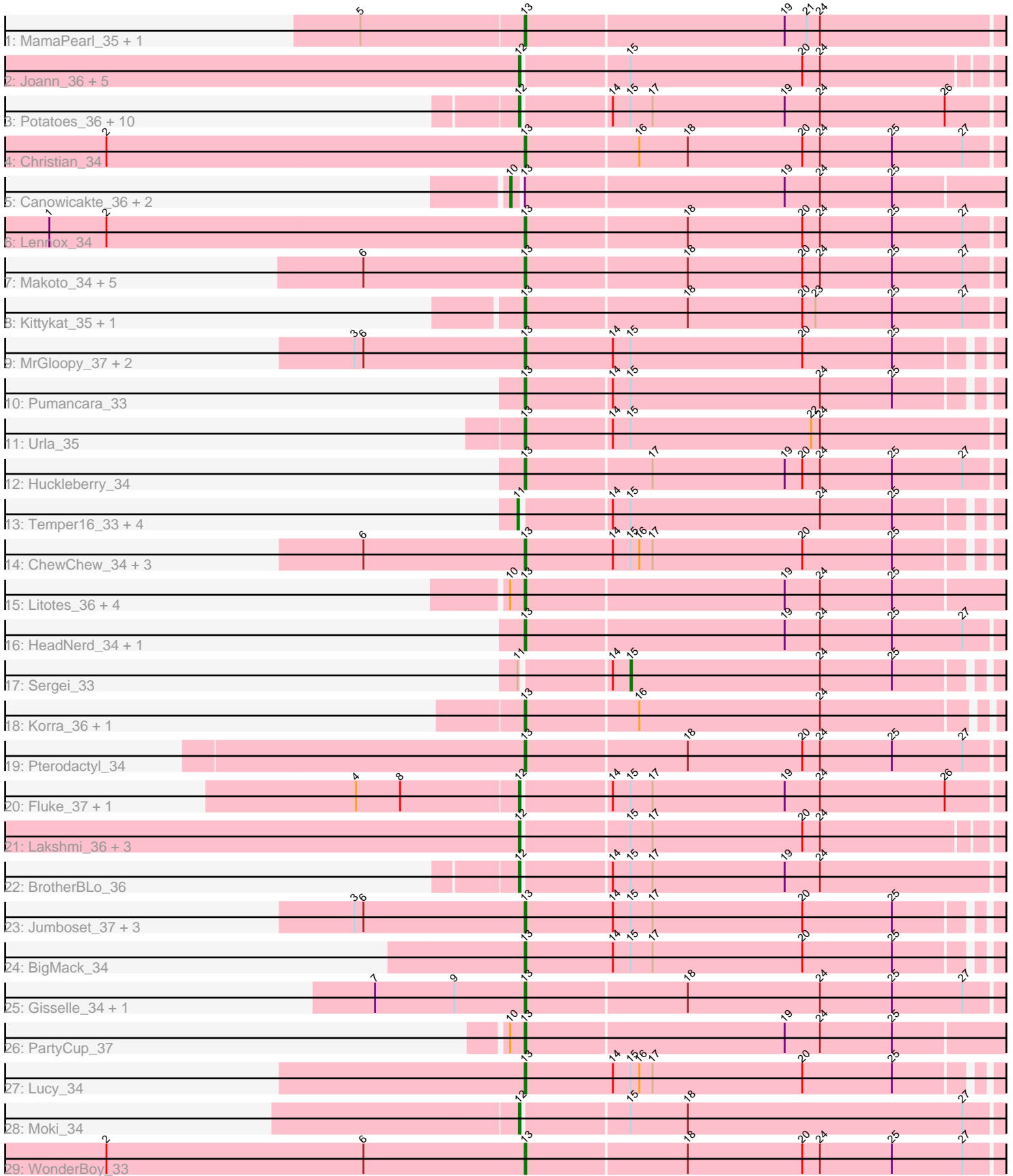


# Pham 301330



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 301330 Report

This analysis was run 06/08/26 on database version 649.

Pham number 301330 has 76 members, 2 are drafts.

Phages represented in each track:

- Track 1 : MamaPearl\_35, EstebanJulior\_35
- Track 2 : Joann\_36, GreenHearts\_36, Albanese\_36, Oxyfriuus\_36, Nubia\_36, Greenhouse\_37
- Track 3 : Potatoes\_36, Rozby\_37, Riverdale\_37, Beethoven\_37, Cholula\_36, Glenn\_37, Carpal\_36, Immaculata\_36, Kalizoi\_37, Vallejo\_37, TattModd\_36
- Track 4 : Christian\_34
- Track 5 : Canowicakte\_36, Suppi\_36, Wayne\_36
- Track 6 : Lennox\_34
- Track 7 : Makoto\_34, DrRobert\_33, CristinaYang\_34, OurGirlNessie\_33, Lasagna\_33, LilStuart\_34
- Track 8 : Kittykat\_35, Preamble\_34
- Track 9 : MrGloopy\_37, Dino\_37, Zorro\_37
- Track 10 : Pumancara\_33
- Track 11 : Urla\_35
- Track 12 : Huckleberry\_34
- Track 13 : Temper16\_33, Daiboju\_33, KingBob\_33, Herb\_33, Maria1952\_32
- Track 14 : ChewChew\_34, Bodacious\_34, PitaDog\_34, Nancia\_34
- Track 15 : Litotes\_36, Graynor\_39, CallieOMalley\_36, MrBoss\_38, AppleCider\_36
- Track 16 : HeadNerd\_34, Bennie\_34
- Track 17 : Sergei\_33
- Track 18 : Korra\_36, Wawa\_36
- Track 19 : Pterodactyl\_34
- Track 20 : Fluke\_37, Scuttle\_36
- Track 21 : Lakshmi\_36, RcigaStruga\_35, Misaeng\_35, Huntingdon\_35
- Track 22 : BrotherBLo\_36
- Track 23 : Jumboset\_37, MeganNoll\_36, RAP15\_37, Savage2526\_37
- Track 24 : BigMack\_34
- Track 25 : Gisselle\_34, DreamTeam\_34
- Track 26 : PartyCup\_37
- Track 27 : Lucy\_34
- Track 28 : Moki\_34
- Track 29 : WonderBoy\_33

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

The start number called the most often in the published annotations is 13, it was called in 40 of the 74 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AppleCider\_36, Bennie\_34, BigMack\_34, Bodacious\_34, CallieOMalley\_36, ChewChew\_34, Christian\_34, CristinaYang\_34, Dino\_37, DrRobert\_33, DreamTeam\_34, EstebanJulior\_35, Gisselle\_34, Graynor\_39, HeadNerd\_34, Huckleberry\_34, Jumboset\_37, Kittykat\_35, Korra\_36, Lasagna\_33, Lennox\_34, LilStuart\_34, Litotes\_36, Lucy\_34, Makoto\_34, MamaPearl\_35, MeganNoll\_36, MrBoss\_38, MrGloopy\_37, Nancia\_34, OurGirlNessie\_33, PartyCup\_37, PitaDog\_34, Preamble\_34, Pterodactyl\_34, Pumancara\_33, RAP15\_37, Savage2526\_37, Urla\_35, Wawa\_36, WonderBoy\_33, Zorro\_37,

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

- Canowicakte\_36, Suppi\_36, Wayne\_36,

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

- Albanese\_36, Beethoven\_37, BrotherBLo\_36, Carpal\_36, Cholula\_36, Daiboju\_33, Fluke\_37, Glenn\_37, GreenHearts\_36, Greenhouse\_37, Herb\_33, Huntingdon\_35, Immaculata\_36, Joann\_36, Kalizoi\_37, KingBob\_33, Lakshmi\_36, Maria1952\_32, Misaeng\_35, Moki\_34, Nubia\_36, Oxynfrius\_36, Potatoes\_36, RcigaStruga\_35, Riverdale\_37, Rozby\_37, Scuttle\_36, Sergei\_33, TattModd\_36, Temper16\_33, Vallejo\_37,

### Summary by start number:

Start 10:

- Found in 9 of 76 ( 11.8% ) of genes in pham
- Manual Annotations of this start: 3 of 74
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Canowicakte\_36 (AK), Suppi\_36 (AK), Wayne\_36 (AK),

Start 11:

- Found in 6 of 76 ( 7.9% ) of genes in pham
- Manual Annotations of this start: 5 of 74
- Called 83.3% of time when present
- Phage (with cluster) where this start called: Daiboju\_33 (AK), Herb\_33 (AK), KingBob\_33 (AK), Maria1952\_32 (AK), Temper16\_33 (AK),

Start 12:

- Found in 25 of 76 ( 32.9% ) of genes in pham
- Manual Annotations of this start: 25 of 74
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Albanese\_36 (AK), Beethoven\_37 (AK), BrotherBLo\_36 (AK), Carpal\_36 (AK), Cholula\_36 (AK), Fluke\_37 (AK), Glenn\_37 (AK), GreenHearts\_36 (AK), Greenhouse\_37 (AK), Huntingdon\_35 (AK), Immaculata\_36 (AK), Joann\_36 (AK), Kalizoi\_37 (AK), Lakshmi\_36 (AK), Misaeng\_35 (AK), Moki\_34 (AK), Nubia\_36 (AK), Oxynfrius\_36 (AK), Potatoes\_36 (AK), RcigaStruga\_35 (AK), Riverdale\_37 (AK), Rozby\_37 (AK), Scuttle\_36 (AK), TattModd\_36 (AK), Vallejo\_37 (AK),

#### Start 13:

- Found in 45 of 76 ( 59.2% ) of genes in pham
- Manual Annotations of this start: 40 of 74
- Called 93.3% of time when present
- Phage (with cluster) where this start called: AppleCider\_36 (AK), Bennie\_34 (AK), BigMack\_34 (AK), Bodacious\_34 (AK), CallieOMalley\_36 (AK), ChewChew\_34 (AK), Christian\_34 (AK), CristinaYang\_34 (AK), Dino\_37 (AK), DrRobert\_33 (AK), DreamTeam\_34 (AK), EstebanJulior\_35 (AK), Gisselle\_34 (AK), Graynor\_39 (AK), HeadNerd\_34 (AK), Huckleberry\_34 (AK), Jumboset\_37 (AK), Kittykat\_35 (AK), Korra\_36 (AK), Lasagna\_33 (AK), Lennox\_34 (AK), LilStuart\_34 (AK), Litotes\_36 (AK), Lucy\_34 (AK), Makoto\_34 (AK), MamaPearl\_35 (AK), MeganNoll\_36 (AK), MrBoss\_38 (AK), MrGloopy\_37 (AK), Nancia\_34 (AK), OurGirlNessie\_33 (AK), PartyCup\_37 (AK), PitaDog\_34 (AK), Preamble\_34 (AK), Pterodactyl\_34 (AK), Pumancara\_33 (AK), RAP15\_37 (AK), Savage2526\_37 (AK), Urla\_35 (AK), Wawa\_36 (AK), WonderBoy\_33 (AK), Zorro\_37 (AK),

#### Start 15:

- Found in 46 of 76 ( 60.5% ) of genes in pham
- Manual Annotations of this start: 1 of 74
- Called 2.2% of time when present
- Phage (with cluster) where this start called: Sergei\_33 (AK),

#### Summary by clusters:

There is one cluster represented in this pham: AK

Info for manual annotations of cluster AK:

- Start number 10 was manually annotated 3 times for cluster AK.
- Start number 11 was manually annotated 5 times for cluster AK.
- Start number 12 was manually annotated 25 times for cluster AK.
- Start number 13 was manually annotated 40 times for cluster AK.
- Start number 15 was manually annotated 1 time for cluster AK.

#### **Gene Information:**

Gene: Albanese\_36 Start: 26381, Stop: 26731, Start Num: 12

Candidate Starts for Albanese\_36:

(Start: 12 @26381 has 25 MA's), (Start: 15 @26450 has 1 MA's), (20, 26567), (24, 26579),

Gene: AppleCider\_36 Start: 26075, Stop: 26431, Start Num: 13

Candidate Starts for AppleCider\_36:

(Start: 10 @26069 has 3 MA's), (Start: 13 @26075 has 40 MA's), (19, 26249), (24, 26273), (25, 26321),

Gene: Beethoven\_37 Start: 26264, Stop: 26617, Start Num: 12

Candidate Starts for Beethoven\_37:

(Start: 12 @26264 has 25 MA's), (14, 26321), (Start: 15 @26333 has 1 MA's), (17, 26348), (19, 26438), (24, 26462), (26, 26546),

Gene: Bennie\_34 Start: 24869, Stop: 25225, Start Num: 13

Candidate Starts for Bennie\_34:

(Start: 13 @24869 has 40 MA's), (19, 25043), (24, 25067), (25, 25115), (27, 25163),

Gene: BigMack\_34 Start: 24977, Stop: 25324, Start Num: 13

Candidate Starts for BigMack\_34:

(Start: 13 @24977 has 40 MA's), (14, 25037), (Start: 15 @25049 has 1 MA's), (17, 25064), (20, 25166), (25, 25226),

Gene: Bodacious\_34 Start: 24906, Stop: 25253, Start Num: 13

Candidate Starts for Bodacious\_34:

(6, 24798), (Start: 13 @24906 has 40 MA's), (14, 24966), (Start: 15 @24978 has 1 MA's), (16, 24984), (17, 24993), (20, 25095), (25, 25155),

Gene: BrotherBLo\_36 Start: 26087, Stop: 26440, Start Num: 12

Candidate Starts for BrotherBLo\_36:

(Start: 12 @26087 has 25 MA's), (14, 26144), (Start: 15 @26156 has 1 MA's), (17, 26171), (19, 26261), (24, 26285),

Gene: CallieOMalley\_36 Start: 26075, Stop: 26431, Start Num: 13

Candidate Starts for CallieOMalley\_36:

(Start: 10 @26069 has 3 MA's), (Start: 13 @26075 has 40 MA's), (19, 26249), (24, 26273), (25, 26321),

Gene: Canowicakte\_36 Start: 26104, Stop: 26466, Start Num: 10

Candidate Starts for Canowicakte\_36:

(Start: 10 @26104 has 3 MA's), (Start: 13 @26110 has 40 MA's), (19, 26284), (24, 26308), (25, 26356),

Gene: Carpal\_36 Start: 26067, Stop: 26420, Start Num: 12

Candidate Starts for Carpal\_36:

(Start: 12 @26067 has 25 MA's), (14, 26124), (Start: 15 @26136 has 1 MA's), (17, 26151), (19, 26241), (24, 26265), (26, 26349),

Gene: ChewChew\_34 Start: 24901, Stop: 25248, Start Num: 13

Candidate Starts for ChewChew\_34:

(6, 24793), (Start: 13 @24901 has 40 MA's), (14, 24961), (Start: 15 @24973 has 1 MA's), (16, 24979), (17, 24988), (20, 25090), (25, 25150),

Gene: Cholula\_36 Start: 26113, Stop: 26466, Start Num: 12

Candidate Starts for Cholula\_36:

(Start: 12 @26113 has 25 MA's), (14, 26170), (Start: 15 @26182 has 1 MA's), (17, 26197), (19, 26287), (24, 26311), (26, 26395),

Gene: Christian\_34 Start: 24903, Stop: 25259, Start Num: 13

Candidate Starts for Christian\_34:

(2, 24621), (Start: 13 @24903 has 40 MA's), (16, 24978), (18, 25011), (20, 25089), (24, 25101), (25, 25149), (27, 25197),

Gene: CristinaYang\_34 Start: 24906, Stop: 25262, Start Num: 13

Candidate Starts for CristinaYang\_34:

(6, 24798), (Start: 13 @24906 has 40 MA's), (18, 25014), (20, 25092), (24, 25104), (25, 25152), (27, 25200),

Gene: Daiboju\_33 Start: 25714, Stop: 26058, Start Num: 11

Candidate Starts for Daiboju\_33:

(Start: 11 @25714 has 5 MA's), (14, 25771), (Start: 15 @25783 has 1 MA's), (24, 25912), (25, 25960),

Gene: Dino\_37 Start: 26225, Stop: 26572, Start Num: 13

Candidate Starts for Dino\_37:

(3, 26111), (6, 26117), (Start: 13 @26225 has 40 MA's), (14, 26285), (Start: 15 @26297 has 1 MA's), (20, 26414), (25, 26474),

Gene: DrRobert\_33 Start: 24665, Stop: 25021, Start Num: 13

Candidate Starts for DrRobert\_33:

(6, 24557), (Start: 13 @24665 has 40 MA's), (18, 24773), (20, 24851), (24, 24863), (25, 24911), (27, 24959),

Gene: DreamTeam\_34 Start: 24997, Stop: 25353, Start Num: 13

Candidate Starts for DreamTeam\_34:

(7, 24895), (9, 24949), (Start: 13 @24997 has 40 MA's), (18, 25105), (24, 25195), (25, 25243), (27, 25291),

Gene: EstebanJulior\_35 Start: 26057, Stop: 26410, Start Num: 13

Candidate Starts for EstebanJulior\_35:

(5, 25949), (Start: 13 @26057 has 40 MA's), (19, 26231), (21, 26246), (24, 26255),

Gene: Fluke\_37 Start: 26335, Stop: 26688, Start Num: 12

Candidate Starts for Fluke\_37:

(4, 26227), (8, 26257), (Start: 12 @26335 has 25 MA's), (14, 26392), (Start: 15 @26404 has 1 MA's), (17, 26419), (19, 26509), (24, 26533), (26, 26617),

Gene: Gisselle\_34 Start: 24997, Stop: 25353, Start Num: 13

Candidate Starts for Gisselle\_34:

(7, 24895), (9, 24949), (Start: 13 @24997 has 40 MA's), (18, 25105), (24, 25195), (25, 25243), (27, 25291),

Gene: Glenn\_37 Start: 26321, Stop: 26674, Start Num: 12

Candidate Starts for Glenn\_37:

(Start: 12 @26321 has 25 MA's), (14, 26378), (Start: 15 @26390 has 1 MA's), (17, 26405), (19, 26495), (24, 26519), (26, 26603),

Gene: Graynor\_39 Start: 26096, Stop: 26452, Start Num: 13

Candidate Starts for Graynor\_39:

(Start: 10 @26090 has 3 MA's), (Start: 13 @26096 has 40 MA's), (19, 26270), (24, 26294), (25, 26342),

Gene: GreenHearts\_36 Start: 26473, Stop: 26823, Start Num: 12

Candidate Starts for GreenHearts\_36:

(Start: 12 @26473 has 25 MA's), (Start: 15 @26542 has 1 MA's), (20, 26659), (24, 26671),

Gene: Greenhouse\_37 Start: 26388, Stop: 26738, Start Num: 12

Candidate Starts for Greenhouse\_37:

(Start: 12 @26388 has 25 MA's), (Start: 15 @26457 has 1 MA's), (20, 26574), (24, 26586),

Gene: HeadNerd\_34 Start: 24869, Stop: 25225, Start Num: 13

Candidate Starts for HeadNerd\_34:

(Start: 13 @24869 has 40 MA's), (19, 25043), (24, 25067), (25, 25115), (27, 25163),

Gene: Herb\_33 Start: 25713, Stop: 26057, Start Num: 11

Candidate Starts for Herb\_33:

(Start: 11 @25713 has 5 MA's), (14, 25770), (Start: 15 @25782 has 1 MA's), (24, 25911), (25, 25959),

Gene: Huckleberry\_34 Start: 24852, Stop: 25208, Start Num: 13

Candidate Starts for Huckleberry\_34:

(Start: 13 @24852 has 40 MA's), (17, 24936), (19, 25026), (20, 25038), (24, 25050), (25, 25098), (27, 25146),

Gene: Huntingdon\_35 Start: 26124, Stop: 26468, Start Num: 12

Candidate Starts for Huntingdon\_35:

(Start: 12 @26124 has 25 MA's), (Start: 15 @26193 has 1 MA's), (17, 26208), (20, 26310), (24, 26322),

Gene: Immaculata\_36 Start: 26112, Stop: 26465, Start Num: 12

Candidate Starts for Immaculata\_36:

(Start: 12 @26112 has 25 MA's), (14, 26169), (Start: 15 @26181 has 1 MA's), (17, 26196), (19, 26286), (24, 26310), (26, 26394),

Gene: Joann\_36 Start: 26350, Stop: 26700, Start Num: 12

Candidate Starts for Joann\_36:

(Start: 12 @26350 has 25 MA's), (Start: 15 @26419 has 1 MA's), (20, 26536), (24, 26548),

Gene: Jumboset\_37 Start: 26207, Stop: 26554, Start Num: 13

Candidate Starts for Jumboset\_37:

(3, 26093), (6, 26099), (Start: 13 @26207 has 40 MA's), (14, 26267), (Start: 15 @26279 has 1 MA's), (17, 26294), (20, 26396), (25, 26456),

Gene: Kalizoi\_37 Start: 26263, Stop: 26616, Start Num: 12

Candidate Starts for Kalizoi\_37:

(Start: 12 @26263 has 25 MA's), (14, 26320), (Start: 15 @26332 has 1 MA's), (17, 26347), (19, 26437), (24, 26461), (26, 26545),

Gene: KingBob\_33 Start: 25714, Stop: 26058, Start Num: 11

Candidate Starts for KingBob\_33:

(Start: 11 @25714 has 5 MA's), (14, 25771), (Start: 15 @25783 has 1 MA's), (24, 25912), (25, 25960),

Gene: Kittykat\_35 Start: 25117, Stop: 25473, Start Num: 13

Candidate Starts for Kittykat\_35:

(Start: 13 @25117 has 40 MA's), (18, 25225), (20, 25303), (23, 25312), (25, 25363), (27, 25411),

Gene: Korra\_36 Start: 26080, Stop: 26424, Start Num: 13

Candidate Starts for Korra\_36:

(Start: 13 @26080 has 40 MA's), (16, 26155), (24, 26278),

Gene: Lakshmi\_36 Start: 26357, Stop: 26707, Start Num: 12

Candidate Starts for Lakshmi\_36:

(Start: 12 @26357 has 25 MA's), (Start: 15 @26426 has 1 MA's), (17, 26441), (20, 26543), (24, 26555),

Gene: Lasagna\_33 Start: 24680, Stop: 25036, Start Num: 13

Candidate Starts for Lasagna\_33:

(6, 24572), (Start: 13 @24680 has 40 MA's), (18, 24788), (20, 24866), (24, 24878), (25, 24926), (27, 24974),

Gene: Lennox\_34 Start: 24891, Stop: 25247, Start Num: 13

Candidate Starts for Lennox\_34:

(1, 24570), (2, 24609), (Start: 13 @24891 has 40 MA's), (18, 24999), (20, 25077), (24, 25089), (25, 25137), (27, 25185),

Gene: LilStuart\_34 Start: 24894, Stop: 25250, Start Num: 13

Candidate Starts for LilStuart\_34:

(6, 24786), (Start: 13 @24894 has 40 MA's), (18, 25002), (20, 25080), (24, 25092), (25, 25140), (27, 25188),

Gene: Litotes\_36 Start: 26060, Stop: 26416, Start Num: 13

Candidate Starts for Litotes\_36:

(Start: 10 @26054 has 3 MA's), (Start: 13 @26060 has 40 MA's), (19, 26234), (24, 26258), (25, 26306),

Gene: Lucy\_34 Start: 24882, Stop: 25229, Start Num: 13

Candidate Starts for Lucy\_34:

(Start: 13 @24882 has 40 MA's), (14, 24942), (Start: 15 @24954 has 1 MA's), (16, 24960), (17, 24969), (20, 25071), (25, 25131),

Gene: Makoto\_34 Start: 24902, Stop: 25258, Start Num: 13

Candidate Starts for Makoto\_34:

(6, 24794), (Start: 13 @24902 has 40 MA's), (18, 25010), (20, 25088), (24, 25100), (25, 25148), (27, 25196),

Gene: MamaPearl\_35 Start: 26057, Stop: 26410, Start Num: 13

Candidate Starts for MamaPearl\_35:

(5, 25949), (Start: 13 @26057 has 40 MA's), (19, 26231), (21, 26246), (24, 26255),

Gene: Maria1952\_32 Start: 25713, Stop: 26057, Start Num: 11

Candidate Starts for Maria1952\_32:

(Start: 11 @25713 has 5 MA's), (14, 25770), (Start: 15 @25782 has 1 MA's), (24, 25911), (25, 25959),

Gene: MeganNoll\_36 Start: 26264, Stop: 26611, Start Num: 13

Candidate Starts for MeganNoll\_36:

(3, 26150), (6, 26156), (Start: 13 @26264 has 40 MA's), (14, 26324), (Start: 15 @26336 has 1 MA's), (17, 26351), (20, 26453), (25, 26513),

Gene: Misaeng\_35 Start: 26357, Stop: 26701, Start Num: 12

Candidate Starts for Misaeng\_35:

(Start: 12 @26357 has 25 MA's), (Start: 15 @26426 has 1 MA's), (17, 26441), (20, 26543), (24, 26555),

Gene: Moki\_34 Start: 25018, Stop: 25374, Start Num: 12

Candidate Starts for Moki\_34:

(Start: 12 @25018 has 25 MA's), (Start: 15 @25087 has 1 MA's), (18, 25126), (27, 25312),

Gene: MrBoss\_38 Start: 26060, Stop: 26416, Start Num: 13

Candidate Starts for MrBoss\_38:

(Start: 10 @26054 has 3 MA's), (Start: 13 @26060 has 40 MA's), (19, 26234), (24, 26258), (25, 26306),

Gene: MrGloopy\_37 Start: 26193, Stop: 26540, Start Num: 13

Candidate Starts for MrGloopy\_37:

(3, 26079), (6, 26085), (Start: 13 @26193 has 40 MA's), (14, 26253), (Start: 15 @26265 has 1 MA's), (20, 26382), (25, 26442),

Gene: Nancia\_34 Start: 24906, Stop: 25253, Start Num: 13

Candidate Starts for Nancia\_34:

(6, 24798), (Start: 13 @24906 has 40 MA's), (14, 24966), (Start: 15 @24978 has 1 MA's), (16, 24984), (17, 24993), (20, 25095), (25, 25155),

Gene: Nubia\_36 Start: 26306, Stop: 26656, Start Num: 12

Candidate Starts for Nubia\_36:

(Start: 12 @26306 has 25 MA's), (Start: 15 @26375 has 1 MA's), (20, 26492), (24, 26504),

Gene: OurGirlNessie\_33 Start: 24646, Stop: 25002, Start Num: 13

Candidate Starts for OurGirlNessie\_33:

(6, 24538), (Start: 13 @24646 has 40 MA's), (18, 24754), (20, 24832), (24, 24844), (25, 24892), (27, 24940),

Gene: Oxynfrius\_36 Start: 26335, Stop: 26685, Start Num: 12

Candidate Starts for Oxynfrius\_36:

(Start: 12 @26335 has 25 MA's), (Start: 15 @26404 has 1 MA's), (20, 26521), (24, 26533),

Gene: PartyCup\_37 Start: 26305, Stop: 26661, Start Num: 13

Candidate Starts for PartyCup\_37:

(Start: 10 @26299 has 3 MA's), (Start: 13 @26305 has 40 MA's), (19, 26479), (24, 26503), (25, 26551),

Gene: PitaDog\_34 Start: 24894, Stop: 25241, Start Num: 13

Candidate Starts for PitaDog\_34:

(6, 24786), (Start: 13 @24894 has 40 MA's), (14, 24954), (Start: 15 @24966 has 1 MA's), (16, 24972), (17, 24981), (20, 25083), (25, 25143),

Gene: Potatoes\_36 Start: 26113, Stop: 26466, Start Num: 12

Candidate Starts for Potatoes\_36:

(Start: 12 @26113 has 25 MA's), (14, 26170), (Start: 15 @26182 has 1 MA's), (17, 26197), (19, 26287), (24, 26311), (26, 26395),

Gene: Preamble\_34 Start: 24974, Stop: 25330, Start Num: 13

Candidate Starts for Preamble\_34:

(Start: 13 @24974 has 40 MA's), (18, 25082), (20, 25160), (23, 25169), (25, 25220), (27, 25268),

Gene: Pterodactyl\_34 Start: 24883, Stop: 25239, Start Num: 13

Candidate Starts for Pterodactyl\_34:

(Start: 13 @24883 has 40 MA's), (18, 24991), (20, 25069), (24, 25081), (25, 25129), (27, 25177),

Gene: Pumancara\_33 Start: 24734, Stop: 25078, Start Num: 13

Candidate Starts for Pumancara\_33:

(Start: 13 @24734 has 40 MA's), (14, 24791), (Start: 15 @24803 has 1 MA's), (24, 24932), (25, 24980),

Gene: RAP15\_37 Start: 26264, Stop: 26611, Start Num: 13

Candidate Starts for RAP15\_37:

(3, 26150), (6, 26156), (Start: 13 @26264 has 40 MA's), (14, 26324), (Start: 15 @26336 has 1 MA's), (17, 26351), (20, 26453), (25, 26513),

Gene: RcigaStruga\_35 Start: 26124, Stop: 26468, Start Num: 12

Candidate Starts for RcigaStruga\_35:

(Start: 12 @26124 has 25 MA's), (Start: 15 @26193 has 1 MA's), (17, 26208), (20, 26310), (24, 26322),

Gene: Riverdale\_37 Start: 26251, Stop: 26604, Start Num: 12

Candidate Starts for Riverdale\_37:

(Start: 12 @26251 has 25 MA's), (14, 26308), (Start: 15 @26320 has 1 MA's), (17, 26335), (19, 26425), (24, 26449), (26, 26533),

Gene: Rozby\_37 Start: 26252, Stop: 26605, Start Num: 12

Candidate Starts for Rozby\_37:

(Start: 12 @26252 has 25 MA's), (14, 26309), (Start: 15 @26321 has 1 MA's), (17, 26336), (19, 26426), (24, 26450), (26, 26534),

Gene: Savage2526\_37 Start: 26258, Stop: 26605, Start Num: 13

Candidate Starts for Savage2526\_37:

(3, 26144), (6, 26150), (Start: 13 @26258 has 40 MA's), (14, 26318), (Start: 15 @26330 has 1 MA's), (17, 26345), (20, 26447), (25, 26507),

Gene: Scuttle\_36 Start: 26245, Stop: 26598, Start Num: 12

Candidate Starts for Scuttle\_36:

(4, 26137), (8, 26167), (Start: 12 @26245 has 25 MA's), (14, 26302), (Start: 15 @26314 has 1 MA's), (17, 26329), (19, 26419), (24, 26443), (26, 26527),

Gene: Sergei\_33 Start: 25783, Stop: 26058, Start Num: 15

Candidate Starts for Sergei\_33:

(Start: 11 @25714 has 5 MA's), (14, 25771), (Start: 15 @25783 has 1 MA's), (24, 25912), (25, 25960),

Gene: Suppi\_36 Start: 26104, Stop: 26466, Start Num: 10

Candidate Starts for Suppi\_36:

(Start: 10 @26104 has 3 MA's), (Start: 13 @26110 has 40 MA's), (19, 26284), (24, 26308), (25, 26356),

Gene: TattModd\_36 Start: 26109, Stop: 26462, Start Num: 12

Candidate Starts for TattModd\_36:

(Start: 12 @26109 has 25 MA's), (14, 26166), (Start: 15 @26178 has 1 MA's), (17, 26193), (19, 26283), (24, 26307), (26, 26391),

Gene: Temper16\_33 Start: 25714, Stop: 26058, Start Num: 11

Candidate Starts for Temper16\_33:

(Start: 11 @25714 has 5 MA's), (14, 25771), (Start: 15 @25783 has 1 MA's), (24, 25912), (25, 25960),

Gene: Urla\_35 Start: 26069, Stop: 26437, Start Num: 13

Candidate Starts for Urla\_35:

(Start: 13 @26069 has 40 MA's), (14, 26126), (Start: 15 @26138 has 1 MA's), (22, 26261), (24, 26267),

Gene: Vallejo\_37 Start: 26254, Stop: 26607, Start Num: 12

Candidate Starts for Vallejo\_37:

(Start: 12 @26254 has 25 MA's), (14, 26311), (Start: 15 @26323 has 1 MA's), (17, 26338), (19, 26428), (24, 26452), (26, 26536),

Gene: Wawa\_36 Start: 26101, Stop: 26445, Start Num: 13

Candidate Starts for Wawa\_36:

(Start: 13 @26101 has 40 MA's), (16, 26176), (24, 26299),

Gene: Wayne\_36 Start: 26150, Stop: 26512, Start Num: 10

Candidate Starts for Wayne\_36:

(Start: 10 @26150 has 3 MA's), (Start: 13 @26156 has 40 MA's), (19, 26330), (24, 26354), (25, 26402),

Gene: WonderBoy\_33 Start: 24875, Stop: 25231, Start Num: 13

Candidate Starts for WonderBoy\_33:

(2, 24593), (6, 24767), (Start: 13 @24875 has 40 MA's), (18, 24983), (20, 25061), (24, 25073), (25, 25121), (27, 25169),

Gene: Zorro\_37 Start: 26225, Stop: 26572, Start Num: 13

Candidate Starts for Zorro\_37:

(3, 26111), (6, 26117), (Start: 13 @26225 has 40 MA's), (14, 26285), (Start: 15 @26297 has 1 MA's), (20, 26414), (25, 26474),