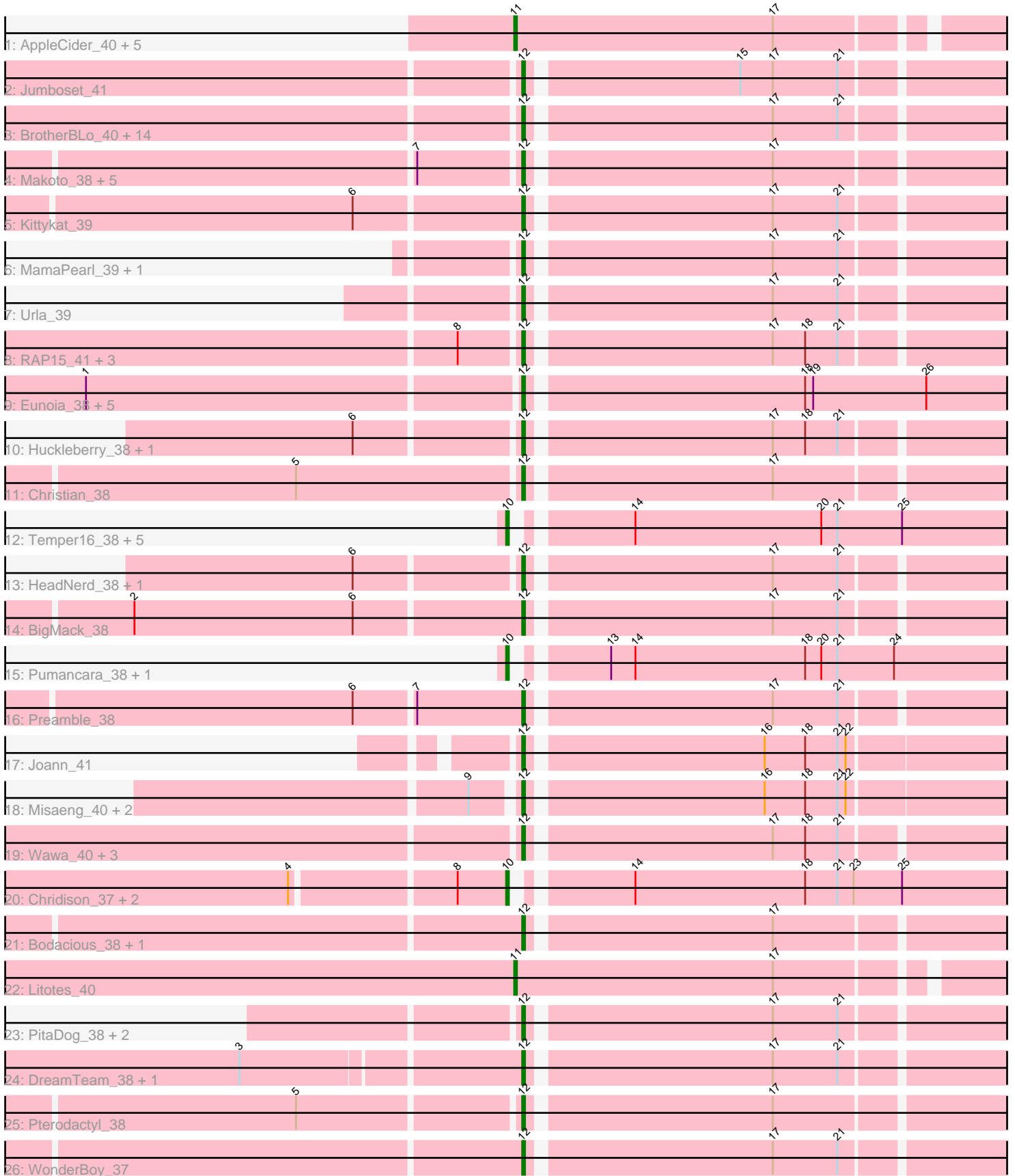


Pham 202889



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 202889 Report

This analysis was run 01/18/25 on database version 583.

Pham number 202889 has 78 members, 1 are drafts.

Phages represented in each track:

- Track 1 : AppleCider\_40, Suppi\_40, Wayne\_40, CallieOMalley\_40, PartyCup\_43, Canowicakte\_40
- Track 2 : Jumboset\_41
- Track 3 : BrotherBLo\_40, Kalizoi\_40, Vallejo\_41, Savage2526\_41, MrGloopy\_41, Immaculata\_40, Cholula\_40, Rozby\_40, Carpal\_40, Riverdale\_41, Glenn\_41, Lasagna\_37, Beethoven\_40, TattModd\_39, Potatoes\_40
- Track 4 : Makoto\_38, ChewChew\_38, DrRobert\_37, Lennox\_38, CristinaYang\_38, LilStuart\_38
- Track 5 : Kittykat\_39
- Track 6 : MamaPearl\_39, EstebanJulior\_39
- Track 7 : Urla\_39
- Track 8 : RAP15\_41, Zorro\_41, MeganNoll\_40, Dino\_41
- Track 9 : Eunoia\_38, OMalley\_38, AustinPowers\_38, Riovina\_38, Supakev\_38, Aledel\_38
- Track 10 : Huckleberry\_38, Bennie\_38
- Track 11 : Christian\_38
- Track 12 : Temper16\_38, Maria1952\_37, Sergei\_38, Daiboju\_38, KingBob\_38, Herb\_38
- Track 13 : HeadNerd\_38, Moki\_38
- Track 14 : BigMack\_38
- Track 15 : Pumancara\_38, PinkFriday\_38
- Track 16 : Preamble\_38
- Track 17 : Joann\_41
- Track 18 : Misaeng\_40, RcigaStruga\_40, Huntingdon\_40
- Track 19 : Wawa\_40, Korra\_40, Scuttle\_40, Fluke\_41
- Track 20 : Chridison\_37, Vulture\_38, HunterDalle\_38
- Track 21 : Bodacious\_38, Nancia\_38
- Track 22 : Litotes\_40
- Track 23 : PitaDog\_38, Lucy\_38, OurGirlNessie\_37
- Track 24 : DreamTeam\_38, Gisselle\_38
- Track 25 : Pterodactyl\_38
- Track 26 : WonderBoy\_37

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

The start number called the most often in the published annotations is 12, it was called in 60 of the 77 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Aledel\_38, AustinPowers\_38, Beethoven\_40, Bennie\_38, BigMack\_38, Bodacious\_38, BrotherBLo\_40, Carpal\_40, ChewChew\_38, Cholula\_40, Christian\_38, CristinaYang\_38, Dino\_41, DrRobert\_37, DreamTeam\_38, EstebanJulior\_39, Eunoia\_38, Fluke\_41, Gisselle\_38, Glenn\_41, HeadNerd\_38, Huckleberry\_38, Huntingdon\_40, Immaculata\_40, Joann\_41, Jumboset\_41, Kalizoi\_40, Kittykat\_39, Korra\_40, Lasagna\_37, Lennox\_38, LilStuart\_38, Lucy\_38, Makoto\_38, MamaPearl\_39, MeganNoll\_40, Misaeng\_40, Moki\_38, MrGloopy\_41, Nancia\_38, OMalley\_38, OurGirlNessie\_37, PitaDog\_38, Potatoes\_40, Preamble\_38, Pterodactyl\_38, RAP15\_41, RcigaStruga\_40, Riovina\_38, Riverdale\_41, Rozby\_40, Savage2526\_41, Scuttle\_40, Supakev\_38, TattModd\_39, Urla\_39, Vallejo\_41, Wawa\_40, WonderBoy\_37, Zorro\_41,

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

- 

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

- AppleCider\_40, CallieOMalley\_40, Canowicakte\_40, Chridison\_37, Daiboju\_38, Herb\_38, HunterDalle\_38, KingBob\_38, Litotes\_40, Maria1952\_37, PartyCup\_43, PinkFriday\_38, Pumancara\_38, Sergei\_38, Suppi\_40, Temper16\_38, Vulture\_38, Wayne\_40,

### Summary by start number:

Start 10:

- Found in 11 of 78 ( 14.1% ) of genes in pham
- Manual Annotations of this start: 11 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chridison\_37 (AK), Daiboju\_38 (AK), Herb\_38 (AK), HunterDalle\_38 (AK), KingBob\_38 (AK), Maria1952\_37 (AK), PinkFriday\_38 (AK), Pumancara\_38 (AK), Sergei\_38 (AK), Temper16\_38 (AK), Vulture\_38 (AK),

Start 11:

- Found in 7 of 78 ( 9.0% ) of genes in pham
- Manual Annotations of this start: 6 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AppleCider\_40 (AK), CallieOMalley\_40 (AK), Canowicakte\_40 (AK), Litotes\_40 (AK), PartyCup\_43 (AK), Suppi\_40 (AK), Wayne\_40 (AK),

Start 12:

- Found in 60 of 78 ( 76.9% ) of genes in pham
- Manual Annotations of this start: 60 of 77
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aledel\_38 (AK), AustinPowers\_38 (AK), Beethoven\_40 (AK), Bennie\_38 (AK), BigMack\_38 (AK), Bodacious\_38 (AK), BrotherBLo\_40 (AK), Carpal\_40 (AK), ChewChew\_38 (AK), Cholula\_40 (AK), Christian\_38 (AK), CristinaYang\_38 (AK), Dino\_41 (AK), DrRobert\_37 (AK),

DreamTeam\_38 (AK), EstebanJulior\_39 (AK), Eunoia\_38 (AK), Fluke\_41 (AK), Gisselle\_38 (AK), Glenn\_41 (AK), HeadNerd\_38 (AK), Huckleberry\_38 (AK), Huntingdon\_40 (AK), Immaculata\_40 (AK), Joann\_41 (AK), Jumboset\_41 (AK), Kalizoi\_40 (AK), Kittykat\_39 (AK), Korra\_40 (AK), Lasagna\_37 (AK), Lennox\_38 (AK), LilStuart\_38 (AK), Lucy\_38 (AK), Makoto\_38 (AK), MamaPearl\_39 (AK), MeganNoll\_40 (AK), Misaeng\_40 (AK), Moki\_38 (AK), MrGloopy\_41 (AK), Nancia\_38 (AK), OMalley\_38 (AK), OurGirlNessie\_37 (AK), PitaDog\_38 (AK), Potatoes\_40 (AK), Preamble\_38 (AK), Pterodactyl\_38 (AK), RAP15\_41 (AK), RcigaStruga\_40 (AK), Rivovina\_38 (AK), Riverdale\_41 (AK), Rozby\_40 (AK), Savage2526\_41 (AK), Scuttle\_40 (AK), Supakev\_38 (AK), TattModd\_39 (AK), Urla\_39 (AK), Vallejo\_41 (AK), Wawa\_40 (AK), WonderBoy\_37 (AK), Zorro\_41 (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 11 times for cluster AK.
- Start number 11 was manually annotated 6 times for cluster AK.
- Start number 12 was manually annotated 60 times for cluster AK.

### **Gene Information:**

Gene: Aledel\_38 Start: 27323, Stop: 27526, Start Num: 12

Candidate Starts for Aledel\_38:

(1, 27167), (Start: 12 @27323 has 60 MA's), (18, 27422), (19, 27425), (26, 27467),

Gene: AppleCider\_40 Start: 27372, Stop: 27545, Start Num: 11

Candidate Starts for AppleCider\_40:

(Start: 11 @27372 has 6 MA's), (17, 27468),

Gene: AustinPowers\_38 Start: 27321, Stop: 27524, Start Num: 12

Candidate Starts for AustinPowers\_38:

(1, 27165), (Start: 12 @27321 has 60 MA's), (18, 27420), (19, 27423), (26, 27465),

Gene: Beethoven\_40 Start: 27306, Stop: 27476, Start Num: 12

Candidate Starts for Beethoven\_40:

(Start: 12 @27306 has 60 MA's), (17, 27393), (21, 27417),

Gene: Bennie\_38 Start: 26117, Stop: 26287, Start Num: 12

Candidate Starts for Bennie\_38:

(6, 26060), (Start: 12 @26117 has 60 MA's), (17, 26204), (18, 26216), (21, 26228),

Gene: BigMack\_38 Start: 26217, Stop: 26387, Start Num: 12

Candidate Starts for BigMack\_38:

(2, 26076), (6, 26157), (Start: 12 @26217 has 60 MA's), (17, 26304), (21, 26328),

Gene: Bodacious\_38 Start: 26173, Stop: 26343, Start Num: 12

Candidate Starts for Bodacious\_38:

(Start: 12 @26173 has 60 MA's), (17, 26260),

Gene: BrotherBLo\_40 Start: 27338, Stop: 27508, Start Num: 12  
Candidate Starts for BrotherBLo\_40:  
(Start: 12 @27338 has 60 MA's), (17, 27425), (21, 27449),

Gene: CallieOMalley\_40 Start: 27372, Stop: 27545, Start Num: 11  
Candidate Starts for CallieOMalley\_40:  
(Start: 11 @27372 has 6 MA's), (17, 27468),

Gene: Canowicakte\_40 Start: 27407, Stop: 27580, Start Num: 11  
Candidate Starts for Canowicakte\_40:  
(Start: 11 @27407 has 6 MA's), (17, 27503),

Gene: Carpal\_40 Start: 27318, Stop: 27488, Start Num: 12  
Candidate Starts for Carpal\_40:  
(Start: 12 @27318 has 60 MA's), (17, 27405), (21, 27429),

Gene: ChewChew\_38 Start: 26165, Stop: 26335, Start Num: 12  
Candidate Starts for ChewChew\_38:  
(7, 26129), (Start: 12 @26165 has 60 MA's), (17, 26252),

Gene: Cholula\_40 Start: 27364, Stop: 27534, Start Num: 12  
Candidate Starts for Cholula\_40:  
(Start: 12 @27364 has 60 MA's), (17, 27451), (21, 27475),

Gene: Chridison\_37 Start: 27255, Stop: 27455, Start Num: 10  
Candidate Starts for Chridison\_37:  
(4, 27180), (8, 27237), (Start: 10 @27255 has 11 MA's), (14, 27291), (18, 27354), (21, 27366), (23, 27372), (25, 27390),

Gene: Christian\_38 Start: 26161, Stop: 26331, Start Num: 12  
Candidate Starts for Christian\_38:  
(5, 26080), (Start: 12 @26161 has 60 MA's), (17, 26248),

Gene: CristinaYang\_38 Start: 26161, Stop: 26331, Start Num: 12  
Candidate Starts for CristinaYang\_38:  
(7, 26125), (Start: 12 @26161 has 60 MA's), (17, 26248),

Gene: Daiboju\_38 Start: 27333, Stop: 27533, Start Num: 10  
Candidate Starts for Daiboju\_38:  
(Start: 10 @27333 has 11 MA's), (14, 27369), (20, 27438), (21, 27444), (25, 27468),

Gene: Dino\_41 Start: 27465, Stop: 27635, Start Num: 12  
Candidate Starts for Dino\_41:  
(8, 27444), (Start: 12 @27465 has 60 MA's), (17, 27552), (18, 27564), (21, 27576),

Gene: DrRobert\_37 Start: 25941, Stop: 26111, Start Num: 12  
Candidate Starts for DrRobert\_37:  
(7, 25905), (Start: 12 @25941 has 60 MA's), (17, 26028),

Gene: DreamTeam\_38 Start: 26271, Stop: 26441, Start Num: 12  
Candidate Starts for DreamTeam\_38:  
(3, 26172), (Start: 12 @26271 has 60 MA's), (17, 26358), (21, 26382),

Gene: EstebanJulior\_39 Start: 27319, Stop: 27489, Start Num: 12

Candidate Starts for EstebanJulior\_39:

(Start: 12 @27319 has 60 MA's), (17, 27406), (21, 27430),

Gene: Eunoia\_38 Start: 27323, Stop: 27526, Start Num: 12

Candidate Starts for Eunoia\_38:

(1, 27167), (Start: 12 @27323 has 60 MA's), (18, 27422), (19, 27425), (26, 27467),

Gene: Fluke\_41 Start: 27581, Stop: 27751, Start Num: 12

Candidate Starts for Fluke\_41:

(Start: 12 @27581 has 60 MA's), (17, 27668), (18, 27680), (21, 27692),

Gene: Gisselle\_38 Start: 26271, Stop: 26441, Start Num: 12

Candidate Starts for Gisselle\_38:

(3, 26172), (Start: 12 @26271 has 60 MA's), (17, 26358), (21, 26382),

Gene: Glenn\_41 Start: 27572, Stop: 27742, Start Num: 12

Candidate Starts for Glenn\_41:

(Start: 12 @27572 has 60 MA's), (17, 27659), (21, 27683),

Gene: HeadNerd\_38 Start: 26117, Stop: 26287, Start Num: 12

Candidate Starts for HeadNerd\_38:

(6, 26060), (Start: 12 @26117 has 60 MA's), (17, 26204), (21, 26228),

Gene: Herb\_38 Start: 27332, Stop: 27532, Start Num: 10

Candidate Starts for Herb\_38:

(Start: 10 @27332 has 11 MA's), (14, 27368), (20, 27437), (21, 27443), (25, 27467),

Gene: Huckleberry\_38 Start: 26100, Stop: 26270, Start Num: 12

Candidate Starts for Huckleberry\_38:

(6, 26043), (Start: 12 @26100 has 60 MA's), (17, 26187), (18, 26199), (21, 26211),

Gene: HunterDalle\_38 Start: 27254, Stop: 27454, Start Num: 10

Candidate Starts for HunterDalle\_38:

(4, 27179), (8, 27236), (Start: 10 @27254 has 11 MA's), (14, 27290), (18, 27353), (21, 27365), (23, 27371), (25, 27389),

Gene: Huntingdon\_40 Start: 27733, Stop: 27915, Start Num: 12

Candidate Starts for Huntingdon\_40:

(9, 27718), (Start: 12 @27733 has 60 MA's), (16, 27817), (18, 27832), (21, 27844), (22, 27847),

Gene: Immaculata\_40 Start: 27363, Stop: 27533, Start Num: 12

Candidate Starts for Immaculata\_40:

(Start: 12 @27363 has 60 MA's), (17, 27450), (21, 27474),

Gene: Joann\_41 Start: 27983, Stop: 28165, Start Num: 12

Candidate Starts for Joann\_41:

(Start: 12 @27983 has 60 MA's), (16, 28067), (18, 28082), (21, 28094), (22, 28097),

Gene: Jumboset\_41 Start: 27480, Stop: 27650, Start Num: 12

Candidate Starts for Jumboset\_41:

(Start: 12 @27480 has 60 MA's), (15, 27555), (17, 27567), (21, 27591),

Gene: Kalizoi\_40 Start: 27305, Stop: 27475, Start Num: 12  
Candidate Starts for Kalizoi\_40:  
(Start: 12 @27305 has 60 MA's), (17, 27392), (21, 27416),

Gene: KingBob\_38 Start: 27333, Stop: 27533, Start Num: 10  
Candidate Starts for KingBob\_38:  
(Start: 10 @27333 has 11 MA's), (14, 27369), (20, 27438), (21, 27444), (25, 27468),

Gene: Kittykat\_39 Start: 26362, Stop: 26532, Start Num: 12  
Candidate Starts for Kittykat\_39:  
(6, 26302), (Start: 12 @26362 has 60 MA's), (17, 26449), (21, 26473),

Gene: Korra\_40 Start: 27317, Stop: 27487, Start Num: 12  
Candidate Starts for Korra\_40:  
(Start: 12 @27317 has 60 MA's), (17, 27404), (18, 27416), (21, 27428),

Gene: Lasagna\_37 Start: 25938, Stop: 26108, Start Num: 12  
Candidate Starts for Lasagna\_37:  
(Start: 12 @25938 has 60 MA's), (17, 26025), (21, 26049),

Gene: Lennox\_38 Start: 26146, Stop: 26316, Start Num: 12  
Candidate Starts for Lennox\_38:  
(7, 26110), (Start: 12 @26146 has 60 MA's), (17, 26233),

Gene: LilStuart\_38 Start: 26149, Stop: 26319, Start Num: 12  
Candidate Starts for LilStuart\_38:  
(7, 26113), (Start: 12 @26149 has 60 MA's), (17, 26236),

Gene: Litotes\_40 Start: 27360, Stop: 27533, Start Num: 11  
Candidate Starts for Litotes\_40:  
(Start: 11 @27360 has 6 MA's), (17, 27456),

Gene: Lucy\_38 Start: 26146, Stop: 26316, Start Num: 12  
Candidate Starts for Lucy\_38:  
(Start: 12 @26146 has 60 MA's), (17, 26233), (21, 26257),

Gene: Makoto\_38 Start: 26157, Stop: 26327, Start Num: 12  
Candidate Starts for Makoto\_38:  
(7, 26121), (Start: 12 @26157 has 60 MA's), (17, 26244),

Gene: MamaPearl\_39 Start: 27319, Stop: 27489, Start Num: 12  
Candidate Starts for MamaPearl\_39:  
(Start: 12 @27319 has 60 MA's), (17, 27406), (21, 27430),

Gene: Maria1952\_37 Start: 27332, Stop: 27532, Start Num: 10  
Candidate Starts for Maria1952\_37:  
(Start: 10 @27332 has 11 MA's), (14, 27368), (20, 27437), (21, 27443), (25, 27467),

Gene: MeganNoll\_40 Start: 27537, Stop: 27707, Start Num: 12  
Candidate Starts for MeganNoll\_40:  
(8, 27516), (Start: 12 @27537 has 60 MA's), (17, 27624), (18, 27636), (21, 27648),

Gene: Misaeng\_40 Start: 27966, Stop: 28148, Start Num: 12

Candidate Starts for Misaeng\_40:

(9, 27951), (Start: 12 @27966 has 60 MA's), (16, 28050), (18, 28065), (21, 28077), (22, 28080),

Gene: Moki\_38 Start: 26262, Stop: 26432, Start Num: 12

Candidate Starts for Moki\_38:

(6, 26205), (Start: 12 @26262 has 60 MA's), (17, 26349), (21, 26373),

Gene: MrGloopy\_41 Start: 27466, Stop: 27636, Start Num: 12

Candidate Starts for MrGloopy\_41:

(Start: 12 @27466 has 60 MA's), (17, 27553), (21, 27577),

Gene: Nancia\_38 Start: 26173, Stop: 26343, Start Num: 12

Candidate Starts for Nancia\_38:

(Start: 12 @26173 has 60 MA's), (17, 26260),

Gene: OMalley\_38 Start: 27323, Stop: 27526, Start Num: 12

Candidate Starts for OMalley\_38:

(1, 27167), (Start: 12 @27323 has 60 MA's), (18, 27422), (19, 27425), (26, 27467),

Gene: OurGirlNessie\_37 Start: 25901, Stop: 26071, Start Num: 12

Candidate Starts for OurGirlNessie\_37:

(Start: 12 @25901 has 60 MA's), (17, 25988), (21, 26012),

Gene: PartyCup\_43 Start: 27586, Stop: 27759, Start Num: 11

Candidate Starts for PartyCup\_43:

(Start: 11 @27586 has 6 MA's), (17, 27682),

Gene: PinkFriday\_38 Start: 26442, Stop: 26642, Start Num: 10

Candidate Starts for PinkFriday\_38:

(Start: 10 @26442 has 11 MA's), (13, 26469), (14, 26478), (18, 26541), (20, 26547), (21, 26553), (24, 26574),

Gene: PitaDog\_38 Start: 26158, Stop: 26328, Start Num: 12

Candidate Starts for PitaDog\_38:

(Start: 12 @26158 has 60 MA's), (17, 26245), (21, 26269),

Gene: Potatoes\_40 Start: 27364, Stop: 27534, Start Num: 12

Candidate Starts for Potatoes\_40:

(Start: 12 @27364 has 60 MA's), (17, 27451), (21, 27475),

Gene: Preamble\_38 Start: 26228, Stop: 26398, Start Num: 12

Candidate Starts for Preamble\_38:

(6, 26168), (7, 26189), (Start: 12 @26228 has 60 MA's), (17, 26315), (21, 26339),

Gene: Pterodactyl\_38 Start: 26138, Stop: 26308, Start Num: 12

Candidate Starts for Pterodactyl\_38:

(5, 26060), (Start: 12 @26138 has 60 MA's), (17, 26225),

Gene: Pumancara\_38 Start: 26354, Stop: 26554, Start Num: 10

Candidate Starts for Pumancara\_38:

(Start: 10 @26354 has 11 MA's), (13, 26381), (14, 26390), (18, 26453), (20, 26459), (21, 26465), (24, 26486),



Gene: RAP15\_41 Start: 27537, Stop: 27707, Start Num: 12

Candidate Starts for RAP15\_41:

(8, 27516), (Start: 12 @27537 has 60 MA's), (17, 27624), (18, 27636), (21, 27648),

Gene: RcigaStruga\_40 Start: 27733, Stop: 27915, Start Num: 12

Candidate Starts for RcigaStruga\_40:

(9, 27718), (Start: 12 @27733 has 60 MA's), (16, 27817), (18, 27832), (21, 27844), (22, 27847),

Gene: Riovina\_38 Start: 27323, Stop: 27526, Start Num: 12

Candidate Starts for Riovina\_38:

(1, 27167), (Start: 12 @27323 has 60 MA's), (18, 27422), (19, 27425), (26, 27467),

Gene: Riverdale\_41 Start: 27502, Stop: 27672, Start Num: 12

Candidate Starts for Riverdale\_41:

(Start: 12 @27502 has 60 MA's), (17, 27589), (21, 27613),

Gene: Rozby\_40 Start: 27294, Stop: 27464, Start Num: 12

Candidate Starts for Rozby\_40:

(Start: 12 @27294 has 60 MA's), (17, 27381), (21, 27405),

Gene: Savage2526\_41 Start: 27531, Stop: 27701, Start Num: 12

Candidate Starts for Savage2526\_41:

(Start: 12 @27531 has 60 MA's), (17, 27618), (21, 27642),

Gene: Scuttle\_40 Start: 27491, Stop: 27661, Start Num: 12

Candidate Starts for Scuttle\_40:

(Start: 12 @27491 has 60 MA's), (17, 27578), (18, 27590), (21, 27602),

Gene: Sergei\_38 Start: 27333, Stop: 27533, Start Num: 10

Candidate Starts for Sergei\_38:

(Start: 10 @27333 has 11 MA's), (14, 27369), (20, 27438), (21, 27444), (25, 27468),

Gene: Supakev\_38 Start: 27323, Stop: 27526, Start Num: 12

Candidate Starts for Supakev\_38:

(1, 27167), (Start: 12 @27323 has 60 MA's), (18, 27422), (19, 27425), (26, 27467),

Gene: Suppi\_40 Start: 27407, Stop: 27580, Start Num: 11

Candidate Starts for Suppi\_40:

(Start: 11 @27407 has 6 MA's), (17, 27503),

Gene: TattModd\_39 Start: 27151, Stop: 27321, Start Num: 12

Candidate Starts for TattModd\_39:

(Start: 12 @27151 has 60 MA's), (17, 27238), (21, 27262),

Gene: Temper16\_38 Start: 27333, Stop: 27533, Start Num: 10

Candidate Starts for Temper16\_38:

(Start: 10 @27333 has 11 MA's), (14, 27369), (20, 27438), (21, 27444), (25, 27468),

Gene: Urla\_39 Start: 27312, Stop: 27482, Start Num: 12

Candidate Starts for Urla\_39:

(Start: 12 @27312 has 60 MA's), (17, 27399), (21, 27423),

Gene: Vallejo\_41 Start: 27505, Stop: 27675, Start Num: 12

Candidate Starts for Vallejo\_41:  
(Start: 12 @27505 has 60 MA's), (17, 27592), (21, 27616),

Gene: Vulture\_38 Start: 27254, Stop: 27454, Start Num: 10  
Candidate Starts for Vulture\_38:  
(4, 27179), (8, 27236), (Start: 10 @27254 has 11 MA's), (14, 27290), (18, 27353), (21, 27365), (23, 27371), (25, 27389),

Gene: Wawa\_40 Start: 27338, Stop: 27508, Start Num: 12  
Candidate Starts for Wawa\_40:  
(Start: 12 @27338 has 60 MA's), (17, 27425), (18, 27437), (21, 27449),

Gene: Wayne\_40 Start: 27453, Stop: 27626, Start Num: 11  
Candidate Starts for Wayne\_40:  
(Start: 11 @27453 has 6 MA's), (17, 27549),

Gene: WonderBoy\_37 Start: 26133, Stop: 26303, Start Num: 12  
Candidate Starts for WonderBoy\_37:  
(Start: 12 @26133 has 60 MA's), (17, 26220), (21, 26244),

Gene: Zorro\_41 Start: 27465, Stop: 27635, Start Num: 12  
Candidate Starts for Zorro\_41:  
(8, 27444), (Start: 12 @27465 has 60 MA's), (17, 27552), (18, 27564), (21, 27576),