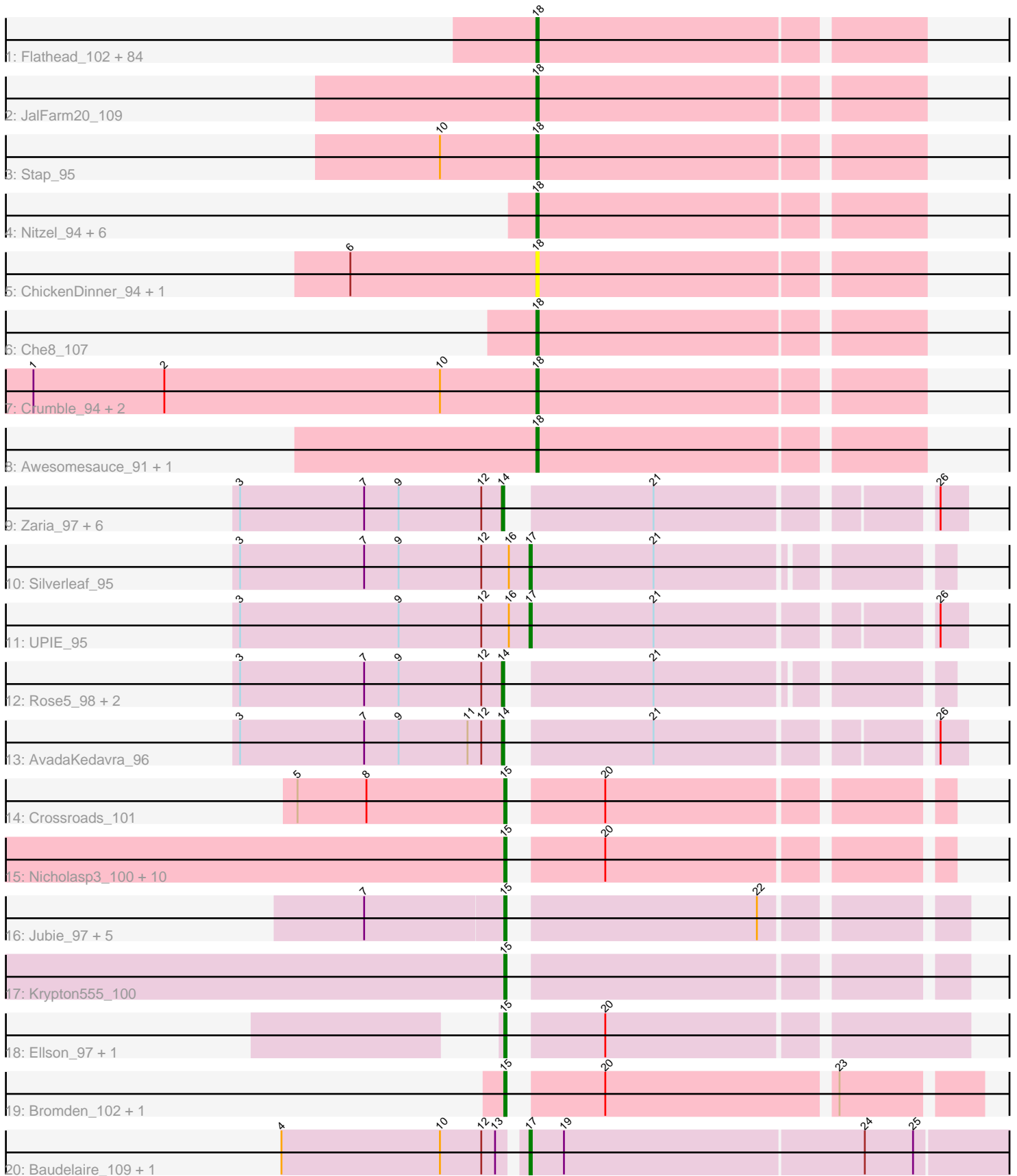


Pham 157670



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 157670 Report

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

Pham number 157670 has 140 members, 17 are drafts.

Phages represented in each track:

- Track 1 : Flathead\_102, Brocalys\_92, PhesterPhotato\_103, CaptainTrips\_102, Guppsters\_94, Llama\_107, DotProduct\_94, KristaRAM\_108, ShowerHandel\_98, Clifton\_92, Eish\_105, MisterCuddles\_100, DLane\_100, Zerg\_98, MilleniumForce\_100, Ochi17\_106, Bubbles123\_94, MilanaBonita\_93, DeadP\_100, Filuzino\_100, IbOuu\_96, AlpineSix\_98, Sarma624\_102, BobaPhett\_102, Ardmore\_84, Ms6\_102, Coco12\_101, Mozy\_104, Rita\_100, Philus\_104, Seagreen\_101, Seabastian\_107, Chuckly\_97, Aubs\_100, LastJedi\_91, Jinglebell\_107, Pippy\_98, Cerasum\_99, LittleShirley\_107, VRedHorse\_101, Hamulus\_100, Girr\_99, Batiatus\_100, SG4\_101, Cabrinians\_97, Burwell21\_94, Lizziana\_101, OfUltron\_107, Mutaforma13\_101, Mova\_102, Kingsley\_109, Royals2015\_104, Hegedechwinu\_108, Oksu\_104, Karhdo\_95, Phalconet\_101, Taj\_106, Tweety\_101, Firehouse51\_94, James\_104, Maravista\_97, SwagPiggett\_102, Priscilla\_101, NormanBulbieJr\_98, Velveteen\_97, BigPhil\_97, Blexus\_97, Martik\_99, Wee\_103, Melissauren88\_90, Bipolar\_102, Phanphagia\_105, Tootsieroll\_94, Whatsapiecost\_94, Cornucopia\_100, Koella\_93, Kenuha5\_92, Fruitloop\_98, Emma\_105, Dante\_98, Zizzle\_103, DosHalletts\_100, Akhila\_94, XFactor\_91, Shauna1\_102
- Track 2 : JalFarm20\_109
- Track 3 : Stap\_95
- Track 4 : Nitzel\_94, Florinda\_112, StAnnes\_104, Girafales\_109, ShroomBoi\_98, Quico\_109, Job42\_101
- Track 5 : ChickenDinner\_94, DocMcStuffins\_87
- Track 6 : Che8\_107
- Track 7 : Crumble\_94, OlympiaSaint\_104, Sabbb\_103
- Track 8 : Awesomesauce\_91, Beakin\_92
- Track 9 : Zaria\_97, Wyatt2\_97, Tyson\_98, Halena\_94, MAckerman\_93, Acquire49\_96, Calm\_98
- Track 10 : Silverleaf\_95
- Track 11 : UPIE\_95
- Track 12 : Rose5\_98, JoeDirt\_98, Enceladus\_93
- Track 13 : AvadaKedavra\_96
- Track 14 : Crossroads\_101
- Track 15 : Nicholasp3\_100, LilDestine\_98, Bazzle\_97, Archie\_97, Finemlucis\_101, Itos\_100, Kahlid\_99, Gabriela\_100, Zakai\_101, Rumpelstiltskin\_96, BobsGarage\_99
- Track 16 : Jubie\_97, Finnry\_98, MsGreen\_98, Clautastrophe\_96, Bellis\_96, Samty\_97
- Track 17 : Krypton555\_100

- Track 18 : Ellson\_97, DuncansLeg\_99
- Track 19 : Bromden\_102, Douge\_101
- Track 20 : Baudelaire\_109, Aegeus\_109

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

The start number called the most often in the published annotations is 18, it was called in 89 of the 123 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Akhila\_94, AlpineSix\_98, Ardmore\_84, Aubs\_100, Awesomesauce\_91, Batiatus\_100, Beakin\_92, BigPhil\_97, Bipolar\_102, Blexus\_97, BobaPhett\_102, Brocalys\_92, Bubbles123\_94, Burwell21\_94, Cabrinians\_97, CaptainTrips\_102, Cerasum\_99, Che8\_107, ChickenDinner\_94, Chuckly\_97, Clifton\_92, Coco12\_101, Cornucopia\_100, Crumble\_94, DLane\_100, Dante\_98, DeadP\_100, DocMcStuffins\_87, DosHalletts\_100, DotProduct\_94, Eish\_105, Emma\_105, Filuzino\_100, Firehouse51\_94, Flathead\_102, Florinda\_112, Fruitloop\_98, Girafales\_109, Girr\_99, Guppsters\_94, Hamulus\_100, Hegedechwinu\_108, IbOuu\_96, JalFarm20\_109, James\_104, Jinglebell\_107, Job42\_101, Karhdo\_95, Kenuha5\_92, Kingsley\_109, Koella\_93, KristaRAM\_108, LastJedi\_91, LittleShirley\_107, Lizziana\_101, Llama\_107, Maravista\_97, Martik\_99, Melissauren88\_90, MilanaBonita\_93, MilleniumForce\_100, MisterCuddles\_100, Mova\_102, Mozy\_104, Ms6\_102, Mutaforma13\_101, Nitzel\_94, NormanBulbieJr\_98, Ochi17\_106, OfUltron\_107, Oksu\_104, OlympiaSaint\_104, Phalconet\_101, Phanphagia\_105, PhesterPhotato\_103, Philus\_104, Pippy\_98, Priscilla\_101, Quico\_109, Rita\_100, Royals2015\_104, SG4\_101, Sabbb\_103, Sarma624\_102, Sebastian\_107, Seagreen\_101, Shauna1\_102, ShowerHandel\_98, ShroomBoi\_98, StAnnes\_104, Stap\_95, SwagPiggett\_102, Taj\_106, Tootsieroll\_94, Tweety\_101, VRedHorse\_101, Velveteen\_97, Wee\_103, Whatsapiecost\_94, XFactor\_91, Zerg\_98, Zizzle\_103,

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

- 

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

- Acquire49\_96, Aegeus\_109, Archie\_97, AvadaKedavra\_96, Baudelaire\_109, Bazzle\_97, Bellis\_96, BobsGarage\_99, Bromden\_102, Calm\_98, Clautastrophe\_96, Crossroads\_101, Douge\_101, DuncansLeg\_99, Ellson\_97, Enceladus\_93, Finemlucis\_101, Finnry\_98, Gabriela\_100, Halena\_94, Itos\_100, JoeDirt\_98, Jubie\_97, Kahlid\_99, Krypton555\_100, LilDestine\_98, MAckerman\_93, MsGreen\_98, Nicholasp3\_100, Rose5\_98, Rumpelstiltskin\_96, Samty\_97, Silverleaf\_95, Tyson\_98, UPIE\_95, Wyatt2\_97, Zakai\_101, Zaria\_97,

**Summary by start number:**

Start 14:

- Found in 11 of 140 ( 7.9% ) of genes in pham
- Manual Annotations of this start: 10 of 123
- Called 100.0% of time when present

- Phage (with cluster) where this start called: Acquire49\_96 (L1), AvadaKedavra\_96 (L1), Calm\_98 (L1), Enceladus\_93 (L1), Halena\_94 (L1), JoeDirt\_98 (L1), MAckerman\_93 (L1), Rose5\_98 (L1), Tyson\_98 (L1), Wyatt2\_97 (L1), Zaria\_97 (L1),

#### Start 15:

- Found in 23 of 140 ( 16.4% ) of genes in pham
- Manual Annotations of this start: 20 of 123
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Archie\_97 (L2), Bazzle\_97 (L2), Bellis\_96 (L3), BobsGarage\_99 (L2), Bromden\_102 (L4), Clautastrophe\_96 (L3), Crossroads\_101 (L2), Douge\_101 (L4), DuncansLeg\_99 (L3), Ellson\_97 (L3), Finemlucis\_101 (L2), Finnry\_98 (L3), Gabriela\_100 (L2), Itos\_100 (L2), Jubie\_97 (L3), Kahlid\_99 (L2), Krypton555\_100 (L3), LilDestine\_98 (L2), MsGreen\_98 (L3), Nicholasp3\_100 (L2), Rumpelstiltskin\_96 (L2), Samty\_97 (L3), Zakai\_101 (L2),

#### Start 17:

- Found in 4 of 140 ( 2.9% ) of genes in pham
- Manual Annotations of this start: 4 of 123
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Aegeus\_109 (L5), Baudelaire\_109 (L5), Silverleaf\_95 (L1), UPIE\_95 (L1),

#### Start 18:

- Found in 102 of 140 ( 72.9% ) of genes in pham
- Manual Annotations of this start: 89 of 123
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Akhila\_94 (F1), AlpineSix\_98 (F1), Ardmore\_84 (F1), Aubs\_100 (F1), Awesomesauce\_91 (F1), Batiatus\_100 (F1), Beakin\_92 (F1), BigPhil\_97 (F1), Bipolar\_102 (F1), Blexus\_97 (F1), BobaPhett\_102 (F1), Brocalys\_92 (F1), Bubbles123\_94 (F1), Burwell21\_94 (F1), Cabrinians\_97 (F1), CaptainTrips\_102 (F1), Cerasum\_99 (F1), Che8\_107 (F1), ChickenDinner\_94 (F1), Chuckly\_97 (F1), Clifton\_92 (F1), Coco12\_101 (F1), Cornucopia\_100 (F1), Crumble\_94 (F1), DLane\_100 (F1), Dante\_98 (F1), DeadP\_100 (F1), DocMcStuffins\_87 (F1), DosHalletts\_100 (F1), DotProduct\_94 (F1), Eish\_105 (F1), Emma\_105 (F1), Filuzino\_100 (F1), Firehouse51\_94 (F1), Flathead\_102 (F1), Florinda\_112 (F1), Fruitloop\_98 (F1), Girafales\_109 (F1), Girr\_99 (F1), Guppsters\_94 (F1), Hamulus\_100 (F1), Hegedechwinu\_108 (F1), IbOuu\_96 (F1), JalFarm20\_109 (F1), James\_104 (F1), Jinglebell\_107 (F1), Job42\_101 (F1), Karhdo\_95 (F1), Kenuha5\_92 (F1), Kingsley\_109 (F1), Koella\_93 (F1), KristaRAM\_108 (F1), LastJedi\_91 (F1), LittleShirley\_107 (F1), Lizziana\_101 (F1), Llama\_107 (F1), Maravista\_97 (F1), Martik\_99 (F1), Melissauren88\_90 (F1), MilanaBonita\_93 (F1), MilleniumForce\_100 (F1), MisterCuddles\_100 (F1), Mova\_102 (F1), Mozy\_104 (F1), Ms6\_102 (F1), Mutaforma13\_101 (F1), Nitzel\_94 (F1), NormanBulbieJr\_98 (F1), Ochi17\_106 (F1), OfUltron\_107 (F1), Oksu\_104 (F1), OlympiaSaint\_104 (F1), Phalconet\_101 (F1), Phanphagia\_105 (F1), PhesterPhotato\_103 (F1), Philus\_104 (F1), Pippy\_98 (F1), Priscilla\_101 (F1), Quico\_109 (F1), Rita\_100 (F1), Royals2015\_104 (F1), SG4\_101 (F1), Sabbb\_103 (F1), Sarma624\_102 (F1), Sebastian\_107 (F1), Seagreen\_101 (F1), Shauna1\_102 (F1), ShowerHandel\_98 (F1), ShroomBoi\_98 (F1), StAnnes\_104 (F1), Stap\_95 (F1), SwagPiggett\_102 (F1), Taj\_106 (F1), Tootsieroll\_94 (F1), Tweety\_101 (F1), VRedHorse\_101 (F1), Velveteen\_97 (F1), Wee\_103 (F1), Whatsapiecost\_94 (F1), XFactor\_91 (F1), Zerg\_98 (F1), Zizzle\_103 (F1),

## Summary by clusters:

There are 6 clusters represented in this pham: F1, L4, L5, L2, L3, L1,

Info for manual annotations of cluster F1:

- Start number 18 was manually annotated 89 times for cluster F1.

Info for manual annotations of cluster L1:

- Start number 14 was manually annotated 10 times for cluster L1.
- Start number 17 was manually annotated 2 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 15 was manually annotated 12 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 15 was manually annotated 7 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 15 was manually annotated 1 time for cluster L4.

Info for manual annotations of cluster L5:

- Start number 17 was manually annotated 2 times for cluster L5.

## **Gene Information:**

Gene: Acquire49\_96 Start: 59453, Stop: 59626, Start Num: 14

Candidate Starts for Acquire49\_96:

(3, 59339), (7, 59393), (9, 59408), (12, 59444), (Start: 14 @59453 has 10 MA's), (21, 59507), (26, 59615),

Gene: Aegeus\_109 Start: 63189, Stop: 63410, Start Num: 17

Candidate Starts for Aegeus\_109:

(4, 63087), (10, 63156), (12, 63174), (13, 63180), (Start: 17 @63189 has 4 MA's), (19, 63204), (24, 63333), (25, 63354),

Gene: Akhila\_94 Start: 52864, Stop: 53025, Start Num: 18

Candidate Starts for Akhila\_94:

(Start: 18 @52864 has 89 MA's),

Gene: AlpineSix\_98 Start: 53582, Stop: 53743, Start Num: 18

Candidate Starts for AlpineSix\_98:

(Start: 18 @53582 has 89 MA's),

Gene: Archie\_97 Start: 61162, Stop: 61338, Start Num: 15

Candidate Starts for Archie\_97:

(Start: 15 @61162 has 20 MA's), (20, 61195),

Gene: Ardmore\_84 Start: 48753, Stop: 48914, Start Num: 18

Candidate Starts for Ardmore\_84:

(Start: 18 @48753 has 89 MA's),

Gene: Aubs\_100 Start: 55755, Stop: 55916, Start Num: 18  
Candidate Starts for Aubs\_100:  
(Start: 18 @55755 has 89 MA's),

Gene: AvadaKedavra\_96 Start: 59565, Stop: 59738, Start Num: 14  
Candidate Starts for AvadaKedavra\_96:  
(3, 59451), (7, 59505), (9, 59520), (11, 59550), (12, 59556), (Start: 14 @59565 has 10 MA's), (21, 59619), (26, 59727),

Gene: Awesomesauce\_91 Start: 54238, Stop: 54399, Start Num: 18  
Candidate Starts for Awesomesauce\_91:  
(Start: 18 @54238 has 89 MA's),

Gene: Batiatus\_100 Start: 54303, Stop: 54464, Start Num: 18  
Candidate Starts for Batiatus\_100:  
(Start: 18 @54303 has 89 MA's),

Gene: Baudelaire\_109 Start: 63189, Stop: 63410, Start Num: 17  
Candidate Starts for Baudelaire\_109:  
(4, 63087), (10, 63156), (12, 63174), (13, 63180), (Start: 17 @63189 has 4 MA's), (19, 63204), (24, 63333), (25, 63354),

Gene: Bazzle\_97 Start: 61718, Stop: 61894, Start Num: 15  
Candidate Starts for Bazzle\_97:  
(Start: 15 @61718 has 20 MA's), (20, 61751),

Gene: Beakin\_92 Start: 51276, Stop: 51437, Start Num: 18  
Candidate Starts for Beakin\_92:  
(Start: 18 @51276 has 89 MA's),

Gene: Bellis\_96 Start: 61495, Stop: 61671, Start Num: 15  
Candidate Starts for Bellis\_96:  
(7, 61435), (Start: 15 @61495 has 20 MA's), (22, 61594),

Gene: BigPhil\_97 Start: 51095, Stop: 51256, Start Num: 18  
Candidate Starts for BigPhil\_97:  
(Start: 18 @51095 has 89 MA's),

Gene: Bipolar\_102 Start: 56072, Stop: 56233, Start Num: 18  
Candidate Starts for Bipolar\_102:  
(Start: 18 @56072 has 89 MA's),

Gene: Blexus\_97 Start: 54682, Stop: 54843, Start Num: 18  
Candidate Starts for Blexus\_97:  
(Start: 18 @54682 has 89 MA's),

Gene: BobaPhett\_102 Start: 56361, Stop: 56522, Start Num: 18  
Candidate Starts for BobaPhett\_102:  
(Start: 18 @56361 has 89 MA's),

Gene: BobsGarage\_99 Start: 61936, Stop: 62106, Start Num: 15  
Candidate Starts for BobsGarage\_99:  
(Start: 15 @61936 has 20 MA's), (20, 61969),

Gene: Brocalys\_92 Start: 51840, Stop: 52001, Start Num: 18  
Candidate Starts for Brocalys\_92:  
(Start: 18 @51840 has 89 MA's),

Gene: Bromden\_102 Start: 62718, Stop: 62903, Start Num: 15  
Candidate Starts for Bromden\_102:  
(Start: 15 @62718 has 20 MA's), (20, 62751), (23, 62847),

Gene: Bubbles123\_94 Start: 54115, Stop: 54276, Start Num: 18  
Candidate Starts for Bubbles123\_94:  
(Start: 18 @54115 has 89 MA's),

Gene: Burwell21\_94 Start: 54126, Stop: 54287, Start Num: 18  
Candidate Starts for Burwell21\_94:  
(Start: 18 @54126 has 89 MA's),

Gene: Cabrinians\_97 Start: 53761, Stop: 53922, Start Num: 18  
Candidate Starts for Cabrinians\_97:  
(Start: 18 @53761 has 89 MA's),

Gene: Calm\_98 Start: 59832, Stop: 60005, Start Num: 14  
Candidate Starts for Calm\_98:  
(3, 59718), (7, 59772), (9, 59787), (12, 59823), (Start: 14 @59832 has 10 MA's), (21, 59886), (26, 59994),

Gene: CaptainTrips\_102 Start: 53941, Stop: 54102, Start Num: 18  
Candidate Starts for CaptainTrips\_102:  
(Start: 18 @53941 has 89 MA's),

Gene: Cerasum\_99 Start: 51113, Stop: 51274, Start Num: 18  
Candidate Starts for Cerasum\_99:  
(Start: 18 @51113 has 89 MA's),

Gene: Che8\_107 Start: 55993, Stop: 56154, Start Num: 18  
Candidate Starts for Che8\_107:  
(Start: 18 @55993 has 89 MA's),

Gene: ChickenDinner\_94 Start: 54002, Stop: 54163, Start Num: 18  
Candidate Starts for ChickenDinner\_94:  
(6, 53921), (Start: 18 @54002 has 89 MA's),

Gene: Chuckly\_97 Start: 50983, Stop: 51144, Start Num: 18  
Candidate Starts for Chuckly\_97:  
(Start: 18 @50983 has 89 MA's),

Gene: Clautastrophe\_96 Start: 61490, Stop: 61666, Start Num: 15  
Candidate Starts for Clautastrophe\_96:  
(7, 61430), (Start: 15 @61490 has 20 MA's), (22, 61589),

Gene: Clifton\_92 Start: 52815, Stop: 52976, Start Num: 18  
Candidate Starts for Clifton\_92:  
(Start: 18 @52815 has 89 MA's),

Gene: Coco12\_101 Start: 55170, Stop: 55331, Start Num: 18

Candidate Starts for Coco12\_101:

(Start: 18 @55170 has 89 MA's),

Gene: Cornucopia\_100 Start: 52241, Stop: 52402, Start Num: 18

Candidate Starts for Cornucopia\_100:

(Start: 18 @52241 has 89 MA's),

Gene: Crossroads\_101 Start: 61823, Stop: 61993, Start Num: 15

Candidate Starts for Crossroads\_101:

(5, 61733), (8, 61763), (Start: 15 @61823 has 20 MA's), (20, 61856),

Gene: Crumble\_94 Start: 50509, Stop: 50670, Start Num: 18

Candidate Starts for Crumble\_94:

(1, 50290), (2, 50347), (10, 50467), (Start: 18 @50509 has 89 MA's),

Gene: DLane\_100 Start: 55223, Stop: 55384, Start Num: 18

Candidate Starts for DLane\_100:

(Start: 18 @55223 has 89 MA's),

Gene: Dante\_98 Start: 55573, Stop: 55734, Start Num: 18

Candidate Starts for Dante\_98:

(Start: 18 @55573 has 89 MA's),

Gene: DeadP\_100 Start: 52801, Stop: 52962, Start Num: 18

Candidate Starts for DeadP\_100:

(Start: 18 @52801 has 89 MA's),

Gene: DocMcStuffins\_87 Start: 55632, Stop: 55793, Start Num: 18

Candidate Starts for DocMcStuffins\_87:

(6, 55551), (Start: 18 @55632 has 89 MA's),

Gene: DosHalletts\_100 Start: 54563, Stop: 54724, Start Num: 18

Candidate Starts for DosHalletts\_100:

(Start: 18 @54563 has 89 MA's),

Gene: DotProduct\_94 Start: 51930, Stop: 52091, Start Num: 18

Candidate Starts for DotProduct\_94:

(Start: 18 @51930 has 89 MA's),

Gene: Douge\_101 Start: 61402, Stop: 61587, Start Num: 15

Candidate Starts for Douge\_101:

(Start: 15 @61402 has 20 MA's), (20, 61435), (23, 61531),

Gene: DuncansLeg\_99 Start: 61656, Stop: 61838, Start Num: 15

Candidate Starts for DuncansLeg\_99:

(Start: 15 @61656 has 20 MA's), (20, 61689),

Gene: Eish\_105 Start: 55239, Stop: 55400, Start Num: 18

Candidate Starts for Eish\_105:

(Start: 18 @55239 has 89 MA's),



Gene: Ellson\_97 Start: 61971, Stop: 62153, Start Num: 15  
Candidate Starts for Ellson\_97:  
(Start: 15 @61971 has 20 MA's), (20, 62004),

Gene: Emma\_105 Start: 53507, Stop: 53668, Start Num: 18  
Candidate Starts for Emma\_105:  
(Start: 18 @53507 has 89 MA's),

Gene: Enceladus\_93 Start: 59494, Stop: 59661, Start Num: 14  
Candidate Starts for Enceladus\_93:  
(3, 59380), (7, 59434), (9, 59449), (12, 59485), (Start: 14 @59494 has 10 MA's), (21, 59548),

Gene: Filuzino\_100 Start: 55918, Stop: 56079, Start Num: 18  
Candidate Starts for Filuzino\_100:  
(Start: 18 @55918 has 89 MA's),

Gene: Finemlucis\_101 Start: 62639, Stop: 62809, Start Num: 15  
Candidate Starts for Finemlucis\_101:  
(Start: 15 @62639 has 20 MA's), (20, 62672),

Gene: Finnry\_98 Start: 61843, Stop: 62019, Start Num: 15  
Candidate Starts for Finnry\_98:  
(7, 61783), (Start: 15 @61843 has 20 MA's), (22, 61942),

Gene: Firehouse51\_94 Start: 54735, Stop: 54896, Start Num: 18  
Candidate Starts for Firehouse51\_94:  
(Start: 18 @54735 has 89 MA's),

Gene: Flathead\_102 Start: 54239, Stop: 54400, Start Num: 18  
Candidate Starts for Flathead\_102:  
(Start: 18 @54239 has 89 MA's),

Gene: Florinda\_112 Start: 56324, Stop: 56485, Start Num: 18  
Candidate Starts for Florinda\_112:  
(Start: 18 @56324 has 89 MA's),

Gene: Fruitloop\_98 Start: 55083, Stop: 55244, Start Num: 18  
Candidate Starts for Fruitloop\_98:  
(Start: 18 @55083 has 89 MA's),

Gene: Gabriela\_100 Start: 60925, Stop: 61095, Start Num: 15  
Candidate Starts for Gabriela\_100:  
(Start: 15 @60925 has 20 MA's), (20, 60958),

Gene: Girafales\_109 Start: 55929, Stop: 56090, Start Num: 18  
Candidate Starts for Girafales\_109:  
(Start: 18 @55929 has 89 MA's),

Gene: Girr\_99 Start: 54813, Stop: 54974, Start Num: 18  
Candidate Starts for Girr\_99:  
(Start: 18 @54813 has 89 MA's),

Gene: Guppsters\_94 Start: 51924, Stop: 52085, Start Num: 18

Candidate Starts for Guppsters\_94:  
(Start: 18 @51924 has 89 MA's),

Gene: Halena\_94 Start: 58748, Stop: 58921, Start Num: 14  
Candidate Starts for Halena\_94:  
(3, 58634), (7, 58688), (9, 58703), (12, 58739), (Start: 14 @58748 has 10 MA's), (21, 58802), (26, 58910),

Gene: Hamulus\_100 Start: 53768, Stop: 53929, Start Num: 18  
Candidate Starts for Hamulus\_100:  
(Start: 18 @53768 has 89 MA's),

Gene: Hegedechwinu\_108 Start: 54304, Stop: 54465, Start Num: 18  
Candidate Starts for Hegedechwinu\_108:  
(Start: 18 @54304 has 89 MA's),

Gene: lbOuu\_96 Start: 51910, Stop: 52071, Start Num: 18  
Candidate Starts for lbOuu\_96:  
(Start: 18 @51910 has 89 MA's),

Gene: Itos\_100 Start: 60485, Stop: 60655, Start Num: 15  
Candidate Starts for Itos\_100:  
(Start: 15 @60485 has 20 MA's), (20, 60518),

Gene: JalFarm20\_109 Start: 56245, Stop: 56406, Start Num: 18  
Candidate Starts for JalFarm20\_109:  
(Start: 18 @56245 has 89 MA's),

Gene: James\_104 Start: 56416, Stop: 56577, Start Num: 18  
Candidate Starts for James\_104:  
(Start: 18 @56416 has 89 MA's),

Gene: Jinglebell\_107 Start: 55692, Stop: 55853, Start Num: 18  
Candidate Starts for Jinglebell\_107:  
(Start: 18 @55692 has 89 MA's),

Gene: Job42\_101 Start: 56590, Stop: 56751, Start Num: 18  
Candidate Starts for Job42\_101:  
(Start: 18 @56590 has 89 MA's),

Gene: JoeDirt\_98 Start: 60423, Stop: 60590, Start Num: 14  
Candidate Starts for JoeDirt\_98:  
(3, 60309), (7, 60363), (9, 60378), (12, 60414), (Start: 14 @60423 has 10 MA's), (21, 60477),

Gene: Jubie\_97 Start: 61625, Stop: 61801, Start Num: 15  
Candidate Starts for Jubie\_97:  
(7, 61565), (Start: 15 @61625 has 20 MA's), (22, 61724),

Gene: Kahlid\_99 Start: 61290, Stop: 61460, Start Num: 15  
Candidate Starts for Kahlid\_99:  
(Start: 15 @61290 has 20 MA's), (20, 61323),

Gene: Karhdo\_95 Start: 52179, Stop: 52340, Start Num: 18

Candidate Starts for Karhdo\_95:  
(Start: 18 @52179 has 89 MA's),

Gene: Kenuha5\_92 Start: 53592, Stop: 53753, Start Num: 18  
Candidate Starts for Kenuha5\_92:  
(Start: 18 @53592 has 89 MA's),

Gene: Kingsley\_109 Start: 57777, Stop: 57938, Start Num: 18  
Candidate Starts for Kingsley\_109:  
(Start: 18 @57777 has 89 MA's),

Gene: Koella\_93 Start: 51178, Stop: 51339, Start Num: 18  
Candidate Starts for Koella\_93:  
(Start: 18 @51178 has 89 MA's),

Gene: KristaRAM\_108 Start: 55500, Stop: 55661, Start Num: 18  
Candidate Starts for KristaRAM\_108:  
(Start: 18 @55500 has 89 MA's),

Gene: Krypton555\_100 Start: 61911, Stop: 62087, Start Num: 15  
Candidate Starts for Krypton555\_100:  
(Start: 15 @61911 has 20 MA's),

Gene: LastJedi\_91 Start: 52235, Stop: 52396, Start Num: 18  
Candidate Starts for LastJedi\_91:  
(Start: 18 @52235 has 89 MA's),

Gene: LilDestine\_98 Start: 61249, Stop: 61419, Start Num: 15  
Candidate Starts for LilDestine\_98:  
(Start: 15 @61249 has 20 MA's), (20, 61282),

Gene: LittleShirley\_107 Start: 55612, Stop: 55773, Start Num: 18  
Candidate Starts for LittleShirley\_107:  
(Start: 18 @55612 has 89 MA's),

Gene: Lizziana\_101 Start: 55483, Stop: 55644, Start Num: 18  
Candidate Starts for Lizziana\_101:  
(Start: 18 @55483 has 89 MA's),

Gene: Llama\_107 Start: 55335, Stop: 55496, Start Num: 18  
Candidate Starts for Llama\_107:  
(Start: 18 @55335 has 89 MA's),

Gene: MAckerman\_93 Start: 58741, Stop: 58914, Start Num: 14  
Candidate Starts for MAckerman\_93:  
(3, 58627), (7, 58681), (9, 58696), (12, 58732), (Start: 14 @58741 has 10 MA's), (21, 58795), (26, 58903),

Gene: Maravista\_97 Start: 56143, Stop: 56304, Start Num: 18  
Candidate Starts for Maravista\_97:  
(Start: 18 @56143 has 89 MA's),

Gene: Martik\_99 Start: 55946, Stop: 56107, Start Num: 18

Candidate Starts for Martik\_99:  
(Start: 18 @55946 has 89 MA's),

Gene: Melissauren88\_90 Start: 50968, Stop: 51129, Start Num: 18  
Candidate Starts for Melissauren88\_90:  
(Start: 18 @50968 has 89 MA's),

Gene: MilanaBonita\_93 Start: 52864, Stop: 53025, Start Num: 18  
Candidate Starts for MilanaBonita\_93:  
(Start: 18 @52864 has 89 MA's),

Gene: MilleniumForce\_100 Start: 54671, Stop: 54832, Start Num: 18  
Candidate Starts for MilleniumForce\_100:  
(Start: 18 @54671 has 89 MA's),

Gene: MisterCuddles\_100 Start: 54813, Stop: 54974, Start Num: 18  
Candidate Starts for MisterCuddles\_100:  
(Start: 18 @54813 has 89 MA's),

Gene: Mova\_102 Start: 54601, Stop: 54762, Start Num: 18  
Candidate Starts for Mova\_102:  
(Start: 18 @54601 has 89 MA's),

Gene: Mozy\_104 Start: 54236, Stop: 54397, Start Num: 18  
Candidate Starts for Mozy\_104:  
(Start: 18 @54236 has 89 MA's),

Gene: Ms6\_102 Start: 50859, Stop: 51020, Start Num: 18  
Candidate Starts for Ms6\_102:  
(Start: 18 @50859 has 89 MA's),

Gene: MsGreen\_98 Start: 61489, Stop: 61665, Start Num: 15  
Candidate Starts for MsGreen\_98:  
(7, 61429), (Start: 15 @61489 has 20 MA's), (22, 61588),

Gene: Mutaforma13\_101 Start: 54270, Stop: 54431, Start Num: 18  
Candidate Starts for Mutaforma13\_101:  
(Start: 18 @54270 has 89 MA's),

Gene: Nicholasp3\_100 Start: 61372, Stop: 61542, Start Num: 15  
Candidate Starts for Nicholasp3\_100:  
(Start: 15 @61372 has 20 MA's), (20, 61405),

Gene: Nitzel\_94 Start: 51429, Stop: 51590, Start Num: 18  
Candidate Starts for Nitzel\_94:  
(Start: 18 @51429 has 89 MA's),

Gene: NormanBulbieJr\_98 Start: 55192, Stop: 55353, Start Num: 18  
Candidate Starts for NormanBulbieJr\_98:  
(Start: 18 @55192 has 89 MA's),

Gene: Ochi17\_106 Start: 54930, Stop: 55091, Start Num: 18  
Candidate Starts for Ochi17\_106:

(Start: 18 @54930 has 89 MA's),

Gene: OfUltron\_107 Start: 55479, Stop: 55640, Start Num: 18

Candidate Starts for OfUltron\_107:

(Start: 18 @55479 has 89 MA's),

Gene: Oksu\_104 Start: 56569, Stop: 56730, Start Num: 18

Candidate Starts for Oksu\_104:

(Start: 18 @56569 has 89 MA's),

Gene: OlympiaSaint\_104 Start: 55382, Stop: 55543, Start Num: 18

Candidate Starts for OlympiaSaint\_104:

(1, 55163), (2, 55220), (10, 55340), (Start: 18 @55382 has 89 MA's),

Gene: Phalconet\_101 Start: 54261, Stop: 54422, Start Num: 18

Candidate Starts for Phalconet\_101:

(Start: 18 @54261 has 89 MA's),

Gene: Phanphagia\_105 Start: 56016, Stop: 56177, Start Num: 18

Candidate Starts for Phanphagia\_105:

(Start: 18 @56016 has 89 MA's),

Gene: PhesterPhotato\_103 Start: 54235, Stop: 54396, Start Num: 18

Candidate Starts for PhesterPhotato\_103:

(Start: 18 @54235 has 89 MA's),

Gene: Philus\_104 Start: 56323, Stop: 56484, Start Num: 18

Candidate Starts for Philus\_104:

(Start: 18 @56323 has 89 MA's),

Gene: Pippy\_98 Start: 53463, Stop: 53624, Start Num: 18

Candidate Starts for Pippy\_98:

(Start: 18 @53463 has 89 MA's),

Gene: Priscilla\_101 Start: 55290, Stop: 55451, Start Num: 18

Candidate Starts for Priscilla\_101:

(Start: 18 @55290 has 89 MA's),

Gene: Quico\_109 Start: 56144, Stop: 56305, Start Num: 18

Candidate Starts for Quico\_109:

(Start: 18 @56144 has 89 MA's),

Gene: Rita\_100 Start: 55860, Stop: 56021, Start Num: 18

Candidate Starts for Rita\_100:

(Start: 18 @55860 has 89 MA's),

Gene: Rose5\_98 Start: 60265, Stop: 60432, Start Num: 14

Candidate Starts for Rose5\_98:

(3, 60151), (7, 60205), (9, 60220), (12, 60256), (Start: 14 @60265 has 10 MA's), (21, 60319),

Gene: Royals2015\_104 Start: 53395, Stop: 53556, Start Num: 18

Candidate Starts for Royals2015\_104:

(Start: 18 @53395 has 89 MA's),

Gene: Rumpelstiltskin\_96 Start: 61165, Stop: 61335, Start Num: 15  
Candidate Starts for Rumpelstiltskin\_96:  
(Start: 15 @61165 has 20 MA's), (20, 61198),

Gene: SG4\_101 Start: 55629, Stop: 55790, Start Num: 18  
Candidate Starts for SG4\_101:  
(Start: 18 @55629 has 89 MA's),

Gene: Sabbb\_103 Start: 52820, Stop: 52981, Start Num: 18  
Candidate Starts for Sabbb\_103:  
(1, 52601), (2, 52658), (10, 52778), (Start: 18 @52820 has 89 MA's),

Gene: Samty\_97 Start: 61587, Stop: 61763, Start Num: 15  
Candidate Starts for Samty\_97:  
(7, 61527), (Start: 15 @61587 has 20 MA's), (22, 61686),

Gene: Sarma624\_102 Start: 51789, Stop: 51950, Start Num: 18  
Candidate Starts for Sarma624\_102:  
(Start: 18 @51789 has 89 MA's),

Gene: Seabastian\_107 Start: 55480, Stop: 55641, Start Num: 18  
Candidate Starts for Seabastian\_107:  
(Start: 18 @55480 has 89 MA's),

Gene: Seagreen\_101 Start: 54767, Stop: 54928, Start Num: 18  
Candidate Starts for Seagreen\_101:  
(Start: 18 @54767 has 89 MA's),

Gene: Shauna1\_102 Start: 55632, Stop: 55793, Start Num: 18  
Candidate Starts for Shauna1\_102:  
(Start: 18 @55632 has 89 MA's),

Gene: ShowerHandel\_98 Start: 54136, Stop: 54297, Start Num: 18  
Candidate Starts for ShowerHandel\_98:  
(Start: 18 @54136 has 89 MA's),

Gene: ShroomBoi\_98 Start: 54184, Stop: 54345, Start Num: 18  
Candidate Starts for ShroomBoi\_98:  
(Start: 18 @54184 has 89 MA's),

Gene: Silverleaf\_95 Start: 59405, Stop: 59572, Start Num: 17  
Candidate Starts for Silverleaf\_95:  
(3, 59279), (7, 59333), (9, 59348), (12, 59384), (16, 59396), (Start: 17 @59405 has 4 MA's), (21, 59459),

Gene: StAnnes\_104 Start: 55680, Stop: 55841, Start Num: 18  
Candidate Starts for StAnnes\_104:  
(Start: 18 @55680 has 89 MA's),

Gene: Stap\_95 Start: 51396, Stop: 51557, Start Num: 18  
Candidate Starts for Stap\_95:  
(10, 51354), (Start: 18 @51396 has 89 MA's),

Gene: SwagPiggett\_102 Start: 55990, Stop: 56151, Start Num: 18  
Candidate Starts for SwagPiggett\_102:  
(Start: 18 @55990 has 89 MA's),

Gene: Taj\_106 Start: 55638, Stop: 55799, Start Num: 18  
Candidate Starts for Taj\_106:  
(Start: 18 @55638 has 89 MA's),

Gene: Tootsieroll\_94 Start: 54782, Stop: 54943, Start Num: 18  
Candidate Starts for Tootsieroll\_94:  
(Start: 18 @54782 has 89 MA's),

Gene: Tweety\_101 Start: 55032, Stop: 55193, Start Num: 18  
Candidate Starts for Tweety\_101:  
(Start: 18 @55032 has 89 MA's),

Gene: Tyson\_98 Start: 60158, Stop: 60331, Start Num: 14  
Candidate Starts for Tyson\_98:  
(3, 60044), (7, 60098), (9, 60113), (12, 60149), (Start: 14 @60158 has 10 MA's), (21, 60212), (26, 60320),

Gene: UPIE\_95 Start: 59398, Stop: 59571, Start Num: 17  
Candidate Starts for UPIE\_95:  
(3, 59272), (9, 59341), (12, 59377), (16, 59389), (Start: 17 @59398 has 4 MA's), (21, 59452), (26, 59560),

Gene: VRedHorse\_101 Start: 51888, Stop: 52049, Start Num: 18  
Candidate Starts for VRedHorse\_101:  
(Start: 18 @51888 has 89 MA's),

Gene: Velveteen\_97 Start: 51789, Stop: 51950, Start Num: 18  
Candidate Starts for Velveteen\_97:  
(Start: 18 @51789 has 89 MA's),

Gene: Wee\_103 Start: 55714, Stop: 55875, Start Num: 18  
Candidate Starts for Wee\_103:  
(Start: 18 @55714 has 89 MA's),

Gene: Whatsapiecost\_94 Start: 49439, Stop: 49600, Start Num: 18  
Candidate Starts for Whatsapiecost\_94:  
(Start: 18 @49439 has 89 MA's),

Gene: Wyatt2\_97 Start: 59821, Stop: 59994, Start Num: 14  
Candidate Starts for Wyatt2\_97:  
(3, 59707), (7, 59761), (9, 59776), (12, 59812), (Start: 14 @59821 has 10 MA's), (21, 59875), (26, 59983),

Gene: XFactor\_91 Start: 52230, Stop: 52391, Start Num: 18  
Candidate Starts for XFactor\_91:  
(Start: 18 @52230 has 89 MA's),

Gene: Zakai\_101 Start: 61981, Stop: 62151, Start Num: 15

Candidate Starts for Zakai\_101:  
(Start: 15 @61981 has 20 MA's), (20, 62014),

Gene: Zaria\_97 Start: 59297, Stop: 59470, Start Num: 14  
Candidate Starts for Zaria\_97:  
(3, 59183), (7, 59237), (9, 59252), (12, 59288), (Start: 14 @59297 has 10 MA's), (21, 59351), (26, 59459),

Gene: Zerg\_98 Start: 54105, Stop: 54266, Start Num: 18  
Candidate Starts for Zerg\_98:  
(Start: 18 @54105 has 89 MA's),

Gene: Zizzle\_103 Start: 56181, Stop: 56342, Start Num: 18  
Candidate Starts for Zizzle\_103:  
(Start: 18 @56181 has 89 MA's),