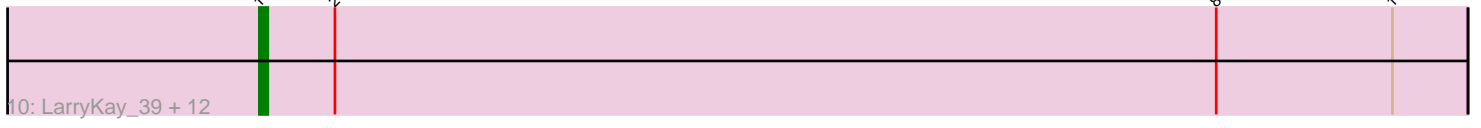
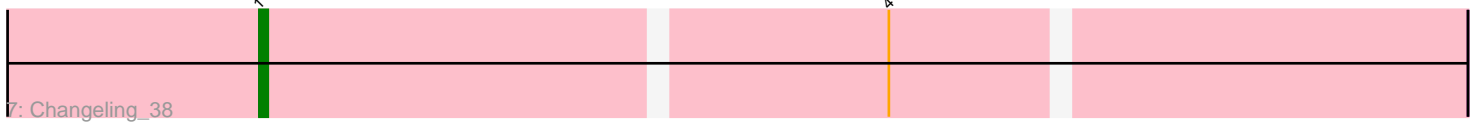
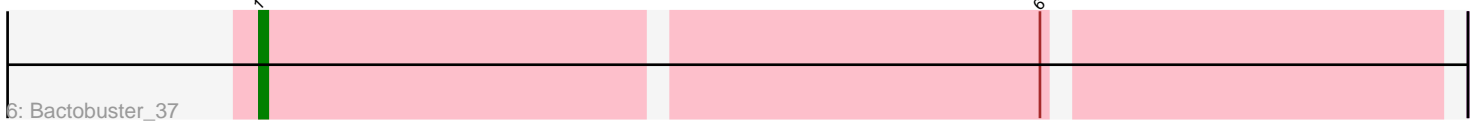
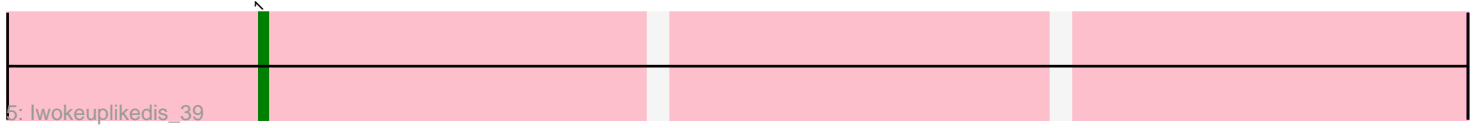
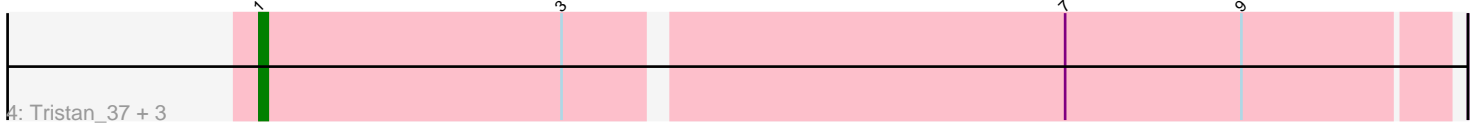
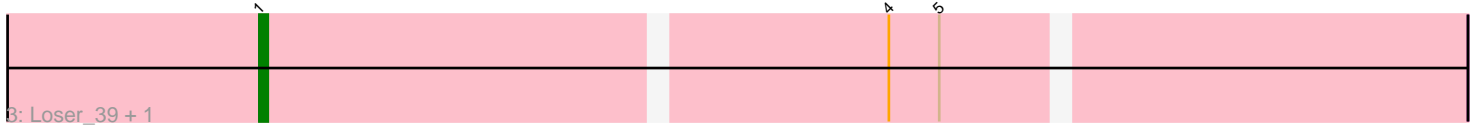
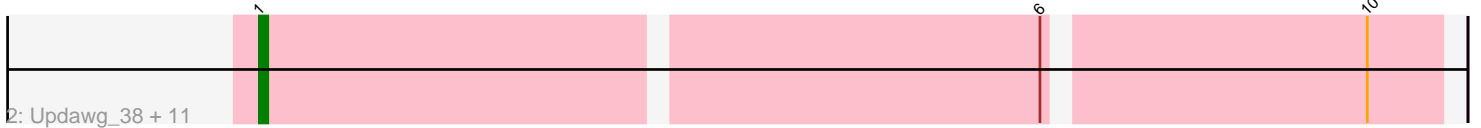
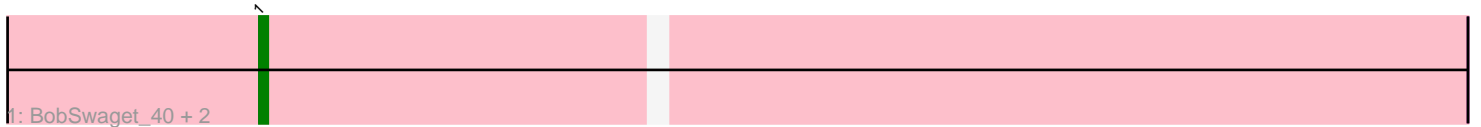


Pham 311392



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 311392 Report

This analysis was run 06/27/26 on database version 652.

Pham number 311392 has 114 members, 9 are drafts.

Phages represented in each track:

- Track 1 : BobSwaget\_40, Rachaly\_41, Lokk\_41
- Track 2 : Updawg\_38, Gratitude\_37, Terrific\_40, Equemioh13\_38, Sknot\_37, NaSiaTalie\_37, Drake55\_39, Buggy\_39, MiculUcigas\_37, Flare16\_37, Centaur\_38, WideWale\_38
- Track 3 : Loser\_39, AnnaL29\_39
- Track 4 : Tristan\_37, Jaan\_39, Landor\_37, Phaded\_40
- Track 5 : Iwokeuplikedis\_39
- Track 6 : Bactobuster\_37
- Track 7 : Changeling\_38
- Track 8 : EpicPhail\_40, Vix\_40, Snickers\_40, Microwolf\_40, Taurus\_40, Dieselweasel\_40, Watson\_40, LBerry\_40, StepMih\_40, MadMarie\_40, PGHhamlin\_42, Iowa\_40, PotatoSplit\_41, Montavir\_39, MuchMore\_42, Croquant\_41, Bigflo\_40, Farber\_40, Malinsilva\_42, MarQuardt\_40, Tiffany\_40, Colbster\_40, Anubis\_42, DaHudson\_40, BreSam8\_40, Phoebe\_40, Grum1\_40, AugsMagnumOpus\_42, Jobu08\_39, Gwennie\_39, Zetzy\_39, LugYA\_42, JenCasNa\_40, GingkoMaracino\_40, SoYo\_40, Mainiac\_40, Grub\_40, Wooldri\_42, Ollie\_40, Pembroke\_40, Cullens\_40, SoilDragon\_39, MoneyMay\_40, GtownJaz\_40, Beauxregard13\_40, Grif\_40, Marie\_40, Aglet\_40, Sabinator\_39, Stagni\_40, Fernando\_40, Sabia\_40, Hercules11\_40, Lilith\_40, Penny1\_40
- Track 9 : Marius\_40, ClownCar\_40, Reba\_40, Kalb97\_40, Phranny\_40, Calvinny\_40, ACFishhook\_39, Heliosoles\_39, PurpleHaze\_39, Manu\_40, JeppNRM\_40, Gemma\_39, HaveUMetTed\_40, Pawn\_39, Groupthink\_40, PhishRPhriends\_38, Kalnoky\_40, OlanP\_39
- Track 10 : LarryKay\_39, TinyPebbles\_39, BuzzBuzz\_38, Misomonster\_41, KADY\_40, Spike509\_39, Daishi\_38, Methuselah\_38, Phoxy\_39, Soshari\_41, HashRod\_40, Louie6\_39, AgronaGT15\_39
- Track 11 : Rummer\_39, Bxz2\_37
- Track 12 : P28Green\_40, JHC117\_40

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

The start number called the most often in the published annotations is 1, it was called in 101 of the 105 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ACFishhook\_39, Aglet\_40, AgronaGT15\_39, AnnaL29\_39, Anubis\_42, AugsMagnumOpus\_42, Bactobuster\_37, Beauxregard13\_40, Bigflo\_40, BobSwaget\_40, BreSam8\_40, Buggy\_39, BuzzBuzz\_38, Calvinny\_40, Centaur\_38, Changeling\_38, ClownCar\_40, Colbster\_40, Croquant\_41, Cullens\_40, DaHudson\_40, Daishi\_38, Dieselweasel\_40, Drake55\_39, EpicPhail\_40, Equemioh13\_38, Farber\_40, Fernando\_40, Flare16\_37, Gemma\_39, GingkoMaracino\_40, Gratitude\_37, Grif\_40, Groupthink\_40, Grub\_40, Grum1\_40, GtownJaz\_40, Gwennie\_39, HashRod\_40, HaveUMetTed\_40, Heliosoles\_39, Hercules11\_40, Iwokeuplikedis\_39, Jaan\_39, JenCasNa\_40, JeppNRM\_40, Jobu08\_39, KADY\_40, Kalb97\_40, Kalnoky\_40, LBerry\_40, Landor\_37, LarryKay\_39, Lilith\_40, Lokk\_41, Loser\_39, Louie6\_39, Iowa\_40, LugYA\_42, MadMarie\_40, Mainiac\_40, Malinsilva\_42, Manu\_40, MarQuardt\_40, Marie\_40, Marius\_40, Methuselah\_38, Microwolf\_40, MiculUcigas\_37, Misomonster\_41, MoneyMay\_40, Montavir\_39, MuchMore\_42, NaSiaTalie\_37, OlanP\_39, Ollie\_40, PGHhamlin\_42, Pawn\_39, Pembroke\_40, Penny1\_40, Phaded\_40, PhishRPhriends\_38, Phoebe\_40, Phoxy\_39, Phranny\_40, PotatoSplit\_41, PurpleHaze\_39, Rachaly\_41, Reba\_40, Sabia\_40, Sabinator\_39, Sknot\_37, Snickers\_40, SoYo\_40, SoilDragon\_39, Soshari\_41, Spike509\_39, Stagni\_40, StepMih\_40, Taurus\_40, Terrific\_40, Tiffany\_40, TinyPebbles\_39, Tristan\_37, Updawg\_38, Vix\_40, Watson\_40, WideWale\_38, Wooldri\_42, Zetzy\_39,

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

- Bxz2\_37, JHC117\_40, P28Green\_40, Rummer\_39,

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

- 

### Summary by start number:

Start 1:

- Found in 114 of 114 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 101 of 105
- Called 96.5% of time when present
- Phage (with cluster) where this start called: ACFishhook\_39 (A3), Aglet\_40 (A3), AgronaGT15\_39 (A3), AnnaL29\_39 (A2), Anubis\_42 (A3), AugsMagnumOpus\_42 (A3), Bactobuster\_37 (A2), Beauxregard13\_40 (A3), Bigflo\_40 (A3), BobSwaget\_40 (A2), BreSam8\_40 (A3), Buggy\_39 (A2), BuzzBuzz\_38 (A3), Calvinny\_40 (A3), Centaur\_38 (A2), Changeling\_38 (A2), ClownCar\_40 (A3), Colbster\_40 (A3), Croquant\_41 (A3), Cullens\_40 (A3), DaHudson\_40 (A3), Daishi\_38 (A3), Dieselweasel\_40 (A3), Drake55\_39 (A2), EpicPhail\_40 (A3), Equemioh13\_38 (A2), Farber\_40 (A3), Fernando\_40 (A3), Flare16\_37 (A2), Gemma\_39 (A3), GingkoMaracino\_40 (A3), Gratitude\_37 (A2), Grif\_40 (A3), Groupthink\_40 (A3), Grub\_40 (A3), Grum1\_40 (A3), GtownJaz\_40 (A3), Gwennie\_39 (A3), HashRod\_40 (A3), HaveUMetTed\_40 (A3), Heliosoles\_39 (A3), Hercules11\_40 (A3), Iwokeuplikedis\_39 (A2), Jaan\_39 (A2), JenCasNa\_40 (A3), JeppNRM\_40 (A3), Jobu08\_39 (A3), KADY\_40 (A3), Kalb97\_40 (A3), Kalnoky\_40 (A3), LBerry\_40 (A3), Landor\_37 (A2), LarryKay\_39 (A3), Lilith\_40 (A3), Lokk\_41 (A2), Loser\_39 (A2), Louie6\_39 (A3), Iowa\_40 (A3), LugYA\_42 (A3), MadMarie\_40 (A3), Mainiac\_40 (A3), Malinsilva\_42 (A3), Manu\_40 (A3), MarQuardt\_40 (A3), Marie\_40 (A3), Marius\_40 (A3), Methuselah\_38 (A3), Microwolf\_40 (A3), MiculUcigas\_37 (A2), Misomonster\_41 (A3), MoneyMay\_40 (A3), Montavir\_39 (A3), MuchMore\_42 (A3), NaSiaTalie\_37 (A2), OlanP\_39 (A3), Ollie\_40 (A3), PGHhamlin\_42 (A3), Pawn\_39 (A3), Pembroke\_40

(A3), Penny1\_40 (A3), Phaded\_40 (A2), PhishRPhriends\_38 (A3), Phoebe\_40 (A3), Phoxy\_39 (A3), Phranny\_40 (A3), PotatoSplit\_41 (A3), PurpleHaze\_39 (A3), Rachaly\_41 (A2), Reba\_40 (A3), Sabia\_40 (A3), Sabinator\_39 (A3), Sknot\_37 (A2), Snickers\_40 (A3), SoYo\_40 (A3), SoilDragon\_39 (A3), Soshari\_41 (A3), Spike509\_39 (A3), Stagni\_40 (A3), StepMih\_40 (A3), Taurus\_40 (A3), Terrific\_40 (A2), Tiffany\_40 (A3), TinyPebbles\_39 (A3), Tristan\_37 (A2), Updawg\_38 (A2), Vix\_40 (A3), Watson\_40 (A3), WideWale\_38 (A2), Wooldri\_42 (A3), Zetzy\_39 (A3),

Start 2:

- Found in 90 of 114 ( 78.9% ) of genes in pham
- Manual Annotations of this start: 4 of 105
- Called 4.4% of time when present
- Phage (with cluster) where this start called: Bxz2\_37 (A3), JHC117\_40 (A3), P28Green\_40 (A3), Rummer\_39 (A3),

### Summary by clusters:

There are 2 clusters represented in this pham: A3, A2,

Info for manual annotations of cluster A2:

- Start number 1 was manually annotated 22 times for cluster A2.

Info for manual annotations of cluster A3:

- Start number 1 was manually annotated 79 times for cluster A3.
- Start number 2 was manually annotated 4 times for cluster A3.

### Gene Information:

Gene: ACFishhook\_39 Start: 28092, Stop: 27949, Start Num: 1

Candidate Starts for ACFishhook\_39:

(Start: 1 @28092 has 101 MA's), (Start: 2 @28083 has 4 MA's), (4, 28017), (11, 27957), (12, 27954),

Gene: Aglet\_40 Start: 28193, Stop: 28050, Start Num: 1

Candidate Starts for Aglet\_40:

(Start: 1 @28193 has 101 MA's), (Start: 2 @28184 has 4 MA's), (4, 28118), (7, 28097), (8, 28079), (11, 28058),

Gene: AgronaGT15\_39 Start: 28011, Stop: 27868, Start Num: 1

Candidate Starts for AgronaGT15\_39:

(Start: 1 @28011 has 101 MA's), (Start: 2 @28002 has 4 MA's), (8, 27897), (11, 27876),

Gene: AnnaL29\_39 Start: 28926, Stop: 28789, Start Num: 1

Candidate Starts for AnnaL29\_39:

(Start: 1 @28926 has 101 MA's), (4, 28854), (5, 28848),

Gene: Anubis\_42 Start: 28078, Stop: 27935, Start Num: 1

Candidate Starts for Anubis\_42:

(Start: 1 @28078 has 101 MA's), (Start: 2 @28069 has 4 MA's), (4, 28003), (7, 27982), (8, 27964), (11, 27943),

Gene: AugsMagnumOpus\_42 Start: 28184, Stop: 28041, Start Num: 1

Candidate Starts for AugsMagnumOpus\_42:

(Start: 1 @28184 has 101 MA's), (Start: 2 @28175 has 4 MA's), (4, 28109), (7, 28088), (8, 28070), (11, 28049),

Gene: Bactobuster\_37 Start: 29055, Stop: 28921, Start Num: 1

Candidate Starts for Bactobuster\_37:

(Start: 1 @29055 has 101 MA's), (6, 28965),

Gene: Beauxregard13\_40 Start: 28192, Stop: 28049, Start Num: 1

Candidate Starts for Beauxregard13\_40:

(Start: 1 @28192 has 101 MA's), (Start: 2 @28183 has 4 MA's), (4, 28117), (7, 28096), (8, 28078), (11, 28057),

Gene: Bigflo\_40 Start: 28191, Stop: 28048, Start Num: 1

Candidate Starts for Bigflo\_40:

(Start: 1 @28191 has 101 MA's), (Start: 2 @28182 has 4 MA's), (4, 28116), (7, 28095), (8, 28077), (11, 28056),

Gene: BobSwaget\_40 Start: 28764, Stop: 28624, Start Num: 1

Candidate Starts for BobSwaget\_40:

(Start: 1 @28764 has 101 MA's),

Gene: BreSam8\_40 Start: 28185, Stop: 28042, Start Num: 1

Candidate Starts for BreSam8\_40:

(Start: 1 @28185 has 101 MA's), (Start: 2 @28176 has 4 MA's), (4, 28110), (7, 28089), (8, 28071), (11, 28050),

Gene: Buggy\_39 Start: 28476, Stop: 28342, Start Num: 1

Candidate Starts for Buggy\_39:

(Start: 1 @28476 has 101 MA's), (6, 28386), (10, 28350),

Gene: BuzzBuzz\_38 Start: 28190, Stop: 28047, Start Num: 1

Candidate Starts for BuzzBuzz\_38:

(Start: 1 @28190 has 101 MA's), (Start: 2 @28181 has 4 MA's), (8, 28076), (11, 28055),

Gene: Bxz2\_37 Start: 28188, Stop: 28054, Start Num: 2

Candidate Starts for Bxz2\_37:

(Start: 1 @28197 has 101 MA's), (Start: 2 @28188 has 4 MA's), (8, 28083), (11, 28062),

Gene: Calvinny\_40 Start: 28017, Stop: 27874, Start Num: 1

Candidate Starts for Calvinny\_40:

(Start: 1 @28017 has 101 MA's), (Start: 2 @28008 has 4 MA's), (4, 27942), (11, 27882), (12, 27879),

Gene: Centaur\_38 Start: 28309, Stop: 28175, Start Num: 1

Candidate Starts for Centaur\_38:

(Start: 1 @28309 has 101 MA's), (6, 28219), (10, 28183),

Gene: Changeling\_38 Start: 28875, Stop: 28738, Start Num: 1

Candidate Starts for Changeling\_38:

(Start: 1 @28875 has 101 MA's), (4, 28803),

Gene: ClownCar\_40 Start: 28009, Stop: 27866, Start Num: 1

Candidate Starts for ClownCar\_40:

(Start: 1 @28009 has 101 MA's), (Start: 2 @28000 has 4 MA's), (4, 27934), (11, 27874), (12, 27871),

Gene: Colbster\_40 Start: 28192, Stop: 28049, Start Num: 1

Candidate Starts for Colbster\_40:

(Start: 1 @28192 has 101 MA's), (Start: 2 @28183 has 4 MA's), (4, 28117), (7, 28096), (8, 28078), (11, 28057),

Gene: Croquant\_41 Start: 28190, Stop: 28047, Start Num: 1

Candidate Starts for Croquant\_41:

(Start: 1 @28190 has 101 MA's), (Start: 2 @28181 has 4 MA's), (4, 28115), (7, 28094), (8, 28076), (11, 28055),

Gene: Cullens\_40 Start: 28191, Stop: 28048, Start Num: 1

Candidate Starts for Cullens\_40:

(Start: 1 @28191 has 101 MA's), (Start: 2 @28182 has 4 MA's), (4, 28116), (7, 28095), (8, 28077), (11, 28056),

Gene: DaHudson\_40 Start: 28184, Stop: 28041, Start Num: 1

Candidate Starts for DaHudson\_40:

(Start: 1 @28184 has 101 MA's), (Start: 2 @28175 has 4 MA's), (4, 28109), (7, 28088), (8, 28070), (11, 28049),

Gene: Daishi\_38 Start: 27031, Stop: 26888, Start Num: 1

Candidate Starts for Daishi\_38:

(Start: 1 @27031 has 101 MA's), (Start: 2 @27022 has 4 MA's), (8, 26917), (11, 26896),

Gene: Dieselweasel\_40 Start: 28194, Stop: 28051, Start Num: 1

Candidate Starts for Dieselweasel\_40:

(Start: 1 @28194 has 101 MA's), (Start: 2 @28185 has 4 MA's), (4, 28119), (7, 28098), (8, 28080), (11, 28059),

Gene: Drake55\_39 Start: 28372, Stop: 28238, Start Num: 1

Candidate Starts for Drake55\_39:

(Start: 1 @28372 has 101 MA's), (6, 28282), (10, 28246),

Gene: EpicPhail\_40 Start: 28192, Stop: 28049, Start Num: 1

Candidate Starts for EpicPhail\_40:

(Start: 1 @28192 has 101 MA's), (Start: 2 @28183 has 4 MA's), (4, 28117), (7, 28096), (8, 28078), (11, 28057),

Gene: Equemioh13\_38 Start: 28312, Stop: 28178, Start Num: 1

Candidate Starts for Equemioh13\_38:

(Start: 1 @28312 has 101 MA's), (6, 28222), (10, 28186),

Gene: Farber\_40 Start: 28185, Stop: 28042, Start Num: 1

Candidate Starts for Farber\_40:

(Start: 1 @28185 has 101 MA's), (Start: 2 @28176 has 4 MA's), (4, 28110), (7, 28089), (8, 28071), (11, 28050),

Gene: Fernando\_40 Start: 28191, Stop: 28048, Start Num: 1

Candidate Starts for Fernando\_40:

(Start: 1 @28191 has 101 MA's), (Start: 2 @28182 has 4 MA's), (4, 28116), (7, 28095), (8, 28077), (11, 28056),

Gene: Flare16\_37 Start: 27984, Stop: 27850, Start Num: 1

Candidate Starts for Flare16\_37:

(Start: 1 @27984 has 101 MA's), (6, 27894), (10, 27858),

Gene: Gemma\_39 Start: 28013, Stop: 27870, Start Num: 1

Candidate Starts for Gemma\_39:

(Start: 1 @28013 has 101 MA's), (Start: 2 @28004 has 4 MA's), (4, 27938), (11, 27878), (12, 27875),

Gene: GingkoMaracino\_40 Start: 28078, Stop: 27935, Start Num: 1

Candidate Starts for GingkoMaracino\_40:

(Start: 1 @28078 has 101 MA's), (Start: 2 @28069 has 4 MA's), (4, 28003), (7, 27982), (8, 27964), (11, 27943),

Gene: Gratitude\_37 Start: 28312, Stop: 28178, Start Num: 1

Candidate Starts for Gratitude\_37:

(Start: 1 @28312 has 101 MA's), (6, 28222), (10, 28186),

Gene: Grif\_40 Start: 28266, Stop: 28123, Start Num: 1

Candidate Starts for Grif\_40:

(Start: 1 @28266 has 101 MA's), (Start: 2 @28257 has 4 MA's), (4, 28191), (7, 28170), (8, 28152), (11, 28131),

Gene: Groupthink\_40 Start: 28017, Stop: 27874, Start Num: 1

Candidate Starts for Groupthink\_40:

(Start: 1 @28017 has 101 MA's), (Start: 2 @28008 has 4 MA's), (4, 27942), (11, 27882), (12, 27879),

Gene: Grub\_40 Start: 28184, Stop: 28041, Start Num: 1

Candidate Starts for Grub\_40:

(Start: 1 @28184 has 101 MA's), (Start: 2 @28175 has 4 MA's), (4, 28109), (7, 28088), (8, 28070), (11, 28049),

Gene: Grum1\_40 Start: 28191, Stop: 28048, Start Num: 1

Candidate Starts for Grum1\_40:

(Start: 1 @28191 has 101 MA's), (Start: 2 @28182 has 4 MA's), (4, 28116), (7, 28095), (8, 28077), (11, 28056),

Gene: GtownJaz\_40 Start: 28193, Stop: 28050, Start Num: 1

Candidate Starts for GtownJaz\_40:

(Start: 1 @28193 has 101 MA's), (Start: 2 @28184 has 4 MA's), (4, 28118), (7, 28097), (8, 28079), (11, 28058),

Gene: Gwennie\_39 Start: 28192, Stop: 28049, Start Num: 1

Candidate Starts for Gwennie\_39:

(Start: 1 @28192 has 101 MA's), (Start: 2 @28183 has 4 MA's), (4, 28117), (7, 28096), (8, 28078), (11, 28057),

Gene: HashRod\_40 Start: 28190, Stop: 28047, Start Num: 1

Candidate Starts for HashRod\_40:

(Start: 1 @28190 has 101 MA's), (Start: 2 @28181 has 4 MA's), (8, 28076), (11, 28055),

Gene: HaveUMetTed\_40 Start: 28010, Stop: 27867, Start Num: 1

Candidate Starts for HaveUMetTed\_40:

(Start: 1 @28010 has 101 MA's), (Start: 2 @28001 has 4 MA's), (4, 27935), (11, 27875), (12, 27872),

Gene: Heliosoles\_39 Start: 28017, Stop: 27874, Start Num: 1

Candidate Starts for Heliosoles\_39:

(Start: 1 @28017 has 101 MA's), (Start: 2 @28008 has 4 MA's), (4, 27942), (11, 27882), (12, 27879),

Gene: Hercules11\_40 Start: 28200, Stop: 28057, Start Num: 1

Candidate Starts for Hercules11\_40:

(Start: 1 @28200 has 101 MA's), (Start: 2 @28191 has 4 MA's), (4, 28125), (7, 28104), (8, 28086), (11, 28065),

Gene: Iwokeuplikedis\_39 Start: 27855, Stop: 27718, Start Num: 1

Candidate Starts for Iwokeuplikedis\_39:

(Start: 1 @27855 has 101 MA's),

Gene: JHC117\_40 Start: 28181, Stop: 28047, Start Num: 2

Candidate Starts for JHC117\_40:

(Start: 1 @28190 has 101 MA's), (Start: 2 @28181 has 4 MA's), (4, 28115), (7, 28094), (8, 28076), (11, 28055),

Gene: Jaan\_39 Start: 29536, Stop: 29399, Start Num: 1

Candidate Starts for Jaan\_39:

(Start: 1 @29536 has 101 MA's), (3, 29500), (7, 29443), (9, 29422),

Gene: JenCasNa\_40 Start: 28191, Stop: 28048, Start Num: 1

Candidate Starts for JenCasNa\_40:

(Start: 1 @28191 has 101 MA's), (Start: 2 @28182 has 4 MA's), (4, 28116), (7, 28095), (8, 28077), (11, 28056),

Gene: JeppNRM\_40 Start: 28015, Stop: 27872, Start Num: 1

Candidate Starts for JeppNRM\_40:

(Start: 1 @28015 has 101 MA's), (Start: 2 @28006 has 4 MA's), (4, 27940), (11, 27880), (12, 27877),

Gene: Jobu08\_39 Start: 28021, Stop: 27878, Start Num: 1

Candidate Starts for Jobu08\_39:

(Start: 1 @28021 has 101 MA's), (Start: 2 @28012 has 4 MA's), (4, 27946), (7, 27925), (8, 27907), (11, 27886),

Gene: KADY\_40 Start: 28190, Stop: 28047, Start Num: 1

Candidate Starts for KADY\_40:

(Start: 1 @28190 has 101 MA's), (Start: 2 @28181 has 4 MA's), (8, 28076), (11, 28055),

Gene: Kalb97\_40 Start: 28016, Stop: 27873, Start Num: 1

Candidate Starts for Kalb97\_40:

(Start: 1 @28016 has 101 MA's), (Start: 2 @28007 has 4 MA's), (4, 27941), (11, 27881), (12, 27878),

Gene: Kalnoky\_40 Start: 28017, Stop: 27874, Start Num: 1

Candidate Starts for Kalnoky\_40:

(Start: 1 @28017 has 101 MA's), (Start: 2 @28008 has 4 MA's), (4, 27942), (11, 27882), (12, 27879),

Gene: LBerry\_40 Start: 28192, Stop: 28049, Start Num: 1

Candidate Starts for LBerry\_40:

(Start: 1 @28192 has 101 MA's), (Start: 2 @28183 has 4 MA's), (4, 28117), (7, 28096), (8, 28078), (11, 28057),

Gene: Landor\_37 Start: 29071, Stop: 28934, Start Num: 1

Candidate Starts for Landor\_37:

(Start: 1 @29071 has 101 MA's), (3, 29035), (7, 28978), (9, 28957),

Gene: LarryKay\_39 Start: 28192, Stop: 28049, Start Num: 1

Candidate Starts for LarryKay\_39:

(Start: 1 @28192 has 101 MA's), (Start: 2 @28183 has 4 MA's), (8, 28078), (11, 28057),

Gene: Lilith\_40 Start: 28185, Stop: 28042, Start Num: 1

Candidate Starts for Lilith\_40:

(Start: 1 @28185 has 101 MA's), (Start: 2 @28176 has 4 MA's), (4, 28110), (7, 28089), (8, 28071), (11, 28050),

Gene: Lokk\_41 Start: 29286, Stop: 29146, Start Num: 1

Candidate Starts for Lokk\_41:

(Start: 1 @29286 has 101 MA's),

Gene: Loser\_39 Start: 28866, Stop: 28729, Start Num: 1

Candidate Starts for Loser\_39:

(Start: 1 @28866 has 101 MA's), (4, 28794), (5, 28788),

Gene: Louie6\_39 Start: 28191, Stop: 28048, Start Num: 1

Candidate Starts for Louie6\_39:

(Start: 1 @28191 has 101 MA's), (Start: 2 @28182 has 4 MA's), (8, 28077), (11, 28056),

Gene: Lowa\_40 Start: 28184, Stop: 28041, Start Num: 1

Candidate Starts for Lowa\_40:

(Start: 1 @28184 has 101 MA's), (Start: 2 @28175 has 4 MA's), (4, 28109), (7, 28088), (8, 28070), (11, 28049),

Gene: LugYA\_42 Start: 28192, Stop: 28049, Start Num: 1

Candidate Starts for LugYA\_42:

(Start: 1 @28192 has 101 MA's), (Start: 2 @28183 has 4 MA's), (4, 28117), (7, 28096), (8, 28078), (11, 28057),

Gene: MadMarie\_40 Start: 28194, Stop: 28051, Start Num: 1

Candidate Starts for MadMarie\_40:

(Start: 1 @28194 has 101 MA's), (Start: 2 @28185 has 4 MA's), (4, 28119), (7, 28098), (8, 28080), (11, 28059),

Gene: Mainiac\_40 Start: 28185, Stop: 28042, Start Num: 1

Candidate Starts for Mainiac\_40:

(Start: 1 @28185 has 101 MA's), (Start: 2 @28176 has 4 MA's), (4, 28110), (7, 28089), (8, 28071), (11, 28050),

Gene: Malinsilva\_42 Start: 28184, Stop: 28041, Start Num: 1

Candidate Starts for Malinsilva\_42:

(Start: 1 @28184 has 101 MA's), (Start: 2 @28175 has 4 MA's), (4, 28109), (7, 28088), (8, 28070), (11, 28049),

Gene: Manu\_40 Start: 28017, Stop: 27874, Start Num: 1  
Candidate Starts for Manu\_40:  
(Start: 1 @28017 has 101 MA's), (Start: 2 @28008 has 4 MA's), (4, 27942), (11, 27882), (12, 27879),

Gene: MarQuardt\_40 Start: 28193, Stop: 28050, Start Num: 1  
Candidate Starts for MarQuardt\_40:  
(Start: 1 @28193 has 101 MA's), (Start: 2 @28184 has 4 MA's), (4, 28118), (7, 28097), (8, 28079), (11, 28058),

Gene: Marie\_40 Start: 28191, Stop: 28048, Start Num: 1  
Candidate Starts for Marie\_40:  
(Start: 1 @28191 has 101 MA's), (Start: 2 @28182 has 4 MA's), (4, 28116), (7, 28095), (8, 28077), (11, 28056),

Gene: Marius\_40 Start: 28017, Stop: 27874, Start Num: 1  
Candidate Starts for Marius\_40:  
(Start: 1 @28017 has 101 MA's), (Start: 2 @28008 has 4 MA's), (4, 27942), (11, 27882), (12, 27879),

Gene: Methuselah\_38 Start: 28186, Stop: 28043, Start Num: 1  
Candidate Starts for Methuselah\_38:  
(Start: 1 @28186 has 101 MA's), (Start: 2 @28177 has 4 MA's), (8, 28072), (11, 28051),

Gene: Microwolf\_40 Start: 28193, Stop: 28050, Start Num: 1  
Candidate Starts for Microwolf\_40:  
(Start: 1 @28193 has 101 MA's), (Start: 2 @28184 has 4 MA's), (4, 28118), (7, 28097), (8, 28079), (11, 28058),

Gene: MiculUcigas\_37 Start: 27983, Stop: 27849, Start Num: 1  
Candidate Starts for MiculUcigas\_37:  
(Start: 1 @27983 has 101 MA's), (6, 27893), (10, 27857),

Gene: Misomonster\_41 Start: 28189, Stop: 28046, Start Num: 1  
Candidate Starts for Misomonster\_41:  
(Start: 1 @28189 has 101 MA's), (Start: 2 @28180 has 4 MA's), (8, 28075), (11, 28054),

Gene: MoneyMay\_40 Start: 28191, Stop: 28048, Start Num: 1  
Candidate Starts for MoneyMay\_40:  
(Start: 1 @28191 has 101 MA's), (Start: 2 @28182 has 4 MA's), (4, 28116), (7, 28095), (8, 28077), (11, 28056),

Gene: Montavir\_39 Start: 28192, Stop: 28049, Start Num: 1  
Candidate Starts for Montavir\_39:  
(Start: 1 @28192 has 101 MA's), (Start: 2 @28183 has 4 MA's), (4, 28117), (7, 28096), (8, 28078), (11, 28057),

Gene: MuchMore\_42 Start: 28184, Stop: 28041, Start Num: 1  
Candidate Starts for MuchMore\_42:  
(Start: 1 @28184 has 101 MA's), (Start: 2 @28175 has 4 MA's), (4, 28109), (7, 28088), (8, 28070), (11, 28049),

Gene: NaSiaTalie\_37 Start: 27981, Stop: 27847, Start Num: 1  
Candidate Starts for NaSiaTalie\_37:  
(Start: 1 @27981 has 101 MA's), (6, 27891), (10, 27855),

Gene: OlanP\_39 Start: 28198, Stop: 28055, Start Num: 1  
Candidate Starts for OlanP\_39:  
(Start: 1 @28198 has 101 MA's), (Start: 2 @28189 has 4 MA's), (4, 28123), (11, 28063), (12, 28060),

Gene: Ollie\_40 Start: 28063, Stop: 27920, Start Num: 1  
Candidate Starts for Ollie\_40:  
(Start: 1 @28063 has 101 MA's), (Start: 2 @28054 has 4 MA's), (4, 27988), (7, 27967), (8, 27949), (11, 27928),

Gene: P28Green\_40 Start: 28185, Stop: 28051, Start Num: 2  
Candidate Starts for P28Green\_40:  
(Start: 1 @28194 has 101 MA's), (Start: 2 @28185 has 4 MA's), (4, 28119), (7, 28098), (8, 28080), (11, 28059),

Gene: PGHhamlin\_42 Start: 28184, Stop: 28041, Start Num: 1  
Candidate Starts for PGHhamlin\_42:  
(Start: 1 @28184 has 101 MA's), (Start: 2 @28175 has 4 MA's), (4, 28109), (7, 28088), (8, 28070), (11, 28049),

Gene: Pawn\_39 Start: 28018, Stop: 27875, Start Num: 1  
Candidate Starts for Pawn\_39:  
(Start: 1 @28018 has 101 MA's), (Start: 2 @28009 has 4 MA's), (4, 27943), (11, 27883), (12, 27880),

Gene: Pembroke\_40 Start: 28193, Stop: 28050, Start Num: 1  
Candidate Starts for Pembroke\_40:  
(Start: 1 @28193 has 101 MA's), (Start: 2 @28184 has 4 MA's), (4, 28118), (7, 28097), (8, 28079), (11, 28058),

Gene: Penny1\_40 Start: 28192, Stop: 28049, Start Num: 1  
Candidate Starts for Penny1\_40:  
(Start: 1 @28192 has 101 MA's), (Start: 2 @28183 has 4 MA's), (4, 28117), (7, 28096), (8, 28078), (11, 28057),

Gene: Phaded\_40 Start: 29412, Stop: 29275, Start Num: 1  
Candidate Starts for Phaded\_40:  
(Start: 1 @29412 has 101 MA's), (3, 29376), (7, 29319), (9, 29298),

Gene: PhishRPhriends\_38 Start: 27195, Stop: 27052, Start Num: 1  
Candidate Starts for PhishRPhriends\_38:  
(Start: 1 @27195 has 101 MA's), (Start: 2 @27186 has 4 MA's), (4, 27120), (11, 27060), (12, 27057),

Gene: Phoebe\_40 Start: 28184, Stop: 28041, Start Num: 1  
Candidate Starts for Phoebe\_40:  
(Start: 1 @28184 has 101 MA's), (Start: 2 @28175 has 4 MA's), (4, 28109), (7, 28088), (8, 28070), (11, 28049),

Gene: Phoxy\_39 Start: 28187, Stop: 28044, Start Num: 1  
Candidate Starts for Phoxy\_39:  
(Start: 1 @28187 has 101 MA's), (Start: 2 @28178 has 4 MA's), (8, 28073), (11, 28052),

Gene: Phranny\_40 Start: 28003, Stop: 27860, Start Num: 1  
Candidate Starts for Phranny\_40:

(Start: 1 @28003 has 101 MA's), (Start: 2 @27994 has 4 MA's), (4, 27928), (11, 27868), (12, 27865),

Gene: PotatoSplit\_41 Start: 28192, Stop: 28049, Start Num: 1

Candidate Starts for PotatoSplit\_41:

(Start: 1 @28192 has 101 MA's), (Start: 2 @28183 has 4 MA's), (4, 28117), (7, 28096), (8, 28078), (11, 28057),

Gene: PurpleHaze\_39 Start: 28016, Stop: 27873, Start Num: 1

Candidate Starts for PurpleHaze\_39:

(Start: 1 @28016 has 101 MA's), (Start: 2 @28007 has 4 MA's), (4, 27941), (11, 27881), (12, 27878),

Gene: Rachaly\_41 Start: 29360, Stop: 29220, Start Num: 1

Candidate Starts for Rachaly\_41:

(Start: 1 @29360 has 101 MA's),

Gene: Reba\_40 Start: 27676, Stop: 27533, Start Num: 1

Candidate Starts for Reba\_40:

(Start: 1 @27676 has 101 MA's), (Start: 2 @27667 has 4 MA's), (4, 27601), (11, 27541), (12, 27538),

Gene: Rummer\_39 Start: 28178, Stop: 28044, Start Num: 2

Candidate Starts for Rummer\_39:

(Start: 1 @28187 has 101 MA's), (Start: 2 @28178 has 4 MA's), (8, 28073), (11, 28052),

Gene: Sabia\_40 Start: 28185, Stop: 28042, Start Num: 1

Candidate Starts for Sabia\_40:

(Start: 1 @28185 has 101 MA's), (Start: 2 @28176 has 4 MA's), (4, 28110), (7, 28089), (8, 28071), (11, 28050),

Gene: Sabinator\_39 Start: 28190, Stop: 28047, Start Num: 1

Candidate Starts for Sabinator\_39:

(Start: 1 @28190 has 101 MA's), (Start: 2 @28181 has 4 MA's), (4, 28115), (7, 28094), (8, 28076), (11, 28055),

Gene: Sknot\_37 Start: 27984, Stop: 27850, Start Num: 1

Candidate Starts for Sknot\_37:

(Start: 1 @27984 has 101 MA's), (6, 27894), (10, 27858),

Gene: Snickers\_40 Start: 28165, Stop: 28022, Start Num: 1

Candidate Starts for Snickers\_40:

(Start: 1 @28165 has 101 MA's), (Start: 2 @28156 has 4 MA's), (4, 28090), (7, 28069), (8, 28051), (11, 28030),

Gene: SoYo\_40 Start: 28103, Stop: 27960, Start Num: 1

Candidate Starts for SoYo\_40:

(Start: 1 @28103 has 101 MA's), (Start: 2 @28094 has 4 MA's), (4, 28028), (7, 28007), (8, 27989), (11, 27968),

Gene: SoilDragon\_39 Start: 27637, Stop: 27494, Start Num: 1

Candidate Starts for SoilDragon\_39:

(Start: 1 @27637 has 101 MA's), (Start: 2 @27628 has 4 MA's), (4, 27562), (7, 27541), (8, 27523), (11, 27502),

Gene: Soshari\_41 Start: 28186, Stop: 28043, Start Num: 1

Candidate Starts for Soshari\_41:

(Start: 1 @28186 has 101 MA's), (Start: 2 @28177 has 4 MA's), (8, 28072), (11, 28051),

Gene: Spike509\_39 Start: 28187, Stop: 28044, Start Num: 1

Candidate Starts for Spike509\_39:

(Start: 1 @28187 has 101 MA's), (Start: 2 @28178 has 4 MA's), (8, 28073), (11, 28052),

Gene: Stagni\_40 Start: 28194, Stop: 28051, Start Num: 1

Candidate Starts for Stagni\_40:

(Start: 1 @28194 has 101 MA's), (Start: 2 @28185 has 4 MA's), (4, 28119), (7, 28098), (8, 28080), (11, 28059),

Gene: StepMih\_40 Start: 28185, Stop: 28042, Start Num: 1

Candidate Starts for StepMih\_40:

(Start: 1 @28185 has 101 MA's), (Start: 2 @28176 has 4 MA's), (4, 28110), (7, 28089), (8, 28071), (11, 28050),

Gene: Taurus\_40 Start: 28191, Stop: 28048, Start Num: 1

Candidate Starts for Taurus\_40:

(Start: 1 @28191 has 101 MA's), (Start: 2 @28182 has 4 MA's), (4, 28116), (7, 28095), (8, 28077), (11, 28056),

Gene: Terrific\_40 Start: 28324, Stop: 28190, Start Num: 1

Candidate Starts for Terrific\_40:

(Start: 1 @28324 has 101 MA's), (6, 28234), (10, 28198),

Gene: Tiffany\_40 Start: 28077, Stop: 27934, Start Num: 1

Candidate Starts for Tiffany\_40:

(Start: 1 @28077 has 101 MA's), (Start: 2 @28068 has 4 MA's), (4, 28002), (7, 27981), (8, 27963), (11, 27942),

Gene: TinyPebbles\_39 Start: 28192, Stop: 28049, Start Num: 1

Candidate Starts for TinyPebbles\_39:

(Start: 1 @28192 has 101 MA's), (Start: 2 @28183 has 4 MA's), (8, 28078), (11, 28057),

Gene: Tristan\_37 Start: 29207, Stop: 29070, Start Num: 1

Candidate Starts for Tristan\_37:

(Start: 1 @29207 has 101 MA's), (3, 29171), (7, 29114), (9, 29093),

Gene: Updawg\_38 Start: 28312, Stop: 28178, Start Num: 1

Candidate Starts for Updawg\_38:

(Start: 1 @28312 has 101 MA's), (6, 28222), (10, 28186),

Gene: Vix\_40 Start: 28274, Stop: 28131, Start Num: 1

Candidate Starts for Vix\_40:

(Start: 1 @28274 has 101 MA's), (Start: 2 @28265 has 4 MA's), (4, 28199), (7, 28178), (8, 28160), (11, 28139),

Gene: Watson\_40 Start: 28184, Stop: 28041, Start Num: 1

Candidate Starts for Watson\_40:

(Start: 1 @28184 has 101 MA's), (Start: 2 @28175 has 4 MA's), (4, 28109), (7, 28088), (8, 28070), (11, 28049),

Gene: WideWale\_38 Start: 28312, Stop: 28178, Start Num: 1

Candidate Starts for WideWale\_38:

(Start: 1 @28312 has 101 MA's), (6, 28222), (10, 28186),

Gene: Wooldri\_42 Start: 28103, Stop: 27960, Start Num: 1

Candidate Starts for Wooldri\_42:

(Start: 1 @28103 has 101 MA's), (Start: 2 @28094 has 4 MA's), (4, 28028), (7, 28007), (8, 27989), (11, 27968),

Gene: Zetzy\_39 Start: 27755, Stop: 27612, Start Num: 1

Candidate Starts for Zetzy\_39:

(Start: 1 @27755 has 101 MA's), (Start: 2 @27746 has 4 MA's), (4, 27680), (7, 27659), (8, 27641), (11, 27620),