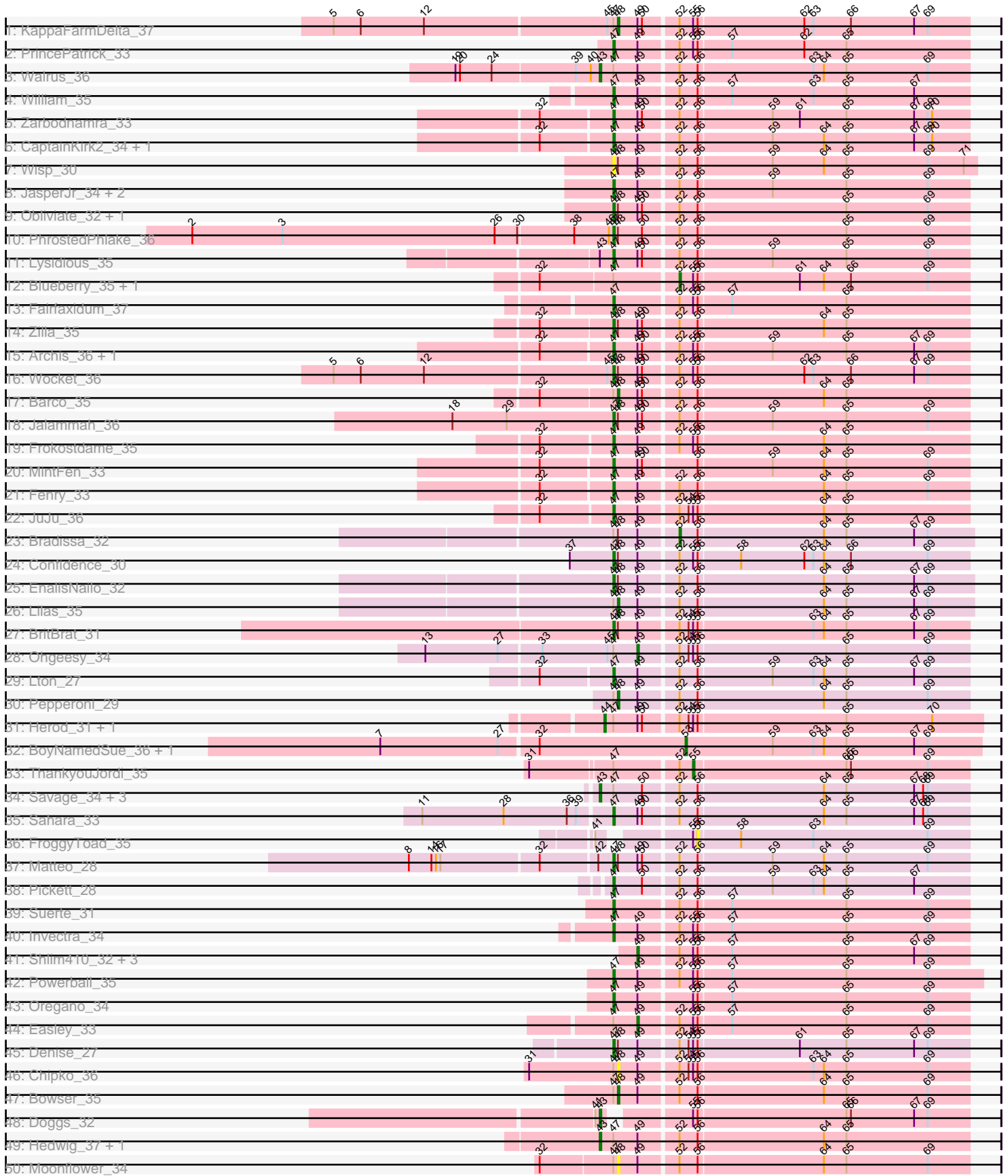


Pham 311406





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 311406 Report

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

Pham number 311406 has 109 members, 12 are drafts.

Phages represented in each track:

- Track 1 : KappaFarmDelta\_37
- Track 2 : PrincePatrick\_33
- Track 3 : Walrus\_36
- Track 4 : William\_35
- Track 5 : Zarbodnamra\_33
- Track 6 : CaptainKirk2\_34, Delian\_35
- Track 7 : Wisp\_30
- Track 8 : JasperJr\_34, UmaThurman\_31, Guacamole\_34
- Track 9 : Obliviate\_32, ZiggyZoo\_34
- Track 10 : PhrostedPhlake\_36
- Track 11 : Lysidious\_35
- Track 12 : Blueberry\_35, Gambino\_36
- Track 13 : Fairfaxidum\_37
- Track 14 : Zilla\_35
- Track 15 : Archis\_36, Hitter\_34
- Track 16 : Wocket\_36
- Track 17 : Barco\_35
- Track 18 : Jalammah\_36
- Track 19 : Frokostdame\_35
- Track 20 : MintFen\_33
- Track 21 : Fenry\_33
- Track 22 : JuJu\_36
- Track 23 : Bradissa\_32
- Track 24 : Confidence\_30
- Track 25 : EnalisNailo\_32
- Track 26 : Lilas\_35
- Track 27 : BritBrat\_31
- Track 28 : Ohgeesy\_34
- Track 29 : Lton\_27
- Track 30 : Pepperoni\_29
- Track 31 : Herod\_31, Hugley\_30
- Track 32 : BoyNamedSue\_36, AlumE\_36
- Track 33 : ThankyouJordi\_35
- Track 34 : Savage\_34, Ebert\_35, Sproutie\_34, Yinzer\_33
- Track 35 : Sahara\_33
- Track 36 : FroggyToad\_35
- Track 37 : Matteo\_28

- Track 38 : Pickett\_28
- Track 39 : Suerte\_31
- Track 40 : Invectra\_34
- Track 41 : Shlim410\_32, Howe\_32, Hortense\_32, Twinkle\_32
- Track 42 : Powerball\_35
- Track 43 : Oregano\_34
- Track 44 : Easley\_33
- Track 45 : Denise\_27
- Track 46 : Chipko\_36
- Track 47 : Bowser\_35
- Track 48 : Doggs\_32
- Track 49 : Hedwig\_37, DirtyBoi\_35
- Track 50 : Moonflower\_34
- Track 51 : RayTheFireFly\_35
- Track 52 : ZAYM\_35
- Track 53 : Eyes\_32
- Track 54 : Portcullis\_38, PullumCavea\_37, Jambalaya\_37, Egi03\_38, Phlop\_37, Fireball\_38, CoveyB\_40, Togo\_37, Savbucketdawg\_37
- Track 55 : SharkTale\_37
- Track 56 : YungMoney\_39
- Track 57 : Arri\_41, VanDeWege\_41, Fugax\_41
- Track 58 : Clown\_42
- Track 59 : Morkie\_30, OneDirection\_28
- Track 60 : PhorbessPhlower\_29
- Track 61 : InLimbo\_32
- Track 62 : Birdsong\_37, Phabuloso\_34
- Track 63 : Malisha\_37
- Track 64 : Ecliptus\_38
- Track 65 : BearBQ\_36
- Track 66 : ODay\_40
- Track 67 : MortyNRick\_34
- Track 68 : Budski\_37
- Track 69 : Getalong\_38
- Track 70 : Lutum\_37, Kenna\_36
- Track 71 : Frickyeah\_37
- Track 72 : Whitney\_40
- Track 73 : BENtherdunthat\_36
- Track 74 : Squiddly\_38
- Track 75 : Crater\_39
- Track 76 : Kuwabara\_36
- Track 77 : Sprinklemunch\_40
- Track 78 : Ruthy\_34
- Track 79 : ArchiDore\_32
- Track 80 : PhaoMing\_29
- Track 81 : TinyDot\_30

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

The start number called the most often in the published annotations is 47, it was called in 57 of the 97 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Archis\_36, Arri\_41, BritBrat\_31, CaptainKirk2\_34, Clown\_42, Confidence\_30, CoveyB\_40, Crater\_39, Delian\_35, Denise\_27, Ecliptus\_38, Egi03\_38, EnalisNailo\_32, Eyes\_32, Fairfaxidum\_37, Fenry\_33, Fireball\_38, Frickyeah\_37, Frokostdame\_35, Fugax\_41, Guacamole\_34, Hitter\_34, Invectra\_34, Jalammah\_36, Jambalaya\_37, JasperJr\_34, JuJu\_36, Kenna\_36, Kuwabara\_36, Lton\_27, Lutum\_37, Lysidious\_35, Matteo\_28, MintFen\_33, MortyNRick\_34, Obliviate\_32, Oregano\_34, Phlop\_37, PhorbesPhlower\_29, PhrostedPhlake\_36, Pickett\_28, Portcullis\_38, Powerball\_35, PrincePatrick\_33, PullumCavea\_37, Sahara\_33, Savbucketdawg\_37, Squiddly\_38, Suerte\_31, TinyDot\_30, Togo\_37, UmaThurman\_31, VanDeWege\_41, William\_35, Wisp\_30, Wocket\_36, Zarbodnamra\_33, ZiggyZoo\_34, Zilla\_35,

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

- ArchiDore\_32, BENtherdunthat\_36, Barco\_35, BearBQ\_36, Birdsong\_37, Blueberry\_35, Bowser\_35, Bradissa\_32, Budski\_37, Chipko\_36, DirtyBoi\_35, Easley\_33, Ebert\_35, Gambino\_36, Getalong\_38, Hedwig\_37, Herod\_31, Hugley\_30, InLimbo\_32, KappaFarmDelta\_37, Lilas\_35, Malisha\_37, Moonflower\_34, Morkie\_30, ODay\_40, Ohgeesy\_34, OneDirection\_28, Pepperoni\_29, Phabuloso\_34, PhaoMing\_29, RayTheFireFly\_35, Ruthy\_34, Savage\_34, SharkTale\_37, Sprinklemunch\_40, Sproutie\_34, ThankyouJordi\_35, Walrus\_36, Whitney\_40, Yinzer\_33, YungMoney\_39, ZAYM\_35,

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

- AlumE\_36, BoyNamedSue\_36, Doggs\_32, FroggyToad\_35, Hortense\_32, Howe\_32, Shlim410\_32, Twinkle\_32,

### Summary by start number:

Start 34:

- Found in 1 of 109 ( 0.9% ) of genes in pham
- Manual Annotations of this start: 1 of 97
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ruthy\_34 (DW),

Start 43:

- Found in 19 of 109 ( 17.4% ) of genes in pham
- Manual Annotations of this start: 7 of 97
- Called 42.1% of time when present
- Phage (with cluster) where this start called: DirtyBoi\_35 (DB), Doggs\_32 (DB), Ebert\_35 (CZ2), Hedwig\_37 (DB), Savage\_34 (CZ2), Sproutie\_34 (CZ2), Walrus\_36 (CV), Yinzer\_33 (CZ2),

Start 44:

- Found in 2 of 109 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 1 of 97
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Herod\_31 (CZ1), Hugley\_30 (CZ1),

Start 47:

- Found in 101 of 109 ( 92.7% ) of genes in pham
- Manual Annotations of this start: 57 of 97

- Called 58.4% of time when present
- Phage (with cluster) where this start called: Archis\_36 (CV), Arri\_41 (DC1), BritBrat\_31 (CY2), CaptainKirk2\_34 (CV), Clown\_42 (DC2), Confidence\_30 (CY1), CoveyB\_40 (DC1), Crater\_39 (DN3), Delian\_35 (CV), Denise\_27 (CZ5), Ecliptus\_38 (DN), Egi03\_38 (DC1), EnalisNailo\_32 (CY1), Eyes\_32 (DB), Fairfaxidum\_37 (CV), Ferry\_33 (CV), Fireball\_38 (DC1), Frickyeah\_37 (DN1), Frokostdame\_35 (CV), Fugax\_41 (DC1), Guacamole\_34 (CV), Hitter\_34 (CV), Invectra\_34 (CZ4), Jalammah\_36 (CV), Jambalaya\_37 (DC1), JasperJr\_34 (CV), JuJu\_36 (CV), Kenna\_36 (DN1), Kuwabara\_36 (DN4), Lton\_27 (CZ), Lutum\_37 (DN1), Lysidious\_35 (CV), Matteo\_28 (CZ2), MintFen\_33 (CV), MortyNRick\_34 (DN), Obliviate\_32 (CV), Oregano\_34 (CZ4), Phlop\_37 (DC1), PhorbesPhlower\_29 (DH), PhrostedPhlake\_36 (CV), Pickett\_28 (CZ2), Portcullis\_38 (DC1), Powerball\_35 (CZ4), PrincePatrick\_33 (CV), PullumCavea\_37 (DC1), Sahara\_33 (CZ2), Savbucketdawg\_37 (DC1), Squiddly\_38 (DN2), Suerte\_31 (CZ4), TinyDot\_30 (singleton), Togo\_37 (DC1), UmaThurman\_31 (CV), VanDeWege\_41 (DC1), William\_35 (CV), Wisp\_30 (CV), Wocket\_36 (CV), Zarbodnamra\_33 (CV), ZiggyZoo\_34 (CV), Zilla\_35 (CV),

#### Start 48:

- Found in 44 of 109 ( 40.4% ) of genes in pham
- Manual Annotations of this start: 19 of 97
- Called 52.3% of time when present
- Phage (with cluster) where this start called: ArchiDore\_32 (DW), BENtherdunthat\_36 (DN1), Barco\_35 (CV), BearBQ\_36 (DN), Birdsong\_37 (DN), Bowser\_35 (DB), Budski\_37 (DN), Chipko\_36 (DB), Getalong\_38 (DN1), KappaFarmDelta\_37 (CV), Lilas\_35 (CY1), Malisha\_37 (DN), Moonflower\_34 (DB), Morkie\_30 (DH), ODay\_40 (DN), OneDirection\_28 (CZ6), Pepperoni\_29 (CZ), Phabuloso\_34 (DN1), PhaoMing\_29 (UNK), RayTheFireFly\_35 (DB), SharkTale\_37 (DC1), Whitney\_40 (DN1), YungMoney\_39 (DC1),

#### Start 49:

- Found in 92 of 109 ( 84.4% ) of genes in pham
- Manual Annotations of this start: 6 of 97
- Called 7.6% of time when present
- Phage (with cluster) where this start called: Easley\_33 (CZ4), Hortense\_32 (CZ4), Howe\_32 (CZ4), Ohgeesy\_34 (CZ), Shlim410\_32 (CZ4), Twinkle\_32 (CZ4), ZAYM\_35 (DB),

#### Start 52:

- Found in 99 of 109 ( 90.8% ) of genes in pham
- Manual Annotations of this start: 3 of 97
- Called 3.0% of time when present
- Phage (with cluster) where this start called: Blueberry\_35 (CV), Bradissa\_32 (CY1), Gambino\_36 (CV),

#### Start 53:

- Found in 2 of 109 ( 1.8% ) of genes in pham
- Manual Annotations of this start: 2 of 97
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AlumE\_36 (CZ1), BoyNamedSue\_36 (CZ1),

#### Start 55:

- Found in 33 of 109 ( 30.3% ) of genes in pham

- Manual Annotations of this start: 1 of 97
- Called 3.0% of time when present
- Phage (with cluster) where this start called: ThankyouJordi\_35 (CZ1),

Start 56:

- Found in 106 of 109 ( 97.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.9% of time when present
- Phage (with cluster) where this start called: FroggyToad\_35 (CZ2), InLimbo\_32 (DH),

Start 57:

- Found in 14 of 109 ( 12.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 7.1% of time when present
- Phage (with cluster) where this start called: Sprinklemunch\_40 (DW),

### Summary by clusters:

There are 21 clusters represented in this pham: DN, CY2, CY1, DH, DN4, CZ2, CZ6, CZ1, DB, singleton, CZ4, CZ5, CZ, DN1, DN3, DN2, DW, UNK, DC2, CV, DC1,

Info for manual annotations of cluster CV:

- Start number 43 was manually annotated 1 time for cluster CV.
- Start number 47 was manually annotated 22 times for cluster CV.
- Start number 48 was manually annotated 2 times for cluster CV.
- Start number 52 was manually annotated 2 times for cluster CV.

Info for manual annotations of cluster CY1:

- Start number 47 was manually annotated 2 times for cluster CY1.
- Start number 48 was manually annotated 1 time for cluster CY1.
- Start number 52 was manually annotated 1 time for cluster CY1.

Info for manual annotations of cluster CY2:

- Start number 47 was manually annotated 1 time for cluster CY2.

Info for manual annotations of cluster CZ:

- Start number 47 was manually annotated 1 time for cluster CZ.
- Start number 48 was manually annotated 1 time for cluster CZ.
- Start number 49 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 44 was manually annotated 1 time for cluster CZ1.
- Start number 53 was manually annotated 2 times for cluster CZ1.
- Start number 55 was manually annotated 1 time for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 43 was manually annotated 3 times for cluster CZ2.
- Start number 47 was manually annotated 3 times for cluster CZ2.

Info for manual annotations of cluster CZ4:

- Start number 47 was manually annotated 4 times for cluster CZ4.
- Start number 49 was manually annotated 5 times for cluster CZ4.

Info for manual annotations of cluster CZ5:

- Start number 47 was manually annotated 1 time for cluster CZ5.

Info for manual annotations of cluster CZ6:

- Start number 48 was manually annotated 1 time for cluster CZ6.

Info for manual annotations of cluster DB:

- Start number 43 was manually annotated 3 times for cluster DB.
- Start number 47 was manually annotated 1 time for cluster DB.
- Start number 48 was manually annotated 2 times for cluster DB.

Info for manual annotations of cluster DC1:

- Start number 47 was manually annotated 12 times for cluster DC1.
- Start number 48 was manually annotated 1 time for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 47 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DH:

- Start number 47 was manually annotated 1 time for cluster DH.
- Start number 48 was manually annotated 1 time for cluster DH.

Info for manual annotations of cluster DN:

- Start number 47 was manually annotated 2 times for cluster DN.
- Start number 48 was manually annotated 5 times for cluster DN.

Info for manual annotations of cluster DN1:

- Start number 47 was manually annotated 2 times for cluster DN1.
- Start number 48 was manually annotated 4 times for cluster DN1.

Info for manual annotations of cluster DN2:

- Start number 47 was manually annotated 1 time for cluster DN2.

Info for manual annotations of cluster DN3:

- Start number 47 was manually annotated 1 time for cluster DN3.

Info for manual annotations of cluster DN4:

- Start number 47 was manually annotated 1 time for cluster DN4.

Info for manual annotations of cluster DW:

- Start number 34 was manually annotated 1 time for cluster DW.
- Start number 48 was manually annotated 1 time for cluster DW.

### ***Gene Information:***

Gene: AlumE\_36 Start: 30317, Stop: 30123, Start Num: 53

Candidate Starts for AlumE\_36:

(7, 30515), (27, 30437), (32, 30413), (Start: 53 @30317 has 2 MA's), (59, 30260), (63, 30233), (64, 30227), (65, 30212), (67, 30167), (69, 30158),

Gene: ArchiDore\_32 Start: 28535, Stop: 28311, Start Num: 48

Candidate Starts for ArchiDore\_32:

(15, 28652), (23, 28616), (31, 28592), (Start: 47 @28538 has 57 MA's), (Start: 48 @28535 has 19 MA's), (Start: 49 @28523 has 6 MA's), (50, 28520), (Start: 55 @28490 has 1 MA's), (56, 28487), (63, 28412), (64, 28406), (65, 28391), (67, 28346), (69, 28337),

Gene: Archis\_36 Start: 29314, Stop: 29087, Start Num: 47

Candidate Starts for Archis\_36:

(32, 29359), (Start: 47 @29314 has 57 MA's), (Start: 49 @29299 has 6 MA's), (50, 29296), (Start: 52 @29275 has 3 MA's), (Start: 55 @29266 has 1 MA's), (56, 29263), (59, 29215), (65, 29167), (67, 29122), (69, 29113),

Gene: Arri\_41 Start: 33726, Stop: 33499, Start Num: 47

Candidate Starts for Arri\_41:

(32, 33771), (42, 33735), (Start: 47 @33726 has 57 MA's), (Start: 49 @33711 has 6 MA's), (Start: 52 @33687 has 3 MA's), (56, 33675), (59, 33627), (64, 33594), (65, 33579), (69, 33525),

Gene: BENtherdunthat\_36 Start: 28355, Stop: 28131, Start Num: 48

Candidate Starts for BENtherdunthat\_36:

(Start: 47 @28358 has 57 MA's), (Start: 48 @28355 has 19 MA's), (Start: 49 @28343 has 6 MA's), (Start: 52 @28319 has 3 MA's), (56, 28307), (59, 28259), (63, 28232), (64, 28226), (65, 28211), (67, 28166), (68, 28160), (69, 28157),

Gene: Barco\_35 Start: 29527, Stop: 29303, Start Num: 48

Candidate Starts for Barco\_35:

(32, 29575), (Start: 47 @29530 has 57 MA's), (Start: 48 @29527 has 19 MA's), (Start: 49 @29515 has 6 MA's), (50, 29512), (Start: 52 @29491 has 3 MA's), (56, 29479), (64, 29398), (65, 29383),

Gene: BearBQ\_36 Start: 29718, Stop: 29494, Start Num: 48

Candidate Starts for BearBQ\_36:

(Start: 43 @29730 has 7 MA's), (Start: 47 @29721 has 57 MA's), (Start: 48 @29718 has 19 MA's), (Start: 49 @29706 has 6 MA's), (Start: 52 @29682 has 3 MA's), (56, 29670), (59, 29622), (60, 29607), (63, 29595), (64, 29589), (65, 29574), (67, 29529),

Gene: Birdsong\_37 Start: 29810, Stop: 29586, Start Num: 48

Candidate Starts for Birdsong\_37:

(Start: 43 @29822 has 7 MA's), (Start: 47 @29813 has 57 MA's), (Start: 48 @29810 has 19 MA's), (Start: 49 @29798 has 6 MA's), (Start: 52 @29774 has 3 MA's), (56, 29762), (64, 29681), (65, 29666), (67, 29621), (69, 29612),

Gene: Blueberry\_35 Start: 28987, Stop: 28799, Start Num: 52

Candidate Starts for Blueberry\_35:

(32, 29071), (Start: 47 @29026 has 57 MA's), (Start: 52 @28987 has 3 MA's), (Start: 55 @28978 has 1 MA's), (56, 28975), (61, 28909), (64, 28894), (66, 28876), (69, 28825),

Gene: Bowser\_35 Start: 28606, Stop: 28382, Start Num: 48

Candidate Starts for Bowser\_35:

(Start: 47 @28609 has 57 MA's), (Start: 48 @28606 has 19 MA's), (Start: 49 @28594 has 6 MA's), (Start: 52 @28570 has 3 MA's), (56, 28558), (64, 28477), (65, 28462), (69, 28408),

Gene: BoyNamedSue\_36 Start: 30317, Stop: 30123, Start Num: 53

Candidate Starts for BoyNamedSue\_36:

(7, 30515), (27, 30437), (32, 30413), (Start: 53 @30317 has 2 MA's), (59, 30260), (63, 30233), (64, 30227), (65, 30212), (67, 30167), (69, 30158),

Gene: Bradissa\_32 Start: 28422, Stop: 28231, Start Num: 52

Candidate Starts for Bradissa\_32:

(Start: 47 @28461 has 57 MA's), (Start: 48 @28458 has 19 MA's), (Start: 49 @28446 has 6 MA's), (Start: 52 @28422 has 3 MA's), (56, 28410), (64, 28329), (65, 28314), (67, 28269), (69, 28260),

Gene: BritBrat\_31 Start: 29502, Stop: 29275, Start Num: 47

Candidate Starts for BritBrat\_31:

(Start: 47 @29502 has 57 MA's), (Start: 48 @29499 has 19 MA's), (Start: 49 @29487 has 6 MA's), (Start: 52 @29463 has 3 MA's), (54, 29457), (Start: 55 @29454 has 1 MA's), (56, 29451), (63, 29376), (64, 29370), (65, 29355), (67, 29310), (69, 29301),

Gene: Budski\_37 Start: 30045, Stop: 29821, Start Num: 48

Candidate Starts for Budski\_37:

(Start: 43 @30057 has 7 MA's), (Start: 47 @30048 has 57 MA's), (Start: 48 @30045 has 19 MA's), (Start: 49 @30033 has 6 MA's), (Start: 52 @30009 has 3 MA's), (56, 29997), (59, 29949), (63, 29922), (64, 29916), (65, 29901), (67, 29856), (69, 29847), (70, 29844),

Gene: CaptainKirk2\_34 Start: 28619, Stop: 28392, Start Num: 47

Candidate Starts for CaptainKirk2\_34:

(32, 28664), (Start: 47 @28619 has 57 MA's), (Start: 49 @28604 has 6 MA's), (Start: 52 @28580 has 3 MA's), (56, 28568), (59, 28520), (64, 28487), (65, 28472), (67, 28427), (69, 28418), (70, 28415),

Gene: Chipko\_36 Start: 31057, Stop: 30833, Start Num: 48

Candidate Starts for Chipko\_36:

(31, 31114), (Start: 47 @31060 has 57 MA's), (Start: 48 @31057 has 19 MA's), (Start: 49 @31045 has 6 MA's), (Start: 52 @31021 has 3 MA's), (54, 31015), (Start: 55 @31012 has 1 MA's), (56, 31009), (63, 30934), (64, 30928), (65, 30913), (69, 30859),

Gene: Clown\_42 Start: 35272, Stop: 35024, Start Num: 47

Candidate Starts for Clown\_42:

(4, 35458), (Start: 47 @35272 has 57 MA's), (Start: 49 @35257 has 6 MA's), (Start: 52 @35233 has 3 MA's), (Start: 55 @35224 has 1 MA's), (56, 35221), (57, 35200), (65, 35125), (69, 35071),

Gene: Confidence\_30 Start: 26910, Stop: 26683, Start Num: 47

Candidate Starts for Confidence\_30:

(37, 26937), (Start: 47 @26910 has 57 MA's), (Start: 48 @26907 has 19 MA's), (Start: 49 @26895 has 6 MA's), (Start: 52 @26871 has 3 MA's), (Start: 55 @26862 has 1 MA's), (56, 26859), (58, 26832), (62, 26790), (63, 26784), (64, 26778), (66, 26760), (69, 26709),

Gene: CoveyB\_40 Start: 33543, Stop: 33316, Start Num: 47

Candidate Starts for CoveyB\_40:

(32, 33588), (42, 33552), (Start: 47 @33543 has 57 MA's), (Start: 49 @33528 has 6 MA's), (Start: 52 @33504 has 3 MA's), (56, 33492), (64, 33411), (65, 33396), (69, 33342),

Gene: Crater\_39 Start: 29158, Stop: 28931, Start Num: 47

Candidate Starts for Crater\_39:

(32, 29203), (35, 29191), (Start: 47 @29158 has 57 MA's), (Start: 49 @29143 has 6 MA's), (50, 29140), (Start: 52 @29119 has 3 MA's), (56, 29107), (59, 29059), (60, 29044), (61, 29041), (63, 29032), (64, 29026), (65, 29011), (67, 28966), (69, 28957), (70, 28954),

Gene: Delian\_35 Start: 28617, Stop: 28390, Start Num: 47

Candidate Starts for Delian\_35:

(32, 28662), (Start: 47 @28617 has 57 MA's), (Start: 49 @28602 has 6 MA's), (Start: 52 @28578 has 3 MA's), (56, 28566), (59, 28518), (64, 28485), (65, 28470), (67, 28425), (69, 28416), (70, 28413),

Gene: Denise\_27 Start: 24591, Stop: 24364, Start Num: 47

Candidate Starts for Denise\_27:

(Start: 47 @24591 has 57 MA's), (Start: 48 @24588 has 19 MA's), (Start: 49 @24576 has 6 MA's), (Start: 52 @24552 has 3 MA's), (54, 24546), (Start: 55 @24543 has 1 MA's), (56, 24540), (61, 24474), (65, 24444), (67, 24399), (69, 24390),

Gene: DirtyBoi\_35 Start: 29162, Stop: 28926, Start Num: 43

Candidate Starts for DirtyBoi\_35:

(Start: 43 @29162 has 7 MA's), (Start: 47 @29153 has 57 MA's), (Start: 49 @29138 has 6 MA's), (Start: 52 @29114 has 3 MA's), (56, 29102), (64, 29021), (65, 29006),

Gene: Doggs\_32 Start: 28809, Stop: 28585, Start Num: 43

Candidate Starts for Doggs\_32:

(41, 28812), (Start: 43 @28809 has 7 MA's), (Start: 55 @28764 has 1 MA's), (56, 28761), (65, 28665), (66, 28662), (67, 28620), (69, 28611),

Gene: Easley\_33 Start: 26425, Stop: 26213, Start Num: 49

Candidate Starts for Easley\_33:

(Start: 47 @26440 has 57 MA's), (Start: 49 @26425 has 6 MA's), (Start: 52 @26401 has 3 MA's), (Start: 55 @26392 has 1 MA's), (56, 26389), (57, 26368), (65, 26293), (69, 26239),

Gene: Ebert\_35 Start: 26481, Stop: 26245, Start Num: 43

Candidate Starts for Ebert\_35:

(Start: 43 @26481 has 7 MA's), (Start: 47 @26472 has 57 MA's), (50, 26454), (Start: 52 @26433 has 3 MA's), (56, 26421), (64, 26340), (65, 26325), (67, 26280), (68, 26274), (69, 26271),

Gene: Ecliptus\_38 Start: 30614, Stop: 30387, Start Num: 47

Candidate Starts for Ecliptus\_38:

(32, 30659), (Start: 47 @30614 has 57 MA's), (Start: 49 @30599 has 6 MA's), (50, 30596), (Start: 52 @30575 has 3 MA's), (56, 30563), (64, 30482), (65, 30467), (67, 30422), (69, 30413),

Gene: Egi03\_38 Start: 33223, Stop: 32996, Start Num: 47

Candidate Starts for Egi03\_38:

(32, 33268), (42, 33232), (Start: 47 @33223 has 57 MA's), (Start: 49 @33208 has 6 MA's), (Start: 52 @33184 has 3 MA's), (56, 33172), (64, 33091), (65, 33076), (69, 33022),

Gene: EnalisNailo\_32 Start: 27995, Stop: 27765, Start Num: 47

Candidate Starts for EnalisNailo\_32:

(Start: 47 @27995 has 57 MA's), (Start: 48 @27992 has 19 MA's), (Start: 49 @27980 has 6 MA's), (Start: 52 @27956 has 3 MA's), (56, 27944), (64, 27863), (65, 27848), (67, 27803), (69, 27794),

Gene: Eyes\_32 Start: 27913, Stop: 27686, Start Num: 47

Candidate Starts for Eyes\_32:

(32, 27958), (Start: 47 @27913 has 57 MA's), (Start: 49 @27898 has 6 MA's), (56, 27862), (60, 27799), (63, 27787), (65, 27766), (67, 27721), (69, 27712),

Gene: Fairfaxidum\_37 Start: 30093, Stop: 29866, Start Num: 47

Candidate Starts for Fairfaxidum\_37:

(Start: 47 @30093 has 57 MA's), (Start: 52 @30054 has 3 MA's), (Start: 55 @30045 has 1 MA's), (56, 30042), (57, 30021), (65, 29946),

Gene: Fenry\_33 Start: 28854, Stop: 28627, Start Num: 47

Candidate Starts for Fenry\_33:

(32, 28899), (Start: 47 @28854 has 57 MA's), (Start: 49 @28839 has 6 MA's), (Start: 52 @28815 has 3 MA's), (56, 28803), (64, 28722), (65, 28707), (69, 28653),

Gene: Fireball\_38 Start: 33687, Stop: 33460, Start Num: 47

Candidate Starts for Fireball\_38:

(32, 33732), (42, 33696), (Start: 47 @33687 has 57 MA's), (Start: 49 @33672 has 6 MA's), (Start: 52 @33648 has 3 MA's), (56, 33636), (64, 33555), (65, 33540), (69, 33486),

Gene: Frickyeah\_37 Start: 28187, Stop: 27960, Start Num: 47

Candidate Starts for Frickyeah\_37:

(Start: 43 @28196 has 7 MA's), (Start: 47 @28187 has 57 MA's), (Start: 48 @28184 has 19 MA's), (Start: 49 @28172 has 6 MA's), (Start: 52 @28148 has 3 MA's), (56, 28136), (64, 28055), (65, 28040), (69, 27986),

Gene: FroggyToad\_35 Start: 27684, Stop: 27508, Start Num: 56

Candidate Starts for FroggyToad\_35:

(41, 27735), (Start: 55 @27687 has 1 MA's), (56, 27684), (58, 27657), (63, 27609), (69, 27534),

Gene: Frokostdame\_35 Start: 28824, Stop: 28597, Start Num: 47

Candidate Starts for Frokostdame\_35:

(32, 28869), (Start: 47 @28824 has 57 MA's), (Start: 49 @28809 has 6 MA's), (Start: 52 @28785 has 3 MA's), (Start: 55 @28776 has 1 MA's), (56, 28773), (64, 28692), (65, 28677),

Gene: Fugax\_41 Start: 33735, Stop: 33508, Start Num: 47

Candidate Starts for Fugax\_41:

(32, 33780), (42, 33744), (Start: 47 @33735 has 57 MA's), (Start: 49 @33720 has 6 MA's), (Start: 52 @33696 has 3 MA's), (56, 33684), (59, 33636), (64, 33603), (65, 33588), (69, 33534),

Gene: Gambino\_36 Start: 28987, Stop: 28799, Start Num: 52

Candidate Starts for Gambino\_36:

(32, 29071), (Start: 47 @29026 has 57 MA's), (Start: 52 @28987 has 3 MA's), (Start: 55 @28978 has 1 MA's), (56, 28975), (61, 28909), (64, 28894), (66, 28876), (69, 28825),

Gene: Getalong\_38 Start: 30905, Stop: 30681, Start Num: 48

Candidate Starts for Getalong\_38:

(Start: 47 @30908 has 57 MA's), (Start: 48 @30905 has 19 MA's), (Start: 49 @30893 has 6 MA's), (50, 30890), (56, 30857), (59, 30809), (63, 30782), (64, 30776), (65, 30761), (69, 30707),

Gene: Guacamole\_34 Start: 29704, Stop: 29477, Start Num: 47

Candidate Starts for Guacamole\_34:

(Start: 47 @29704 has 57 MA's), (Start: 49 @29689 has 6 MA's), (Start: 52 @29665 has 3 MA's), (56, 29653), (59, 29605), (65, 29557), (69, 29503),

Gene: Hedwig\_37 Start: 29585, Stop: 29349, Start Num: 43

Candidate Starts for Hedwig\_37:

(Start: 43 @29585 has 7 MA's), (Start: 47 @29576 has 57 MA's), (Start: 49 @29561 has 6 MA's), (Start: 52 @29537 has 3 MA's), (56, 29525), (64, 29444), (65, 29429),

Gene: Herod\_31 Start: 28850, Stop: 28608, Start Num: 44

Candidate Starts for Herod\_31:

(Start: 44 @28850 has 1 MA's), (Start: 47 @28844 has 57 MA's), (Start: 49 @28829 has 6 MA's), (50, 28826), (Start: 52 @28805 has 3 MA's), (54, 28799), (Start: 55 @28796 has 1 MA's), (56, 28793), (65, 28697), (70, 28640),

Gene: Hitter\_34 Start: 28938, Stop: 28711, Start Num: 47

Candidate Starts for Hitter\_34:

(32, 28983), (Start: 47 @28938 has 57 MA's), (Start: 49 @28923 has 6 MA's), (50, 28920), (Start: 52 @28899 has 3 MA's), (Start: 55 @28890 has 1 MA's), (56, 28887), (59, 28839), (65, 28791), (67, 28746), (69, 28737),

Gene: Hortense\_32 Start: 28665, Stop: 28453, Start Num: 49

Candidate Starts for Hortense\_32:

(Start: 49 @28665 has 6 MA's), (Start: 52 @28641 has 3 MA's), (Start: 55 @28632 has 1 MA's), (56, 28629), (57, 28608), (65, 28533), (67, 28488), (69, 28479),

Gene: Howe\_32 Start: 28665, Stop: 28453, Start Num: 49

Candidate Starts for Howe\_32:

(Start: 49 @28665 has 6 MA's), (Start: 52 @28641 has 3 MA's), (Start: 55 @28632 has 1 MA's), (56, 28629), (57, 28608), (65, 28533), (67, 28488), (69, 28479),

Gene: Hugley\_30 Start: 28849, Stop: 28607, Start Num: 44

Candidate Starts for Hugley\_30:

(Start: 44 @28849 has 1 MA's), (Start: 47 @28843 has 57 MA's), (Start: 49 @28828 has 6 MA's), (50, 28825), (Start: 52 @28804 has 3 MA's), (54, 28798), (Start: 55 @28795 has 1 MA's), (56, 28792), (65, 28696), (70, 28639),

Gene: InLimbo\_32 Start: 25604, Stop: 25428, Start Num: 56

Candidate Starts for InLimbo\_32:

(Start: 47 @25655 has 57 MA's), (Start: 48 @25652 has 19 MA's), (Start: 49 @25640 has 6 MA's), (50, 25637), (Start: 52 @25616 has 3 MA's), (56, 25604), (61, 25538), (65, 25508), (69, 25454),

Gene: Invectra\_34 Start: 27219, Stop: 26992, Start Num: 47

Candidate Starts for Invectra\_34:

(Start: 47 @27219 has 57 MA's), (Start: 49 @27204 has 6 MA's), (Start: 52 @27180 has 3 MA's), (Start: 55 @27171 has 1 MA's), (56, 27168), (57, 27147), (65, 27072), (69, 27018),

Gene: Jalammah\_36 Start: 30107, Stop: 29880, Start Num: 47

Candidate Starts for Jalammah\_36:

(18, 30212), (29, 30176), (Start: 47 @30107 has 57 MA's), (Start: 48 @30104 has 19 MA's), (Start: 49 @30092 has 6 MA's), (50, 30089), (Start: 52 @30068 has 3 MA's), (56, 30056), (59, 30008), (65, 29960), (69, 29906),

Gene: Jambalaya\_37 Start: 33343, Stop: 33116, Start Num: 47

Candidate Starts for Jambalaya\_37:

(32, 33388), (42, 33352), (Start: 47 @33343 has 57 MA's), (Start: 49 @33328 has 6 MA's), (Start: 52 @33304 has 3 MA's), (56, 33292), (64, 33211), (65, 33196), (69, 33142),

Gene: JasperJr\_34 Start: 29704, Stop: 29477, Start Num: 47

Candidate Starts for JasperJr\_34:

(Start: 47 @29704 has 57 MA's), (Start: 49 @29689 has 6 MA's), (Start: 52 @29665 has 3 MA's), (56, 29653), (59, 29605), (65, 29557), (69, 29503),

Gene: JuJu\_36 Start: 29305, Stop: 29078, Start Num: 47

Candidate Starts for JuJu\_36:

(32, 29350), (Start: 47 @29305 has 57 MA's), (Start: 49 @29290 has 6 MA's), (Start: 52 @29266 has 3 MA's), (54, 29260), (Start: 55 @29257 has 1 MA's), (56, 29254), (64, 29173), (65, 29158),

Gene: KappaFarmDelta\_37 Start: 28565, Stop: 28341, Start Num: 48

Candidate Starts for KappaFarmDelta\_37:

(5, 28748), (6, 28730), (12, 28688), (45, 28571), (Start: 47 @28568 has 57 MA's), (Start: 48 @28565 has 19 MA's), (Start: 49 @28553 has 6 MA's), (50, 28550), (Start: 52 @28529 has 3 MA's), (Start: 55 @28520 has 1 MA's), (56, 28517), (62, 28448), (63, 28442), (66, 28418), (67, 28376), (69, 28367),

Gene: Kenna\_36 Start: 29098, Stop: 28871, Start Num: 47

Candidate Starts for Kenna\_36:

(Start: 43 @29107 has 7 MA's), (Start: 47 @29098 has 57 MA's), (Start: 48 @29095 has 19 MA's), (Start: 49 @29083 has 6 MA's), (Start: 52 @29059 has 3 MA's), (56, 29047), (59, 28999), (60, 28984), (63, 28972), (64, 28966), (65, 28951), (67, 28906),

Gene: Kuwabara\_36 Start: 29465, Stop: 29238, Start Num: 47

Candidate Starts for Kuwabara\_36:

(Start: 47 @29465 has 57 MA's), (Start: 48 @29462 has 19 MA's), (Start: 49 @29450 has 6 MA's), (Start: 52 @29426 has 3 MA's), (56, 29414), (59, 29366), (63, 29339), (64, 29333), (65, 29318), (67, 29273), (69, 29264),

Gene: Lilas\_35 Start: 29703, Stop: 29476, Start Num: 48

Candidate Starts for Lilas\_35:

(Start: 47 @29706 has 57 MA's), (Start: 48 @29703 has 19 MA's), (Start: 49 @29691 has 6 MA's), (Start: 52 @29667 has 3 MA's), (56, 29655), (64, 29574), (65, 29559), (67, 29514), (69, 29505),

Gene: Lton\_27 Start: 23149, Stop: 22922, Start Num: 47

Candidate Starts for Lton\_27:

(32, 23194), (Start: 47 @23149 has 57 MA's), (Start: 49 @23134 has 6 MA's), (Start: 52 @23110 has 3 MA's), (56, 23098), (59, 23050), (63, 23023), (64, 23017), (65, 23002), (67, 22957), (69, 22948),

Gene: Lutum\_37 Start: 29098, Stop: 28871, Start Num: 47

Candidate Starts for Lutum\_37:

(Start: 43 @29107 has 7 MA's), (Start: 47 @29098 has 57 MA's), (Start: 48 @29095 has 19 MA's), (Start: 49 @29083 has 6 MA's), (Start: 52 @29059 has 3 MA's), (56, 29047), (59, 28999), (60, 28984), (63, 28972), (64, 28966), (65, 28951), (67, 28906),

Gene: Lysidious\_35 Start: 29428, Stop: 29201, Start Num: 47

Candidate Starts for Lysidious\_35:

(Start: 43 @29437 has 7 MA's), (Start: 47 @29428 has 57 MA's), (Start: 49 @29413 has 6 MA's), (50, 29410), (Start: 52 @29389 has 3 MA's), (56, 29377), (59, 29329), (65, 29281), (69, 29227),

Gene: Malisha\_37 Start: 29280, Stop: 29056, Start Num: 48

Candidate Starts for Malisha\_37:

(Start: 43 @29292 has 7 MA's), (Start: 47 @29283 has 57 MA's), (Start: 48 @29280 has 19 MA's), (Start: 49 @29268 has 6 MA's), (Start: 52 @29244 has 3 MA's), (56, 29232), (64, 29151), (65, 29136), (67, 29091),

Gene: Matteo\_28 Start: 24466, Stop: 24239, Start Num: 47

Candidate Starts for Matteo\_28:

(8, 24595), (14, 24580), (16, 24577), (17, 24574), (32, 24511), (42, 24475), (Start: 47 @24466 has 57 MA's), (Start: 48 @24463 has 19 MA's), (Start: 49 @24451 has 6 MA's), (50, 24448), (Start: 52 @24427 has 3 MA's), (56, 24415), (59, 24367), (64, 24334), (65, 24319), (69, 24265),

Gene: MintFen\_33 Start: 29240, Stop: 29013, Start Num: 47

Candidate Starts for MintFen\_33:

(32, 29285), (Start: 47 @29240 has 57 MA's), (Start: 49 @29225 has 6 MA's), (50, 29222), (56, 29189), (59, 29141), (64, 29108), (65, 29093), (69, 29039),

Gene: Moonflower\_34 Start: 28635, Stop: 28411, Start Num: 48

Candidate Starts for Moonflower\_34:

(32, 28683), (Start: 47 @28638 has 57 MA's), (Start: 48 @28635 has 19 MA's), (Start: 49 @28623 has 6 MA's), (Start: 52 @28599 has 3 MA's), (56, 28587), (64, 28506), (65, 28491), (69, 28437),

Gene: Morkie\_30 Start: 25204, Stop: 24980, Start Num: 48

Candidate Starts for Morkie\_30:

(Start: 47 @25207 has 57 MA's), (Start: 48 @25204 has 19 MA's), (Start: 49 @25192 has 6 MA's), (50, 25189), (Start: 52 @25168 has 3 MA's), (56, 25156), (61, 25090), (65, 25060), (69, 25006),

Gene: MortyNRick\_34 Start: 28519, Stop: 28292, Start Num: 47

Candidate Starts for MortyNRick\_34:

(Start: 47 @28519 has 57 MA's), (Start: 48 @28516 has 19 MA's), (Start: 49 @28504 has 6 MA's), (50, 28501), (Start: 52 @28480 has 3 MA's), (56, 28468), (59, 28420), (63, 28393), (64, 28387), (65, 28372), (67, 28327), (69, 28318),

Gene: ODay\_40 Start: 30569, Stop: 30345, Start Num: 48

Candidate Starts for ODay\_40:

(Start: 43 @30581 has 7 MA's), (Start: 47 @30572 has 57 MA's), (Start: 48 @30569 has 19 MA's), (Start: 49 @30557 has 6 MA's), (Start: 52 @30533 has 3 MA's), (56, 30521), (64, 30440), (65, 30425), (69, 30371),

Gene: Obliviate\_32 Start: 28122, Stop: 27895, Start Num: 47

Candidate Starts for Obliviate\_32:

(Start: 47 @28122 has 57 MA's), (Start: 48 @28119 has 19 MA's), (Start: 49 @28107 has 6 MA's), (50, 28104), (Start: 52 @28083 has 3 MA's), (56, 28071), (65, 27975), (69, 27921),

Gene: Ohgeesy\_34 Start: 29848, Stop: 29636, Start Num: 49

Candidate Starts for Ohgeesy\_34:

(13, 29983), (27, 29935), (33, 29908), (45, 29866), (Start: 47 @29863 has 57 MA's), (Start: 49 @29848 has 6 MA's), (Start: 52 @29824 has 3 MA's), (54, 29818), (Start: 55 @29815 has 1 MA's), (56, 29812), (65, 29716), (69, 29662),

Gene: OneDirection\_28 Start: 23826, Stop: 23602, Start Num: 48

Candidate Starts for OneDirection\_28:

(Start: 47 @23829 has 57 MA's), (Start: 48 @23826 has 19 MA's), (Start: 49 @23814 has 6 MA's), (50, 23811), (Start: 52 @23790 has 3 MA's), (56, 23778), (61, 23712), (65, 23682), (69, 23628),

Gene: Oregano\_34 Start: 27096, Stop: 26869, Start Num: 47

Candidate Starts for Oregano\_34:

(Start: 47 @27096 has 57 MA's), (Start: 49 @27081 has 6 MA's), (Start: 55 @27048 has 1 MA's), (56, 27045), (57, 27024), (65, 26949), (69, 26895),

Gene: Pepperoni\_29 Start: 24972, Stop: 24748, Start Num: 48

Candidate Starts for Pepperoni\_29:

(Start: 47 @24975 has 57 MA's), (Start: 48 @24972 has 19 MA's), (Start: 49 @24960 has 6 MA's),  
(Start: 52 @24936 has 3 MA's), (56, 24924), (64, 24843), (65, 24828), (69, 24774),

Gene: Phabuloso\_34 Start: 28807, Stop: 28583, Start Num: 48

Candidate Starts for Phabuloso\_34:

(Start: 43 @28819 has 7 MA's), (Start: 47 @28810 has 57 MA's), (Start: 48 @28807 has 19 MA's),  
(Start: 49 @28795 has 6 MA's), (Start: 52 @28771 has 3 MA's), (56, 28759), (64, 28678), (65, 28663),  
(67, 28618), (69, 28609),

Gene: PhaoMing\_29 Start: 26379, Stop: 26155, Start Num: 48

Candidate Starts for PhaoMing\_29:

(32, 26427), (Start: 47 @26382 has 57 MA's), (Start: 48 @26379 has 19 MA's), (Start: 49 @26367 has  
6 MA's), (50, 26364), (Start: 52 @26343 has 3 MA's), (54, 26337), (Start: 55 @26334 has 1 MA's), (56,  
26331), (63, 26256), (64, 26250), (67, 26190), (69, 26181),

Gene: Phlop\_37 Start: 33648, Stop: 33421, Start Num: 47

Candidate Starts for Phlop\_37:

(32, 33693), (42, 33657), (Start: 47 @33648 has 57 MA's), (Start: 49 @33633 has 6 MA's), (Start: 52  
@33609 has 3 MA's), (56, 33597), (64, 33516), (65, 33501), (69, 33447),

Gene: PhorbesPhlower\_29 Start: 24583, Stop: 24356, Start Num: 47

Candidate Starts for PhorbesPhlower\_29:

(Start: 47 @24583 has 57 MA's), (50, 24565), (Start: 52 @24544 has 3 MA's), (56, 24532), (59, 24484),  
(63, 24457), (64, 24451), (65, 24436), (67, 24391), (69, 24382),

Gene: PhrostedPhlake\_36 Start: 29288, Stop: 29061, Start Num: 47

Candidate Starts for PhrostedPhlake\_36:

(2, 29564), (3, 29504), (26, 29363), (30, 29348), (38, 29312), (46, 29291), (Start: 47 @29288 has 57  
MA's), (Start: 48 @29285 has 19 MA's), (50, 29270), (Start: 52 @29249 has 3 MA's), (56, 29237), (65,  
29141), (69, 29087),

Gene: Pickett\_28 Start: 23332, Stop: 23105, Start Num: 47

Candidate Starts for Pickett\_28:

(Start: 47 @23332 has 57 MA's), (50, 23314), (Start: 52 @23293 has 3 MA's), (56, 23281), (59, 23233),  
(63, 23206), (64, 23200), (65, 23185), (67, 23140),

Gene: Portcullis\_38 Start: 33064, Stop: 32837, Start Num: 47

Candidate Starts for Portcullis\_38:

(32, 33109), (42, 33073), (Start: 47 @33064 has 57 MA's), (Start: 49 @33049 has 6 MA's), (Start: 52  
@33025 has 3 MA's), (56, 33013), (64, 32932), (65, 32917), (69, 32863),

Gene: Powerball\_35 Start: 28956, Stop: 28720, Start Num: 47

Candidate Starts for Powerball\_35:

(Start: 47 @28956 has 57 MA's), (Start: 49 @28941 has 6 MA's), (Start: 52 @28917 has 3 MA's),  
(Start: 55 @28908 has 1 MA's), (56, 28905), (57, 28884), (65, 28809), (69, 28755),

Gene: PrincePatrick\_33 Start: 27253, Stop: 27026, Start Num: 47

Candidate Starts for PrincePatrick\_33:

(Start: 47 @27253 has 57 MA's), (Start: 49 @27238 has 6 MA's), (Start: 52 @27214 has 3 MA's),  
(Start: 55 @27205 has 1 MA's), (56, 27202), (57, 27181), (62, 27133), (65, 27106),

Gene: PullumCavea\_37 Start: 33648, Stop: 33421, Start Num: 47

Candidate Starts for PullumCavea\_37:

(32, 33693), (42, 33657), (Start: 47 @33648 has 57 MA's), (Start: 49 @33633 has 6 MA's), (Start: 52 @33609 has 3 MA's), (56, 33597), (64, 33516), (65, 33501), (69, 33447),

Gene: RayTheFireFly\_35 Start: 29149, Stop: 28925, Start Num: 48

Candidate Starts for RayTheFireFly\_35:

(Start: 47 @29152 has 57 MA's), (Start: 48 @29149 has 19 MA's), (Start: 49 @29137 has 6 MA's), (50, 29134), (Start: 52 @29113 has 3 MA's), (56, 29101), (64, 29020), (65, 29005), (69, 28951),

Gene: Ruthy\_34 Start: 29303, Stop: 29040, Start Num: 34

Candidate Starts for Ruthy\_34:

(Start: 34 @29303 has 1 MA's), (45, 29270), (Start: 47 @29267 has 57 MA's), (Start: 49 @29252 has 6 MA's), (Start: 52 @29228 has 3 MA's), (54, 29222), (Start: 55 @29219 has 1 MA's), (56, 29216), (65, 29120), (69, 29066),

Gene: Sahara\_33 Start: 26218, Stop: 25991, Start Num: 47

Candidate Starts for Sahara\_33:

(11, 26341), (28, 26287), (36, 26245), (39, 26239), (Start: 47 @26218 has 57 MA's), (Start: 49 @26203 has 6 MA's), (50, 26200), (Start: 52 @26179 has 3 MA's), (56, 26167), (64, 26086), (65, 26071), (67, 26026), (68, 26020), (69, 26017),

Gene: Savage\_34 Start: 26557, Stop: 26321, Start Num: 43

Candidate Starts for Savage\_34:

(Start: 43 @26557 has 7 MA's), (Start: 47 @26548 has 57 MA's), (50, 26530), (Start: 52 @26509 has 3 MA's), (56, 26497), (64, 26416), (65, 26401), (67, 26356), (68, 26350), (69, 26347),

Gene: Savbucketdawg\_37 Start: 33343, Stop: 33116, Start Num: 47

Candidate Starts for Savbucketdawg\_37:

(32, 33388), (42, 33352), (Start: 47 @33343 has 57 MA's), (Start: 49 @33328 has 6 MA's), (Start: 52 @33304 has 3 MA's), (56, 33292), (64, 33211), (65, 33196), (69, 33142),

Gene: SharkTale\_37 Start: 33432, Stop: 33208, Start Num: 48

Candidate Starts for SharkTale\_37:

(21, 33525), (22, 33519), (23, 33516), (25, 33513), (29, 33504), (31, 33489), (Start: 47 @33435 has 57 MA's), (Start: 48 @33432 has 19 MA's), (Start: 49 @33420 has 6 MA's), (Start: 52 @33396 has 3 MA's), (56, 33384), (64, 33303), (65, 33288), (69, 33234),

Gene: Shlim410\_32 Start: 28665, Stop: 28453, Start Num: 49

Candidate Starts for Shlim410\_32:

(Start: 49 @28665 has 6 MA's), (Start: 52 @28641 has 3 MA's), (Start: 55 @28632 has 1 MA's), (56, 28629), (57, 28608), (65, 28533), (67, 28488), (69, 28479),

Gene: Sprinklemunch\_40 Start: 30648, Stop: 30493, Start Num: 57

Candidate Starts for Sprinklemunch\_40:

(Start: 47 @30720 has 57 MA's), (56, 30669), (57, 30648), (65, 30573),

Gene: Sproutie\_34 Start: 26557, Stop: 26321, Start Num: 43

Candidate Starts for Sproutie\_34:

(Start: 43 @26557 has 7 MA's), (Start: 47 @26548 has 57 MA's), (50, 26530), (Start: 52 @26509 has 3 MA's), (56, 26497), (64, 26416), (65, 26401), (67, 26356), (68, 26350), (69, 26347),

Gene: Squiddly\_38 Start: 30313, Stop: 30086, Start Num: 47

Candidate Starts for Squiddly\_38:

(Start: 43 @30322 has 7 MA's), (Start: 47 @30313 has 57 MA's), (Start: 48 @30310 has 19 MA's), (Start: 49 @30298 has 6 MA's), (Start: 52 @30274 has 3 MA's), (56, 30262), (64, 30181), (65, 30166), (67, 30121),

Gene: Suerte\_31 Start: 27445, Stop: 27218, Start Num: 47

Candidate Starts for Suerte\_31:

(Start: 47 @27445 has 57 MA's), (Start: 52 @27406 has 3 MA's), (56, 27394), (57, 27373), (65, 27298), (69, 27244),

Gene: ThankyouJordi\_35 Start: 30189, Stop: 30010, Start Num: 55

Candidate Starts for ThankyouJordi\_35:

(31, 30288), (Start: 47 @30237 has 57 MA's), (Start: 52 @30198 has 3 MA's), (Start: 55 @30189 has 1 MA's), (65, 30090), (66, 30087), (69, 30036),

Gene: TinyDot\_30 Start: 24493, Stop: 24266, Start Num: 47

Candidate Starts for TinyDot\_30:

(32, 24538), (Start: 47 @24493 has 57 MA's), (Start: 49 @24478 has 6 MA's), (51, 24469), (Start: 52 @24454 has 3 MA's), (56, 24442), (59, 24394), (63, 24367), (64, 24361), (65, 24346), (67, 24301), (69, 24292),

Gene: Togo\_37 Start: 33553, Stop: 33326, Start Num: 47

Candidate Starts for Togo\_37:

(32, 33598), (42, 33562), (Start: 47 @33553 has 57 MA's), (Start: 49 @33538 has 6 MA's), (Start: 52 @33514 has 3 MA's), (56, 33502), (64, 33421), (65, 33406), (69, 33352),

Gene: Twinkle\_32 Start: 29724, Stop: 29512, Start Num: 49

Candidate Starts for Twinkle\_32:

(Start: 49 @29724 has 6 MA's), (Start: 52 @29700 has 3 MA's), (Start: 55 @29691 has 1 MA's), (56, 29688), (57, 29667), (65, 29592), (67, 29547), (69, 29538),

Gene: UmaThurman\_31 Start: 28735, Stop: 28508, Start Num: 47

Candidate Starts for UmaThurman\_31:

(Start: 47 @28735 has 57 MA's), (Start: 49 @28720 has 6 MA's), (Start: 52 @28696 has 3 MA's), (56, 28684), (59, 28636), (65, 28588), (69, 28534),

Gene: VanDeWege\_41 Start: 33791, Stop: 33564, Start Num: 47

Candidate Starts for VanDeWege\_41:

(32, 33836), (42, 33800), (Start: 47 @33791 has 57 MA's), (Start: 49 @33776 has 6 MA's), (Start: 52 @33752 has 3 MA's), (56, 33740), (59, 33692), (64, 33659), (65, 33644), (69, 33590),

Gene: Walrus\_36 Start: 29330, Stop: 29094, Start Num: 43

Candidate Starts for Walrus\_36:

(19, 29423), (20, 29420), (24, 29399), (39, 29345), (40, 29336), (Start: 43 @29330 has 7 MA's), (Start: 47 @29321 has 57 MA's), (Start: 49 @29306 has 6 MA's), (Start: 52 @29282 has 3 MA's), (56, 29270), (63, 29195), (64, 29189), (65, 29174), (69, 29120),

Gene: Whitney\_40 Start: 32148, Stop: 31924, Start Num: 48

Candidate Starts for Whitney\_40:

(Start: 47 @32151 has 57 MA's), (Start: 48 @32148 has 19 MA's), (Start: 49 @32136 has 6 MA's), (Start: 52 @32112 has 3 MA's), (56, 32100), (59, 32052), (63, 32025), (64, 32019), (65, 32004), (67, 31959), (69, 31950),

Gene: William\_35 Start: 28714, Stop: 28487, Start Num: 47

Candidate Starts for William\_35:

(Start: 47 @28714 has 57 MA's), (Start: 49 @28699 has 6 MA's), (Start: 52 @28675 has 3 MA's), (56, 28663), (57, 28642), (63, 28588), (65, 28567), (67, 28522),

Gene: Wisp\_30 Start: 27726, Stop: 27493, Start Num: 47

Candidate Starts for Wisp\_30:

(Start: 47 @27726 has 57 MA's), (Start: 48 @27723 has 19 MA's), (Start: 49 @27711 has 6 MA's), (Start: 52 @27687 has 3 MA's), (56, 27675), (59, 27627), (64, 27594), (65, 27579), (69, 27525), (71, 27501),

Gene: Wocket\_36 Start: 28733, Stop: 28506, Start Num: 47

Candidate Starts for Wocket\_36:

(5, 28913), (6, 28895), (12, 28853), (45, 28736), (Start: 47 @28733 has 57 MA's), (Start: 48 @28730 has 19 MA's), (Start: 49 @28718 has 6 MA's), (50, 28715), (Start: 52 @28694 has 3 MA's), (Start: 55 @28685 has 1 MA's), (56, 28682), (62, 28613), (63, 28607), (66, 28583), (67, 28541), (69, 28532),

Gene: Yinzer\_33 Start: 26557, Stop: 26321, Start Num: 43

Candidate Starts for Yinzer\_33:

(Start: 43 @26557 has 7 MA's), (Start: 47 @26548 has 57 MA's), (50, 26530), (Start: 52 @26509 has 3 MA's), (56, 26497), (64, 26416), (65, 26401), (67, 26356), (68, 26350), (69, 26347),

Gene: YungMoney\_39 Start: 34979, Stop: 34755, Start Num: 48

Candidate Starts for YungMoney\_39:

(21, 35072), (22, 35066), (23, 35063), (25, 35060), (29, 35051), (31, 35036), (Start: 47 @34982 has 57 MA's), (Start: 48 @34979 has 19 MA's), (Start: 49 @34967 has 6 MA's), (Start: 52 @34943 has 3 MA's), (56, 34931), (65, 34835), (67, 34790), (69, 34781),

Gene: ZAYM\_35 Start: 28842, Stop: 28630, Start Num: 49

Candidate Starts for ZAYM\_35:

(1, 29226), (9, 28986), (10, 28980), (21, 28944), (23, 28935), (31, 28911), (Start: 47 @28857 has 57 MA's), (Start: 48 @28854 has 19 MA's), (Start: 49 @28842 has 6 MA's), (Start: 52 @28818 has 3 MA's), (54, 28812), (Start: 55 @28809 has 1 MA's), (56, 28806), (64, 28725), (65, 28710), (69, 28656),

Gene: Zarbodnamra\_33 Start: 28639, Stop: 28412, Start Num: 47

Candidate Starts for Zarbodnamra\_33:

(32, 28684), (Start: 47 @28639 has 57 MA's), (Start: 49 @28624 has 6 MA's), (50, 28621), (Start: 52 @28600 has 3 MA's), (56, 28588), (59, 28540), (61, 28522), (65, 28492), (67, 28447), (69, 28438), (70, 28435),

Gene: ZiggyZoo\_34 Start: 28938, Stop: 28711, Start Num: 47

Candidate Starts for ZiggyZoo\_34:

(Start: 47 @28938 has 57 MA's), (Start: 48 @28935 has 19 MA's), (Start: 49 @28923 has 6 MA's), (50, 28920), (Start: 52 @28899 has 3 MA's), (56, 28887), (65, 28791), (69, 28737),

Gene: Zilla\_35 Start: 29547, Stop: 29320, Start Num: 47

Candidate Starts for Zilla\_35:

(32, 29592), (Start: 47 @29547 has 57 MA's), (Start: 48 @29544 has 19 MA's), (Start: 49 @29532 has 6 MA's), (50, 29529), (Start: 52 @29508 has 3 MA's), (56, 29496), (64, 29415), (65, 29400),