978), (48, 28972), (56, 28864), (57, 28861), (67, 28801), (76, 28741), (84, 28687), (85, 28684), (87, 28672), (96, 28588), (97, 28585), (106, 28501), (107, 28498), (114, 28450), (116, 28438), (120, 28405),

Gene: AustinPowers\_42 Start: 28835, Stop: 29878, Start Num: 9

Candidate Starts for AustinPowers\_42:

(Start: 9 @28835 has 9 MA's), (43, 29102), (65, 29309), (69, 29348), (75, 29399), (76, 29402), (77, 29411), (86, 29462), (88, 29486), (96, 29567), (111, 29690), (120, 29756),

Gene: Beethoven\_43 Start: 28809, Stop: 29852, Start Num: 11

Candidate Starts for Beethoven\_43:

(Start: 11 @28809 has 55 MA's), (27, 28914), (32, 28935), (43, 29070), (60, 29253), (64, 29268), (65, 29277), (76, 29370), (77, 29379), (86, 29430), (88, 29454), (103, 29595), (105, 29622), (108, 29640), (111, 29658), (120, 29724),

Gene: Bennie\_41 Start: 27620, Stop: 28669, Start Num: 11

Candidate Starts for Bennie\_41:

(Start: 11 @27620 has 55 MA's), (21, 27692), (43, 27881), (53, 27986), (64, 28079), (65, 28088), (69, 28127), (76, 28181), (77, 28190), (85, 28238), (88, 28265), (96, 28346), (105, 28433), (107, 28442), (111, 28469),

Gene: Benry\_48 Start: 28836, Stop: 29945, Start Num: 8

Candidate Starts for Benry\_48:

(Start: 8 @28836 has 12 MA's), (17, 28905), (20, 28938), (35, 29037), (45, 29163), (47, 29181), (55, 29259), (65, 29334), (77, 29442), (80, 29463), (86, 29493), (89, 29538), (95, 29592), (96, 29598), (97, 29601), (110, 29712), (112, 29733), (113, 29736),

Gene: BigMack\_41 Start: 27720, Stop: 28763, Start Num: 11

Candidate Starts for BigMack\_41:

(Start: 11 @27720 has 55 MA's), (21, 27792), (27, 27825), (32, 27846), (43, 27981), (64, 28179), (65, 28188), (76, 28281), (77, 28290), (83, 28329), (86, 28341), (88, 28365), (103, 28506), (105, 28533), (108, 28551), (111, 28569), (120, 28635),

Gene: Bodacious\_41 Start: 27678, Stop: 28730, Start Num: 11



Candidate Starts for Bodacious\_41:

(Start: 11 @27678 has 55 MA's), (21, 27750), (43, 27939), (64, 28137), (65, 28146), (76, 28239), (77, 28248), (88, 28323), (105, 28491), (107, 28500), (111, 28527),

Gene: Bogota\_54 Start: 37764, Stop: 38777, Start Num: 15

Candidate Starts for Bogota\_54:

(Start: 15 @37764 has 11 MA's), (18, 37788), (24, 37848), (26, 37863), (37, 37965), (39, 37992), (40, 37998), (51, 38097), (58, 38181), (61, 38202), (66, 38235), (74, 38301), (76, 38325), (79, 38349), (91, 38457), (93, 38481), (95, 38493), (96, 38499), (104, 38589), (113, 38655), (117, 38679), (118, 38697),

Gene: BrotherBLo\_43 Start: 28841, Stop: 29884, Start Num: 11

Candidate Starts for BrotherBLo\_43:

(Start: 11 @28841 has 55 MA's), (21, 28913), (27, 28946), (32, 28967), (43, 29102), (60, 29285), (64, 29300), (65, 29309), (76, 29402), (77, 29411), (86, 29462), (88, 29486), (103, 29627), (105, 29654), (108, 29672), (111, 29690), (120, 29756),

Gene: CallieOMalley\_43 Start: 28857, Stop: 29906, Start Num: 11

Candidate Starts for CallieOMalley\_43:

(Start: 4 @28800 has 4 MA's), (Start: 11 @28857 has 55 MA's), (33, 28998), (43, 29121), (47, 29169), (60, 29304), (64, 29319), (65, 29328), (72, 29382), (76, 29421), (77, 29430), (88, 29505), (105, 29673), (108, 29691), (113, 29721),

Gene: Canowicakte\_43 Start: 28835, Stop: 29941, Start Num: 4

Candidate Starts for Canowicakte\_43:

(Start: 4 @28835 has 4 MA's), (Start: 11 @28892 has 55 MA's), (33, 29033), (43, 29156), (47, 29204), (60, 29339), (64, 29354), (65, 29363), (72, 29417), (76, 29456), (77, 29465), (88, 29540), (105, 29708), (108, 29726), (113, 29756),

Gene: Carpal\_43 Start: 28821, Stop: 29864, Start Num: 11

Candidate Starts for Carpal\_43:

(Start: 11 @28821 has 55 MA's), (21, 28893), (43, 29082), (60, 29265), (64, 29280), (65, 29289), (69, 29328), (76, 29382), (77, 29391), (85, 29439), (88, 29466), (105, 29634), (107, 29643), (111, 29670), (120, 29736),

Gene: ChewChew\_41 Start: 27809, Stop: 28861, Start Num: 11

Candidate Starts for ChewChew\_41:

(Start: 11 @27809 has 55 MA's), (21, 27881), (43, 28070), (64, 28268), (65, 28277), (76, 28370), (77, 28379), (88, 28454), (105, 28622), (107, 28631), (111, 28658),

Gene: Cholula\_43 Start: 28867, Stop: 29910, Start Num: 11

Candidate Starts for Cholula\_43:

(Start: 11 @28867 has 55 MA's), (21, 28939), (43, 29128), (60, 29311), (64, 29326), (65, 29335), (69, 29374), (76, 29428), (77, 29437), (85, 29485), (88, 29512), (105, 29680), (107, 29689), (108, 29698), (111, 29716), (120, 29782),

Gene: Chridison\_40 Start: 28767, Stop: 29810, Start Num: 9

Candidate Starts for Chridison\_40:

(Start: 9 @28767 has 9 MA's), (16, 28812), (29, 28887), (43, 29034), (47, 29082), (65, 29241), (76, 29334), (77, 29343), (86, 29394), (88, 29418), (96, 29499), (105, 29586), (107, 29595), (108, 29604), (111, 29622), (120, 29688),

Gene: Christian\_41 Start: 27666, Stop: 28718, Start Num: 11

Candidate Starts for Christian\_41:

(Start: 11 @27666 has 55 MA's), (21, 27738), (43, 27927), (64, 28125), (65, 28134), (76, 28227), (77, 28236), (88, 28311), (105, 28479), (107, 28488), (108, 28497), (111, 28515), (113, 28527),

Gene: Cicada\_48 Start: 30146, Stop: 31207, Start Num: 8

Candidate Starts for Cicada\_48:

(Start: 8 @30146 has 12 MA's), (Start: 10 @30155 has 1 MA's), (17, 30215), (39, 30374), (47, 30449), (54, 30512), (55, 30527), (56, 30554), (65, 30602), (77, 30710), (80, 30731), (89, 30806), (95, 30860), (96, 30866), (97, 30869), (108, 30974), (118, 31046),

Gene: CristinaYang\_41 Start: 27805, Stop: 28854, Start Num: 11

Candidate Starts for CristinaYang\_41:

(Start: 11 @27805 has 55 MA's), (21, 27877), (43, 28066), (64, 28264), (65, 28273), (76, 28366), (77, 28375), (88, 28450), (105, 28618), (107, 28627), (111, 28654),

Gene: Crosby\_54 Start: 37524, Stop: 38537, Start Num: 15

Candidate Starts for Crosby\_54:

(Start: 15 @37524 has 11 MA's), (23, 37605), (26, 37623), (37, 37725), (39, 37752), (40, 37758), (51, 37857), (58, 37941), (61, 37962), (66, 37995), (74, 38061), (76, 38085), (79, 38109), (91, 38217), (93, 38241), (95, 38253), (96, 38259), (99, 38292), (104, 38349), (113, 38415), (117, 38439), (118, 38457),

Gene: Daiboju\_41 Start: 28848, Stop: 29891, Start Num: 9

Candidate Starts for Daiboju\_41:

(Start: 6 @28815 has 6 MA's), (Start: 9 @28848 has 9 MA's), (21, 28929), (38, 29067), (43, 29115), (47, 29163), (60, 29298), (65, 29322), (76, 29415), (77, 29424), (86, 29475), (88, 29499), (96, 29580), (105, 29667), (107, 29676), (111, 29703), (120, 29769),

Gene: Dino\_44 Start: 28953, Stop: 30011, Start Num: 7

Candidate Starts for Dino\_44:

(Start: 7 @28953 has 5 MA's), (Start: 11 @28968 has 55 MA's), (21, 29040), (43, 29229), (64, 29427), (65, 29436), (69, 29475), (76, 29529), (77, 29538), (85, 29586), (88, 29613), (105, 29781), (107, 29790), (111, 29817), (120, 29883),

Gene: DrRobert\_40 Start: 27446, Stop: 28498, Start Num: 11

Candidate Starts for DrRobert\_40:

(Start: 11 @27446 has 55 MA's), (21, 27518), (43, 27707), (64, 27905), (65, 27914), (76, 28007), (77, 28016), (85, 28064), (88, 28091), (105, 28259), (107, 28268), (108, 28277), (111, 28295), (113, 28307),

Gene: DreamTeam\_41 Start: 27775, Stop: 28827, Start Num: 11

Candidate Starts for DreamTeam\_41:

(Start: 3 @27712 has 2 MA's), (Start: 11 @27775 has 55 MA's), (21, 27847), (32, 27901), (43, 28036), (54, 28153), (65, 28243), (76, 28336), (77, 28345), (83, 28384), (86, 28396), (88, 28420), (103, 28561), (105, 28588), (108, 28606), (111, 28624), (120, 28690),

Gene: EstebanJulior\_42 Start: 28824, Stop: 29876, Start Num: 11

Candidate Starts for EstebanJulior\_42:

(Start: 11 @28824 has 55 MA's), (21, 28896), (64, 29283), (65, 29292), (76, 29385), (77, 29394), (85, 29442), (88, 29469), (96, 29550), (105, 29637), (107, 29646), (111, 29673),

Gene: Eunoia\_41 Start: 28837, Stop: 29880, Start Num: 9

Candidate Starts for Eunoia\_41:

(Start: 9 @28837 has 9 MA's), (43, 29104), (65, 29311), (69, 29350), (75, 29401), (76, 29404), (77, 29413), (86, 29464), (88, 29488), (96, 29569), (111, 29692), (120, 29758),

Gene: FireCastle\_47 Start: 29953, Stop: 31011, Start Num: 8

Candidate Starts for FireCastle\_47:

(Start: 8 @29953 has 12 MA's), (Start: 10 @29962 has 1 MA's), (17, 30022), (31, 30079), (48, 30259), (52, 30298), (54, 30319), (55, 30334), (77, 30517), (80, 30538), (81, 30541), (83, 30556), (84, 30562), (88, 30592), (89, 30613), (95, 30667), (96, 30673), (97, 30676), (112, 30808), (113, 30811), (118, 30853), (125, 30976),

Gene: Fluke\_44 Start: 29084, Stop: 30127, Start Num: 11

Candidate Starts for Fluke\_44:

(Start: 11 @29084 has 55 MA's), (21, 29156), (27, 29189), (32, 29210), (43, 29345), (60, 29528), (64, 29543), (65, 29552), (76, 29645), (77, 29654), (86, 29705), (88, 29729), (103, 29870), (105, 29897), (108, 29915), (111, 29933), (120, 29999),

Gene: Galactica\_43 Start: 30869, Stop: 31960, Start Num: 12

Candidate Starts for Galactica\_43:

(Start: 12 @30869 has 1 MA's), (22, 30983), (24, 30989), (Start: 28 @31013 has 2 MA's), (30, 31022), (37, 31109), (44, 31172), (56, 31355), (59, 31370), (70, 31454), (76, 31505), (77, 31514), (88, 31589), (90, 31616), (94, 31661), (96, 31676), (97, 31679), (123, 31949),

Gene: Ghobes\_31 Start: 29118, Stop: 28120, Start Num: 13

Candidate Starts for Ghobes\_31:

(Start: 13 @29118 has 3 MA's), (41, 28893), (42, 28887), (57, 28719), (62, 28689), (72, 28638), (74, 28623), (75, 28602), (76, 28599), (84, 28545), (85, 28542), (92, 28476), (114, 28308), (115, 28299),

Gene: Gisselle\_41 Start: 27775, Stop: 28827, Start Num: 11

Candidate Starts for Gisselle\_41:

(Start: 3 @27712 has 2 MA's), (Start: 11 @27775 has 55 MA's), (21, 27847), (32, 27901), (43, 28036), (54, 28153), (65, 28243), (76, 28336), (77, 28345), (83, 28384), (86, 28396), (88, 28420), (103, 28561), (105, 28588), (108, 28606), (111, 28624), (120, 28690),

Gene: Glenn\_44 Start: 29075, Stop: 30118, Start Num: 11

Candidate Starts for Glenn\_44:

(Start: 11 @29075 has 55 MA's), (21, 29147), (27, 29180), (32, 29201), (43, 29336), (64, 29534), (65, 29543), (76, 29636), (77, 29645), (83, 29684), (86, 29696), (88, 29720), (101, 29852), (103, 29861), (105, 29888), (108, 29906), (111, 29924), (120, 29990),

Gene: Goodman\_47 Start: 29916, Stop: 30977, Start Num: 8

Candidate Starts for Goodman\_47:

(Start: 8 @29916 has 12 MA's), (Start: 10 @29925 has 1 MA's), (17, 29985), (47, 30219), (54, 30282), (55, 30297), (56, 30324), (65, 30372), (77, 30480), (80, 30501), (87, 30540), (89, 30576), (95, 30630), (96, 30636), (97, 30639), (108, 30744), (118, 30816),

Gene: GreenHearts\_45 Start: 29737, Stop: 30792, Start Num: 11

Candidate Starts for GreenHearts\_45:

(Start: 11 @29737 has 55 MA's), (32, 29863), (43, 29998), (65, 30205), (69, 30244), (72, 30259), (75, 30295), (76, 30298), (77, 30307), (86, 30358), (88, 30382), (105, 30550), (107, 30559), (111, 30586), (113, 30598),

Gene: Greenhouse\_45 Start: 29457, Stop: 30509, Start Num: 11

Candidate Starts for Greenhouse\_45:

(Start: 11 @29457 has 55 MA's), (32, 29583), (43, 29718), (65, 29925), (69, 29964), (72, 29979), (75, 30015), (76, 30018), (77, 30027), (82, 30060), (86, 30078), (88, 30102), (103, 30243), (105, 30270),

(111, 30306), (113, 30318), (124, 30468),

Gene: HeadNerd\_41 Start: 27619, Stop: 28668, Start Num: 11

Candidate Starts for HeadNerd\_41:

(Start: 11 @27619 has 55 MA's), (21, 27691), (43, 27880), (64, 28078), (65, 28087), (69, 28126), (76, 28180), (77, 28189), (85, 28237), (88, 28264), (105, 28432), (107, 28441), (111, 28468),

Gene: Henoccus\_54 Start: 37465, Stop: 38475, Start Num: 15

Candidate Starts for Henoccus\_54:

(Start: 4 @37369 has 4 MA's), (Start: 15 @37465 has 11 MA's), (26, 37561), (37, 37663), (39, 37690), (40, 37696), (58, 37879), (66, 37933), (68, 37957), (74, 37999), (76, 38023), (78, 38035), (86, 38083), (95, 38191), (96, 38197), (104, 38287), (106, 38311), (109, 38326), (113, 38353), (116, 38374), (117, 38377), (118, 38395), (119, 38404),

Gene: Herb\_41 Start: 28814, Stop: 29890, Start Num: 6

Candidate Starts for Herb\_41:

(Start: 6 @28814 has 6 MA's), (Start: 9 @28847 has 9 MA's), (21, 28928), (38, 29066), (43, 29114), (47, 29162), (60, 29297), (65, 29321), (76, 29414), (77, 29423), (86, 29474), (88, 29498), (96, 29579), (105, 29666), (107, 29675), (111, 29702), (120, 29768),

Gene: Hiyaa\_45 Start: 32492, Stop: 33436, Start Num: 28

Candidate Starts for Hiyaa\_45:

(22, 32462), (Start: 28 @32492 has 2 MA's), (30, 32501), (35, 32537), (37, 32588), (44, 32648), (49, 32693), (57, 32834), (59, 32846), (70, 32930), (71, 32933), (76, 32981), (77, 32990), (90, 33092), (94, 33137), (96, 33152), (97, 33155), (102, 33221), (113, 33302), (122, 33395),

Gene: Htur\_47 Start: 30379, Stop: 31446, Start Num: 8

Candidate Starts for Htur\_47:

(Start: 7 @30373 has 5 MA's), (Start: 8 @30379 has 12 MA's), (Start: 10 @30388 has 1 MA's), (17, 30448), (47, 30688), (48, 30691), (54, 30751), (55, 30766), (56, 30793), (59, 30808), (65, 30841), (77, 30949), (79, 30964), (80, 30970), (86, 31000), (89, 31045), (95, 31099), (96, 31105), (97, 31108), (112, 31240), (113, 31243), (118, 31285),

Gene: Huckleberry\_41 Start: 27602, Stop: 28651, Start Num: 11

Candidate Starts for Huckleberry\_41:

(Start: 11 @27602 has 55 MA's), (21, 27674), (43, 27863), (53, 27968), (64, 28061), (65, 28070), (69, 28109), (76, 28163), (77, 28172), (85, 28220), (88, 28247), (96, 28328), (105, 28415), (107, 28424), (111, 28451),

Gene: HunterDalle\_41 Start: 28766, Stop: 29809, Start Num: 9

Candidate Starts for HunterDalle\_41:

(Start: 9 @28766 has 9 MA's), (16, 28811), (29, 28886), (43, 29033), (47, 29081), (65, 29240), (76, 29333), (77, 29342), (86, 29393), (88, 29417), (96, 29498), (105, 29585), (107, 29594), (108, 29603), (111, 29621), (120, 29687),

Gene: Huntingdon\_43 Start: 29269, Stop: 30324, Start Num: 11

Candidate Starts for Huntingdon\_43:

(Start: 11 @29269 has 55 MA's), (32, 29395), (43, 29530), (47, 29578), (63, 29725), (65, 29737), (72, 29791), (76, 29830), (77, 29839), (86, 29890), (88, 29914), (89, 29935), (103, 30055), (105, 30082), (108, 30100), (111, 30118), (113, 30130), (121, 30199),

Gene: Immaculata\_43 Start: 28867, Stop: 29910, Start Num: 11

Candidate Starts for Immaculata\_43:

(Start: 11 @28867 has 55 MA's), (21, 28939), (43, 29128), (60, 29311), (64, 29326), (65, 29335), (69, 29374), (76, 29428), (77, 29437), (85, 29485), (88, 29512), (105, 29680), (107, 29689), (111, 29716), (120, 29782),

Gene: Intolerant\_51 Start: 37465, Stop: 38478, Start Num: 15

Candidate Starts for Intolerant\_51:

(Start: 15 @37465 has 11 MA's), (18, 37489), (24, 37549), (26, 37564), (37, 37666), (39, 37693), (40, 37699), (51, 37798), (58, 37882), (61, 37903), (66, 37936), (74, 38002), (76, 38026), (79, 38050), (91, 38158), (93, 38182), (95, 38194), (96, 38200), (104, 38290), (113, 38356), (117, 38380), (118, 38398),

Gene: JackieB\_54 Start: 37297, Stop: 38307, Start Num: 15

Candidate Starts for JackieB\_54:

(5, 37207), (Start: 15 @37297 has 11 MA's), (26, 37393), (37, 37495), (39, 37522), (40, 37528), (58, 37711), (66, 37765), (68, 37789), (74, 37831), (76, 37855), (78, 37867), (86, 37915), (95, 38023), (96, 38029), (104, 38119), (106, 38143), (109, 38158), (113, 38185), (116, 38206), (117, 38209), (118, 38227), (119, 38236),

Gene: Jera\_47 Start: 28716, Stop: 29780, Start Num: 8

Candidate Starts for Jera\_47:

(Start: 8 @28716 has 12 MA's), (Start: 10 @28725 has 1 MA's), (17, 28785), (45, 29001), (48, 29022), (54, 29082), (55, 29097), (65, 29172), (77, 29280), (80, 29301), (84, 29325), (89, 29376), (95, 29430), (96, 29436), (97, 29439), (108, 29544), (110, 29550), (118, 29616),

Gene: Joann\_45 Start: 29532, Stop: 30584, Start Num: 11

Candidate Starts for Joann\_45:

(Start: 11 @29532 has 55 MA's), (32, 29658), (43, 29793), (47, 29841), (65, 30000), (69, 30039), (72, 30054), (75, 30090), (76, 30093), (77, 30102), (86, 30153), (88, 30177), (103, 30318), (105, 30345), (111, 30381), (113, 30393), (124, 30543),

Gene: Johann\_47 Start: 29916, Stop: 30977, Start Num: 8

Candidate Starts for Johann\_47:

(Start: 8 @29916 has 12 MA's), (Start: 10 @29925 has 1 MA's), (17, 29985), (47, 30219), (54, 30282), (55, 30297), (56, 30324), (65, 30372), (77, 30480), (80, 30501), (87, 30540), (89, 30576), (95, 30630), (96, 30636), (97, 30639), (108, 30744), (118, 30816),

Gene: Jumboset\_44 Start: 28983, Stop: 30026, Start Num: 11

Candidate Starts for Jumboset\_44:

(Start: 11 @28983 has 55 MA's), (21, 29055), (27, 29088), (32, 29109), (43, 29244), (64, 29442), (65, 29451), (76, 29544), (77, 29553), (83, 29592), (86, 29604), (88, 29628), (101, 29760), (103, 29769), (105, 29796), (108, 29814), (111, 29832), (120, 29898),

Gene: Kalizoi\_44 Start: 28808, Stop: 29851, Start Num: 11

Candidate Starts for Kalizoi\_44:

(Start: 11 @28808 has 55 MA's), (21, 28880), (27, 28913), (32, 28934), (43, 29069), (64, 29267), (65, 29276), (76, 29369), (77, 29378), (86, 29429), (88, 29453), (103, 29594), (105, 29621), (108, 29639), (111, 29657), (120, 29723),

Gene: Keanu\_44 Start: 32166, Stop: 33110, Start Num: 28

Candidate Starts for Keanu\_44:

(25, 32145), (Start: 28 @32166 has 2 MA's), (37, 32262), (44, 32322), (59, 32520), (70, 32604), (71, 32607), (76, 32655), (77, 32664), (90, 32766), (94, 32811), (96, 32826), (97, 32829), (113, 32976), (122, 33069), (123, 33099),

Gene: KingBob\_41 Start: 28815, Stop: 29891, Start Num: 6

Candidate Starts for KingBob\_41:

(Start: 6 @28815 has 6 MA's), (Start: 9 @28848 has 9 MA's), (21, 28929), (38, 29067), (43, 29115), (47, 29163), (60, 29298), (65, 29322), (76, 29415), (77, 29424), (86, 29475), (88, 29499), (96, 29580), (105, 29667), (107, 29676), (111, 29703), (120, 29769),

Gene: Kittykat\_43 Start: 28006, Stop: 29121, Start Num: 3

Candidate Starts for Kittykat\_43:

(Start: 3 @28006 has 2 MA's), (Start: 11 @28069 has 55 MA's), (21, 28141), (32, 28195), (43, 28330), (65, 28537), (76, 28630), (77, 28639), (83, 28678), (86, 28690), (88, 28714), (92, 28765), (103, 28855), (105, 28882), (108, 28900), (111, 28918), (120, 28984),

Gene: Korra\_43 Start: 28820, Stop: 29863, Start Num: 11

Candidate Starts for Korra\_43:

(Start: 11 @28820 has 55 MA's), (21, 28892), (43, 29081), (64, 29279), (65, 29288), (69, 29327), (76, 29381), (77, 29390), (85, 29438), (88, 29465), (105, 29633), (107, 29642), (111, 29669), (120, 29735),

Gene: Lakshmi\_44 Start: 29420, Stop: 30472, Start Num: 11

Candidate Starts for Lakshmi\_44:

(Start: 11 @29420 has 55 MA's), (32, 29546), (43, 29681), (65, 29888), (69, 29927), (72, 29942), (75, 29978), (76, 29981), (77, 29990), (86, 30041), (88, 30065), (103, 30206), (105, 30233), (111, 30269), (113, 30281), (124, 30431),

Gene: Lasagna\_40 Start: 27444, Stop: 28496, Start Num: 11

Candidate Starts for Lasagna\_40:

(Start: 11 @27444 has 55 MA's), (21, 27516), (43, 27705), (64, 27903), (65, 27912), (76, 28005), (77, 28014), (88, 28089), (105, 28257), (107, 28266), (111, 28293), (113, 28305),

Gene: LazerLemon\_54 Start: 37996, Stop: 39006, Start Num: 15

Candidate Starts for LazerLemon\_54:

(Start: 15 @37996 has 11 MA's), (24, 38077), (34, 38137), (37, 38194), (39, 38221), (50, 38323), (58, 38410), (66, 38464), (76, 38554), (78, 38566), (86, 38614), (95, 38722), (96, 38728), (104, 38818), (106, 38842), (109, 38857), (113, 38884), (117, 38908), (118, 38926), (119, 38935),

Gene: Lennox\_41 Start: 27652, Stop: 28704, Start Num: 11

Candidate Starts for Lennox\_41:

(Start: 11 @27652 has 55 MA's), (21, 27724), (43, 27913), (64, 28111), (65, 28120), (76, 28213), (77, 28222), (85, 28270), (88, 28297), (105, 28465), (107, 28474), (108, 28483), (111, 28501), (113, 28513),

Gene: LilStuart\_41 Start: 27793, Stop: 28845, Start Num: 11

Candidate Starts for LilStuart\_41:

(Start: 11 @27793 has 55 MA's), (21, 27865), (43, 28054), (64, 28252), (65, 28261), (76, 28354), (77, 28363), (88, 28438), (105, 28606), (107, 28615), (111, 28642), (113, 28654),

Gene: Litotes\_43 Start: 28845, Stop: 29894, Start Num: 11

Candidate Starts for Litotes\_43:

(Start: 4 @28788 has 4 MA's), (Start: 11 @28845 has 55 MA's), (33, 28986), (43, 29109), (47, 29157), (60, 29292), (64, 29307), (65, 29316), (69, 29355), (72, 29370), (76, 29409), (77, 29418), (88, 29493), (105, 29661), (108, 29679), (113, 29709),

Gene: Lucy\_41 Start: 27790, Stop: 28842, Start Num: 11

Candidate Starts for Lucy\_41:

(Start: 11 @27790 has 55 MA's), (21, 27862), (43, 28051), (64, 28249), (65, 28258), (76, 28351), (77, 28360), (85, 28408), (88, 28435), (105, 28603), (107, 28612), (108, 28621), (111, 28639), (113, 28651),

Gene: Makoto\_41 Start: 27663, Stop: 28715, Start Num: 11

Candidate Starts for Makoto\_41:

(Start: 11 @27663 has 55 MA's), (21, 27735), (43, 27924), (64, 28122), (65, 28131), (76, 28224), (77, 28233), (85, 28281), (88, 28308), (105, 28476), (107, 28485), (108, 28494), (111, 28512), (113, 28524),

Gene: MamaPearl\_42 Start: 28824, Stop: 29876, Start Num: 11

Candidate Starts for MamaPearl\_42:

(Start: 11 @28824 has 55 MA's), (21, 28896), (64, 29283), (65, 29292), (76, 29385), (77, 29394), (85, 29442), (88, 29469), (96, 29550), (105, 29637), (107, 29646), (111, 29673),

Gene: Maria1952\_40 Start: 28814, Stop: 29890, Start Num: 6

Candidate Starts for Maria1952\_40:

(Start: 6 @28814 has 6 MA's), (Start: 9 @28847 has 9 MA's), (21, 28928), (38, 29066), (43, 29114), (47, 29162), (60, 29297), (65, 29321), (76, 29414), (77, 29423), (86, 29474), (88, 29498), (96, 29579), (105, 29666), (107, 29675), (111, 29702), (120, 29768),

Gene: Marky\_57 Start: 38456, Stop: 39469, Start Num: 15

Candidate Starts for Marky\_57:

(Start: 15 @38456 has 11 MA's), (26, 38558), (37, 38660), (39, 38687), (40, 38693), (50, 38789), (56, 38870), (58, 38876), (66, 38930), (74, 38996), (76, 39020), (78, 39032), (86, 39080), (95, 39188), (96, 39194), (100, 39236), (104, 39284), (109, 39323), (113, 39350), (116, 39371), (117, 39374), (118, 39392), (119, 39401),

Gene: MeganNoll\_43 Start: 29025, Stop: 30083, Start Num: 7

Candidate Starts for MeganNoll\_43:

(Start: 7 @29025 has 5 MA's), (Start: 11 @29040 has 55 MA's), (21, 29112), (43, 29301), (64, 29499), (65, 29508), (69, 29547), (76, 29601), (77, 29610), (85, 29658), (88, 29685), (105, 29853), (107, 29862), (111, 29889), (120, 29955),

Gene: Microdon\_52 Start: 37262, Stop: 38275, Start Num: 15

Candidate Starts for Microdon\_52:

(Start: 15 @37262 has 11 MA's), (23, 37343), (26, 37361), (37, 37463), (39, 37490), (51, 37595), (58, 37679), (61, 37700), (66, 37733), (74, 37799), (76, 37823), (79, 37847), (91, 37955), (93, 37979), (95, 37991), (96, 37997), (104, 38087), (107, 38114), (113, 38153), (117, 38177), (118, 38195),

Gene: Milani\_46 Start: 29258, Stop: 30367, Start Num: 8

Candidate Starts for Milani\_46:

(Start: 8 @29258 has 12 MA's), (17, 29327), (20, 29360), (45, 29585), (47, 29603), (55, 29681), (65, 29756), (77, 29864), (80, 29885), (83, 29903), (86, 29915), (89, 29960), (95, 30014), (96, 30020), (97, 30023), (108, 30128), (110, 30134), (112, 30155), (113, 30158),

Gene: Misaeng\_43 Start: 29393, Stop: 30448, Start Num: 11

Candidate Starts for Misaeng\_43:

(Start: 11 @29393 has 55 MA's), (32, 29519), (43, 29654), (47, 29702), (63, 29849), (65, 29861), (72, 29915), (76, 29954), (77, 29963), (86, 30014), (88, 30038), (89, 30059), (103, 30179), (105, 30206), (108, 30224), (111, 30242), (113, 30254), (121, 30323),

Gene: Moki\_41 Start: 27765, Stop: 28814, Start Num: 11

Candidate Starts for Moki\_41:

(Start: 11 @27765 has 55 MA's), (21, 27837), (43, 28026), (53, 28131), (64, 28224), (65, 28233), (69, 28272), (76, 28326), (77, 28335), (88, 28410), (105, 28578), (107, 28587), (111, 28614),

Gene: MrGloopy\_44 Start: 28969, Stop: 30012, Start Num: 11

Candidate Starts for MrGloopy\_44:

(Start: 11 @28969 has 55 MA's), (21, 29041), (27, 29074), (32, 29095), (43, 29230), (64, 29428), (65, 29437), (76, 29530), (77, 29539), (83, 29578), (86, 29590), (88, 29614), (101, 29746), (103, 29755), (105, 29782), (108, 29800), (111, 29818), (120, 29884),

Gene: Nancia\_41 Start: 27678, Stop: 28727, Start Num: 11

Candidate Starts for Nancia\_41:

(Start: 11 @27678 has 55 MA's), (21, 27750), (43, 27939), (64, 28137), (65, 28146), (76, 28239), (77, 28248), (88, 28323), (105, 28491), (107, 28500), (111, 28527),

Gene: Nubia\_44 Start: 29365, Stop: 30417, Start Num: 11

Candidate Starts for Nubia\_44:

(Start: 11 @29365 has 55 MA's), (32, 29491), (43, 29626), (65, 29833), (69, 29872), (72, 29887), (75, 29923), (76, 29926), (77, 29935), (86, 29986), (88, 30010), (96, 30091), (103, 30151), (105, 30178), (111, 30214), (113, 30226), (124, 30376),

Gene: OMalley\_41 Start: 28837, Stop: 29880, Start Num: 9

Candidate Starts for OMalley\_41:

(Start: 9 @28837 has 9 MA's), (43, 29104), (65, 29311), (69, 29350), (75, 29401), (76, 29404), (77, 29413), (86, 29464), (88, 29488), (96, 29569), (111, 29692), (120, 29758),

Gene: OurGirlNessie\_40 Start: 27407, Stop: 28459, Start Num: 11

Candidate Starts for OurGirlNessie\_40:

(Start: 11 @27407 has 55 MA's), (21, 27479), (43, 27668), (64, 27866), (65, 27875), (76, 27968), (77, 27977), (85, 28025), (88, 28052), (105, 28220), (107, 28229), (108, 28238), (111, 28256), (113, 28268),

Gene: Oxynfrius\_44 Start: 29386, Stop: 30438, Start Num: 11

Candidate Starts for Oxynfrius\_44:

(Start: 11 @29386 has 55 MA's), (32, 29512), (43, 29647), (65, 29854), (69, 29893), (72, 29908), (75, 29944), (76, 29947), (77, 29956), (82, 29989), (86, 30007), (88, 30031), (103, 30172), (105, 30199), (111, 30235), (113, 30247), (124, 30397),

Gene: PartyCup\_46 Start: 29014, Stop: 30120, Start Num: 4

Candidate Starts for PartyCup\_46:

(Start: 4 @29014 has 4 MA's), (Start: 11 @29071 has 55 MA's), (33, 29212), (43, 29335), (47, 29383), (60, 29518), (64, 29533), (65, 29542), (69, 29581), (72, 29596), (76, 29635), (77, 29644), (79, 29659), (88, 29719), (96, 29800), (105, 29887), (108, 29905), (113, 29935),

Gene: PermaG\_48 Start: 30045, Stop: 31100, Start Num: 8

Candidate Starts for PermaG\_48:

(Start: 8 @30045 has 12 MA's), (17, 30114), (45, 30327), (47, 30345), (54, 30408), (55, 30423), (65, 30498), (77, 30606), (80, 30627), (89, 30702), (92, 30732), (95, 30756), (96, 30762), (97, 30765), (108, 30870), (118, 30942),

Gene: PinkFriday\_41 Start: 27918, Stop: 29000, Start Num: 6

Candidate Starts for PinkFriday\_41:



(Start: 6 @27918 has 6 MA's), (Start: 9 @27951 has 9 MA's), (38, 28176), (43, 28224), (47, 28272), (65, 28431), (76, 28524), (77, 28533), (86, 28584), (88, 28608), (94, 28674), (96, 28689), (105, 28776), (107, 28785), (108, 28794), (111, 28812), (120, 28878),

Gene: PitaDog\_42 Start: 27803, Stop: 28855, Start Num: 11

Candidate Starts for PitaDog\_42:

(Start: 11 @27803 has 55 MA's), (21, 27875), (43, 28064), (48, 28115), (64, 28262), (65, 28271), (76, 28364), (77, 28373), (85, 28421), (88, 28448), (105, 28616), (107, 28625), (108, 28634), (111, 28652), (113, 28664),

Gene: Potatoes\_43 Start: 28867, Stop: 29910, Start Num: 11

Candidate Starts for Potatoes\_43:

(Start: 11 @28867 has 55 MA's), (21, 28939), (43, 29128), (60, 29311), (64, 29326), (65, 29335), (69, 29374), (76, 29428), (77, 29437), (85, 29485), (88, 29512), (105, 29680), (107, 29689), (108, 29698), (111, 29716), (120, 29782),

Gene: Preamble\_42 Start: 27872, Stop: 28987, Start Num: 3

Candidate Starts for Preamble\_42:

(Start: 3 @27872 has 2 MA's), (Start: 11 @27935 has 55 MA's), (21, 28007), (32, 28061), (43, 28196), (65, 28403), (76, 28496), (77, 28505), (83, 28544), (86, 28556), (88, 28580), (103, 28721), (105, 28748), (108, 28766), (111, 28784), (120, 28850),

Gene: Pterodactyl\_41 Start: 27644, Stop: 28696, Start Num: 11

Candidate Starts for Pterodactyl\_41:

(Start: 11 @27644 has 55 MA's), (21, 27716), (43, 27905), (64, 28103), (65, 28112), (76, 28205), (77, 28214), (85, 28262), (88, 28289), (105, 28457), (107, 28466), (108, 28475), (111, 28493), (113, 28505),

Gene: Pumancara\_41 Start: 27830, Stop: 28912, Start Num: 6

Candidate Starts for Pumancara\_41:

(Start: 6 @27830 has 6 MA's), (Start: 9 @27863 has 9 MA's), (38, 28088), (43, 28136), (47, 28184), (65, 28343), (76, 28436), (77, 28445), (86, 28496), (88, 28520), (94, 28586), (96, 28601), (105, 28688), (107, 28697), (108, 28706), (111, 28724), (120, 28790),

Gene: RAP15\_44 Start: 29025, Stop: 30083, Start Num: 7

Candidate Starts for RAP15\_44:

(Start: 7 @29025 has 5 MA's), (Start: 11 @29040 has 55 MA's), (21, 29112), (43, 29301), (64, 29499), (65, 29508), (69, 29547), (76, 29601), (77, 29610), (85, 29658), (88, 29685), (105, 29853), (107, 29862), (111, 29889), (120, 29955),

Gene: Rasovi\_48 Start: 30379, Stop: 31446, Start Num: 8

Candidate Starts for Rasovi\_48:

(Start: 7 @30373 has 5 MA's), (Start: 8 @30379 has 12 MA's), (Start: 10 @30388 has 1 MA's), (17, 30448), (47, 30688), (48, 30691), (54, 30751), (55, 30766), (56, 30793), (59, 30808), (65, 30841), (77, 30949), (79, 30964), (80, 30970), (86, 31000), (89, 31045), (95, 31099), (96, 31105), (97, 31108), (112, 31240), (113, 31243), (118, 31285),

Gene: RcigaStruga\_43 Start: 29269, Stop: 30324, Start Num: 11

Candidate Starts for RcigaStruga\_43:

(Start: 11 @29269 has 55 MA's), (32, 29395), (43, 29530), (47, 29578), (63, 29725), (65, 29737), (72, 29791), (76, 29830), (77, 29839), (86, 29890), (88, 29914), (89, 29935), (103, 30055), (105, 30082), (108, 30100), (111, 30118), (113, 30130), (121, 30199),

Gene: Riovina\_41 Start: 28837, Stop: 29880, Start Num: 9

Candidate Starts for Riovina\_41:

(Start: 9 @28837 has 9 MA's), (43, 29104), (65, 29311), (69, 29350), (75, 29401), (76, 29404), (77, 29413), (86, 29464), (88, 29488), (96, 29569), (111, 29692), (120, 29758),

Gene: Riverdale\_44 Start: 29005, Stop: 30048, Start Num: 11

Candidate Starts for Riverdale\_44:

(Start: 11 @29005 has 55 MA's), (21, 29077), (43, 29266), (60, 29449), (64, 29464), (65, 29473), (69, 29512), (76, 29566), (77, 29575), (85, 29623), (88, 29650), (105, 29818), (107, 29827), (111, 29854), (120, 29920),

Gene: Rozby\_43 Start: 28797, Stop: 29840, Start Num: 11

Candidate Starts for Rozby\_43:

(Start: 11 @28797 has 55 MA's), (21, 28869), (27, 28902), (32, 28923), (43, 29058), (60, 29241), (64, 29256), (65, 29265), (76, 29358), (77, 29367), (86, 29418), (88, 29442), (103, 29583), (105, 29610), (108, 29628), (111, 29646), (120, 29712),

Gene: SBlackberry\_46 Start: 29789, Stop: 30850, Start Num: 8

Candidate Starts for SBlackberry\_46:

(Start: 8 @29789 has 12 MA's), (Start: 10 @29798 has 1 MA's), (17, 29858), (39, 30017), (47, 30092), (54, 30155), (55, 30170), (56, 30197), (65, 30245), (77, 30353), (80, 30374), (89, 30449), (95, 30503), (96, 30509), (97, 30512), (108, 30617), (118, 30689),

Gene: Sapo\_30 Start: 29120, Stop: 28092, Start Num: 13

Candidate Starts for Sapo\_30:

(Start: 13 @29120 has 3 MA's), (41, 28919), (43, 28901), (57, 28745), (60, 28724), (67, 28685), (76, 28625), (85, 28568), (87, 28556),

Gene: Savage2526\_44 Start: 29034, Stop: 30077, Start Num: 11

Candidate Starts for Savage2526\_44:

(Start: 11 @29034 has 55 MA's), (21, 29106), (27, 29139), (32, 29160), (43, 29295), (64, 29493), (65, 29502), (76, 29595), (77, 29604), (83, 29643), (86, 29655), (88, 29679), (101, 29811), (103, 29820), (105, 29847), (108, 29865), (111, 29883), (120, 29949),

Gene: Scuttle\_43 Start: 28994, Stop: 30037, Start Num: 11

Candidate Starts for Scuttle\_43:

(Start: 11 @28994 has 55 MA's), (21, 29066), (27, 29099), (32, 29120), (43, 29255), (64, 29453), (65, 29462), (76, 29555), (77, 29564), (86, 29615), (88, 29639), (103, 29780), (105, 29807), (108, 29825), (111, 29843), (120, 29909),

Gene: Sergei\_41 Start: 28815, Stop: 29891, Start Num: 6

Candidate Starts for Sergei\_41:

(Start: 6 @28815 has 6 MA's), (Start: 9 @28848 has 9 MA's), (21, 28929), (38, 29067), (43, 29115), (47, 29163), (60, 29298), (65, 29322), (76, 29415), (77, 29424), (86, 29475), (88, 29499), (96, 29580), (105, 29667), (107, 29676), (111, 29703), (120, 29769),

Gene: Spocter\_46 Start: 32522, Stop: 33466, Start Num: 28

Candidate Starts for Spocter\_46:

(22, 32492), (Start: 28 @32522 has 2 MA's), (30, 32531), (35, 32567), (37, 32618), (44, 32678), (49, 32723), (57, 32864), (59, 32876), (70, 32960), (71, 32963), (76, 33011), (77, 33020), (90, 33122), (94, 33167), (96, 33182), (97, 33185), (102, 33251), (113, 33332), (122, 33425),

Gene: Stuff\_53 Start: 37765, Stop: 38778, Start Num: 15

Candidate Starts for Stuff\_53:

(Start: 15 @37765 has 11 MA's), (24, 37849), (26, 37864), (37, 37966), (39, 37993), (40, 37999), (51, 38098), (58, 38182), (61, 38203), (66, 38236), (74, 38302), (76, 38326), (79, 38350), (91, 38458), (93, 38482), (95, 38494), (96, 38500), (104, 38590), (113, 38656), (117, 38680), (118, 38698),

Gene: Sucha\_46 Start: 28453, Stop: 29529, Start Num: 8

Candidate Starts for Sucha\_46:

(Start: 8 @28453 has 12 MA's), (19, 28522), (35, 28621), (45, 28747), (47, 28765), (55, 28843), (65, 28918), (77, 29026), (80, 29047), (83, 29065), (86, 29077), (89, 29122), (95, 29176), (97, 29185), (110, 29296), (112, 29317), (113, 29320),

Gene: Supakev\_41 Start: 28837, Stop: 29880, Start Num: 9

Candidate Starts for Supakev\_41:

(Start: 9 @28837 has 9 MA's), (43, 29104), (65, 29311), (69, 29350), (75, 29401), (76, 29404), (77, 29413), (86, 29464), (88, 29488), (96, 29569), (111, 29692), (120, 29758),

Gene: Suppi\_43 Start: 28835, Stop: 29941, Start Num: 4

Candidate Starts for Suppi\_43:

(Start: 4 @28835 has 4 MA's), (Start: 11 @28892 has 55 MA's), (33, 29033), (43, 29156), (47, 29204), (60, 29339), (64, 29354), (65, 29363), (72, 29417), (76, 29456), (77, 29465), (88, 29540), (105, 29708), (108, 29726), (113, 29756),

Gene: TattModd\_42 Start: 28654, Stop: 29697, Start Num: 11

Candidate Starts for TattModd\_42:

(Start: 11 @28654 has 55 MA's), (21, 28726), (27, 28759), (32, 28780), (43, 28915), (64, 29113), (65, 29122), (76, 29215), (77, 29224), (86, 29275), (88, 29299), (103, 29440), (105, 29467), (108, 29485), (111, 29503), (113, 29515), (120, 29569),

Gene: Temper16\_41 Start: 28815, Stop: 29891, Start Num: 6

Candidate Starts for Temper16\_41:

(Start: 6 @28815 has 6 MA's), (Start: 9 @28848 has 9 MA's), (21, 28929), (38, 29067), (43, 29115), (47, 29163), (60, 29298), (65, 29322), (76, 29415), (77, 29424), (86, 29475), (88, 29499), (96, 29580), (105, 29667), (107, 29676), (111, 29703), (120, 29769),

Gene: Theresita\_46 Start: 28078, Stop: 29154, Start Num: 7

Candidate Starts for Theresita\_46:

(Start: 7 @28078 has 5 MA's), (48, 28396), (54, 28456), (55, 28471), (73, 28615), (77, 28654), (80, 28675), (81, 28678), (83, 28693), (84, 28699), (88, 28729), (89, 28750), (95, 28804), (96, 28810), (97, 28813), (103, 28873), (108, 28918), (119, 28999),

Gene: TurboVicky\_47 Start: 30002, Stop: 31069, Start Num: 8

Candidate Starts for TurboVicky\_47:

(Start: 8 @30002 has 12 MA's), (Start: 10 @30011 has 1 MA's), (17, 30071), (45, 30287), (48, 30308), (54, 30368), (55, 30383), (65, 30458), (77, 30566), (80, 30587), (84, 30611), (89, 30662), (95, 30716), (96, 30722), (97, 30725), (98, 30728), (108, 30830), (110, 30836), (118, 30902),

Gene: Typher\_48 Start: 29589, Stop: 30656, Start Num: 8

Candidate Starts for Typher\_48:

(Start: 8 @29589 has 12 MA's), (Start: 10 @29598 has 1 MA's), (17, 29658), (45, 29874), (48, 29895), (54, 29955), (55, 29970), (65, 30045), (77, 30153), (80, 30174), (84, 30198), (89, 30249), (95, 30303), (96, 30309), (97, 30312), (108, 30417), (110, 30423), (118, 30489),

Gene: UNTPL\_55 Start: 37799, Stop: 38812, Start Num: 15

Candidate Starts for UNTPL\_55:

(Start: 15 @37799 has 11 MA's), (18, 37823), (24, 37883), (26, 37898), (37, 38000), (39, 38027), (40, 38033), (51, 38132), (58, 38216), (61, 38237), (66, 38270), (74, 38336), (76, 38360), (79, 38384), (91, 38492), (93, 38516), (95, 38528), (96, 38534), (104, 38624), (113, 38690), (117, 38714), (118, 38732),

Gene: Urla\_42 Start: 28818, Stop: 29870, Start Num: 11

Candidate Starts for Urla\_42:

(Start: 11 @28818 has 55 MA's), (21, 28890), (27, 28923), (43, 29079), (64, 29277), (65, 29286), (76, 29379), (77, 29388), (85, 29436), (88, 29463), (96, 29544), (105, 29631), (107, 29640), (111, 29667), (120, 29733),

Gene: Vallejo\_44 Start: 29008, Stop: 30051, Start Num: 11

Candidate Starts for Vallejo\_44:

(Start: 11 @29008 has 55 MA's), (21, 29080), (43, 29269), (60, 29452), (64, 29467), (65, 29476), (69, 29515), (76, 29569), (77, 29578), (85, 29626), (88, 29653), (105, 29821), (107, 29830), (111, 29857), (120, 29923),

Gene: Vulture\_41 Start: 28766, Stop: 29809, Start Num: 9

Candidate Starts for Vulture\_41:

(Start: 9 @28766 has 9 MA's), (16, 28811), (29, 28886), (43, 29033), (47, 29081), (65, 29240), (76, 29333), (77, 29342), (86, 29393), (88, 29417), (96, 29498), (105, 29585), (107, 29594), (108, 29603), (111, 29621), (120, 29687),

Gene: Wawa\_43 Start: 28841, Stop: 29884, Start Num: 11

Candidate Starts for Wawa\_43:

(Start: 11 @28841 has 55 MA's), (21, 28913), (43, 29102), (64, 29300), (65, 29309), (69, 29348), (76, 29402), (77, 29411), (85, 29459), (88, 29486), (105, 29654), (107, 29663), (111, 29690), (120, 29756),

Gene: Wayne\_43 Start: 28881, Stop: 29987, Start Num: 4

Candidate Starts for Wayne\_43:

(Start: 4 @28881 has 4 MA's), (Start: 11 @28938 has 55 MA's), (33, 29079), (43, 29202), (47, 29250), (60, 29385), (64, 29400), (65, 29409), (72, 29463), (76, 29502), (77, 29511), (88, 29586), (105, 29754), (108, 29772), (113, 29802),

Gene: WonderBoy\_40 Start: 27638, Stop: 28687, Start Num: 11

Candidate Starts for WonderBoy\_40:

(Start: 11 @27638 has 55 MA's), (21, 27710), (27, 27743), (32, 27764), (43, 27899), (65, 28106), (69, 28145), (76, 28199), (77, 28208), (83, 28247), (86, 28259), (88, 28283), (103, 28424), (105, 28451), (108, 28469), (111, 28487), (120, 28553),

Gene: Zanella\_46 Start: 29837, Stop: 30895, Start Num: 10

Candidate Starts for Zanella\_46:

(Start: 8 @29828 has 12 MA's), (Start: 10 @29837 has 1 MA's), (17, 29897), (45, 30113), (48, 30134), (54, 30194), (55, 30209), (65, 30284), (77, 30392), (80, 30413), (84, 30437), (89, 30488), (95, 30542), (96, 30548), (97, 30551), (108, 30656), (110, 30662), (118, 30728),

Gene: Zorro\_44 Start: 28953, Stop: 30011, Start Num: 7

Candidate Starts for Zorro\_44:

(Start: 7 @28953 has 5 MA's), (Start: 11 @28968 has 55 MA's), (21, 29040), (43, 29229), (64, 29427), (65, 29436), (69, 29475), (76, 29529), (77, 29538), (85, 29586), (88, 29613), (105, 29781), (107, 29790), (111, 29817), (120, 29883),