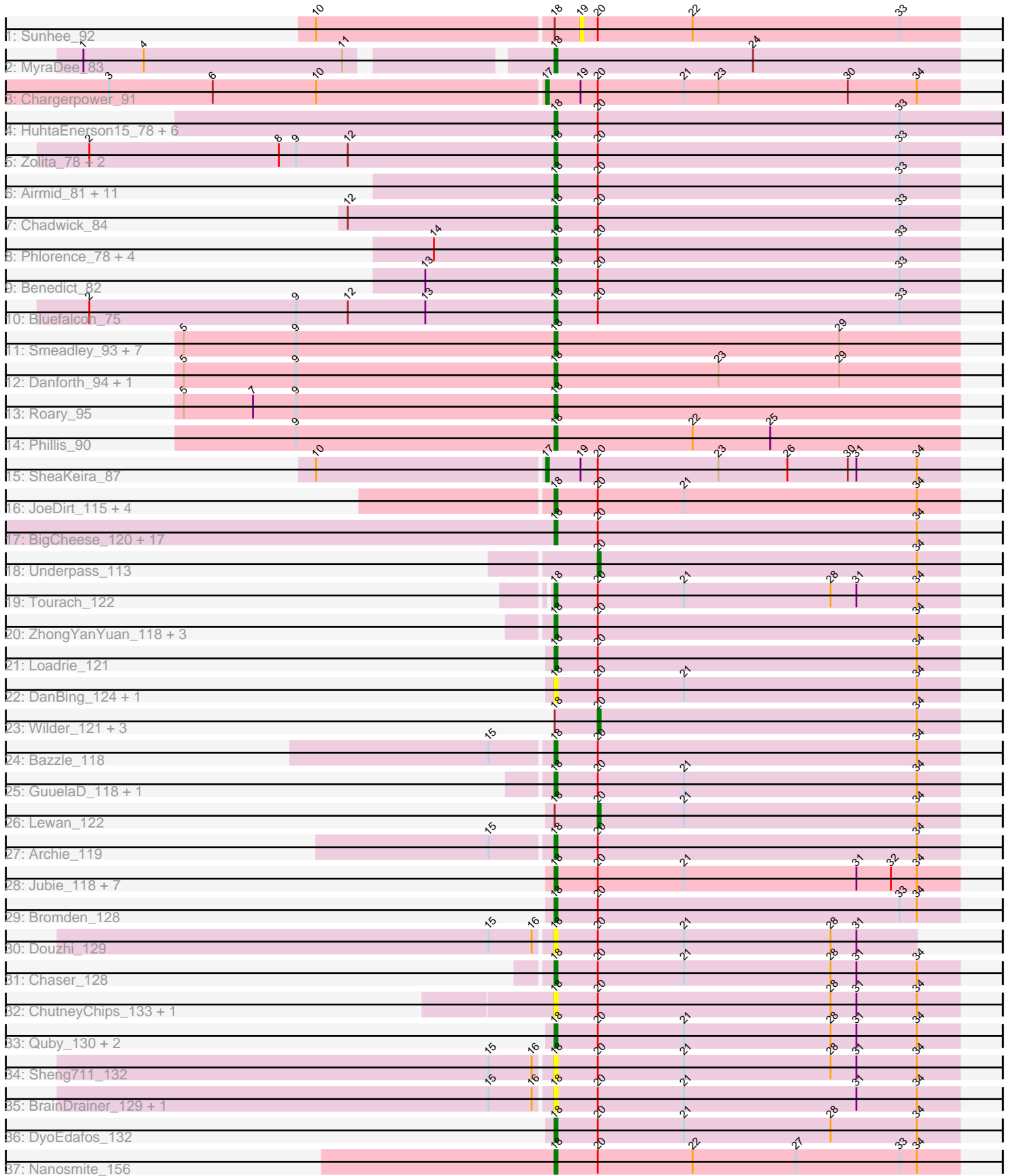


Pham 296412



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 296412 Report

This analysis was run 04/25/26 on database version 644.

Pham number 296412 has 108 members, 24 are drafts.

Phages represented in each track:

- Track 1 : Sunhee\_92
- Track 2 : MyraDee\_83
- Track 3 : Chargerpower\_91
- Track 4 : HuhtaEnerson15\_78, Bonamassa\_80, Micasa\_81, George\_74, LittleCherry\_78, Milcery\_78, Tarynearal\_80
- Track 5 : Zolita\_78, Ghouboy\_80, SydNat\_79
- Track 6 : Airmid\_81, PickleBack\_81, ForGetIt\_81, Jovo\_78, ElTiger69\_84, Florence4\_79, Florence1\_78, Lev2\_80, Prinasse11\_79, Twigg\_78, Jabiru\_79, Aragog\_80
- Track 7 : Chadwick\_84
- Track 8 : Phlorence\_78, Conspiracy\_80, Tiger\_78, Discoknowium\_77, AgentM\_79
- Track 9 : Benedict\_82
- Track 10 : Bluefalcon\_75
- Track 11 : Smeadley\_93, Groundhog\_90, Caitlin\_91, Saintus\_88, Stephig9\_94, Expelliarmus\_90, Astro\_92, NearlyHeadless\_94
- Track 12 : Danforth\_94, Dixon\_92
- Track 13 : Roary\_95
- Track 14 : Phillis\_90
- Track 15 : SheaKeira\_87
- Track 16 : JoeDirt\_115, Zaria\_117, Calm\_120, Pochiewood\_112, Wamburgexpress\_114
- Track 17 : BigCheese\_120, DrSeegs\_119, Kahlid\_120, Soap141\_121, LilDestine\_117, BobsGarage\_120, Wigglewiggles\_121, Breezona\_121, Miley16\_121, Winky\_121, Gabriela\_120, Itos\_121, Sarshaun\_122, Lynnae\_121, Faith1\_119, Gardann\_120, Netyap\_119, Vetrix\_120
- Track 18 : Underpass\_113
- Track 19 : Tourach\_122
- Track 20 : ZhongYanYuan\_118, Baoshan\_120, Finemlucis\_119, Rossetti\_120
- Track 21 : Loadrie\_121
- Track 22 : DanBing\_124, DHan\_122
- Track 23 : Wilder\_121, Zakai\_123, Nicholasp3\_121, SoJulia\_123
- Track 24 : Bazzle\_118
- Track 25 : GuuelaD\_118, Claus\_119
- Track 26 : Lewan\_122
- Track 27 : Archie\_119
- Track 28 : Jubie\_118, Clautastrophe\_117, Lumos\_118, Snenia\_117, MsGreen\_119, Jobypre\_118, TriFive\_119, Red305\_119

- Track 29 : Bromden\_128
- Track 30 : Douzhi\_129
- Track 31 : Chaser\_128
- Track 32 : ChutneyChips\_133, Kropertea\_125
- Track 33 : Quby\_130, Douge\_131, FarmResident\_131
- Track 34 : Sheng711\_132
- Track 35 : BrainDrainer\_129, PYPDinur\_131
- Track 36 : DyoEdafos\_132
- Track 37 : Nanosmite\_156

**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 77 of the 84 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- AgentM\_79, Airmid\_81, Aragog\_80, Archie\_119, Astro\_92, Baoshan\_120, Bazzle\_118, Benedict\_82, BigCheese\_120, Bluefalcon\_75, BobsGarage\_120, Bonamassa\_80, BrainDrainer\_129, Breezona\_121, Bromden\_128, Caitlin\_91, Calm\_120, Chadwick\_84, Chaser\_128, ChutneyChips\_133, Claus\_119, Clautastrophe\_117, Conspiracy\_80, DHan\_122, DanBing\_124, Danforth\_94, Discoknowium\_77, Dixon\_92, Douge\_131, Douzhi\_129, DrSeegs\_119, DyoEdafos\_132, ElTiger69\_84, Expelliarmus\_90, Faith1\_119, FarmResident\_131, Finemlucis\_119, Florence1\_78, Florence4\_79, ForGetIt\_81, Gabriela\_120, Gardann\_120, George\_74, Ghoulyboy\_80, Groundhog\_90, GuuelaD\_118, HuhtaEnerson15\_78, Itos\_121, Jabiru\_79, Jobypre\_118, JoeDirt\_115, Jovo\_78, Jubie\_118, Kahlid\_120, Kropertea\_125, Lev2\_80, LilDestine\_117, LittleCherry\_78, Loadrie\_121, Lumos\_118, Lynnae\_121, Micasa\_81, Milcery\_78, Miley16\_121, MsGreen\_119, MyraDee\_83, Nanosmite\_156, NearlyHeadless\_94, Netyap\_119, PYPDinur\_131, Phillis\_90, Phlorence\_78, PickleBack\_81, Poochiewood\_112, Prinash11\_79, Quby\_130, Red305\_119, Roary\_95, Rossetti\_120, Saintus\_88, Sarshaun\_122, Sheng711\_132, Smeadley\_93, Snenia\_117, Soap141\_121, Stephig9\_94, SydNat\_79, Tarynearal\_80, Tiger\_78, Tourach\_122, TriFive\_119, Twigg\_78, Vatrix\_120, Wamburggrxpress\_114, Wigglewiggle\_121, Winky\_121, Zaria\_117, ZhongYanYuan\_118, Zolita\_78,

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

- Lewan\_122, Nicholasp3\_121, SoJulia\_123, Sunhee\_92, Wilder\_121, Zakai\_123,

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

- Chargerpower\_91, SheaKeira\_87, Underpass\_113,

**Summary by start number:**

Start 17:

- Found in 2 of 108 ( 1.9% ) of genes in pham
- Manual Annotations of this start: 2 of 84
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chargerpower\_91 (A22), SheaKeira\_87 (A9),

Start 18:

- Found in 105 of 108 ( 97.2% ) of genes in pham
- Manual Annotations of this start: 77 of 84
- Called 94.3% of time when present
- Phage (with cluster) where this start called: AgentM\_79 (A5), Airmid\_81 (A5), Aragog\_80 (A5), Archie\_119 (L2), Astro\_92 (A8), Baoshan\_120 (L2), Bazzle\_118 (L2), Benedict\_82 (A5), BigCheese\_120 (L2), Bluefalcon\_75 (A5), BobsGarage\_120 (L2), Bonamassa\_80 (A5), BrainDrainer\_129 (L4), Breezona\_121 (L2), Bromden\_128 (L4), Caitlin\_91 (A8), Calm\_120 (L1), Chadwick\_84 (A5), Chaser\_128 (L4), ChutneyChips\_133 (L4), Claus\_119 (L2), Clautastrophe\_117 (L3), Conspiracy\_80 (A5), DHan\_122 (L2), DanBing\_124 (L2), Danforth\_94 (A8), Discoknowium\_77 (A5), Dixon\_92 (A8), Douge\_131 (L4), Douzhi\_129 (L4), DrSeegs\_119 (L2), DyoEdafos\_132 (L4), ElTiger69\_84 (A5), Expelliarmus\_90 (A8), Faith1\_119 (L2), FarmResident\_131 (L4), Finemlucis\_119 (L2), Florence1\_78 (A5), Florence4\_79 (A5), ForGetIt\_81 (A5), Gabriela\_120 (L2), Gardann\_120 (L2), George\_74 (A5), Ghoulyboy\_80 (A5), Groundhog\_90 (A8), GuuelaD\_118 (L2), HuhtaEnerson15\_78 (A5), Itos\_121 (L2), Jabiru\_79 (A5), Jobypre\_118 (L3), JoeDirt\_115 (L1), Jovo\_78 (A5), Jubie\_118 (L3), Kahlid\_120 (L2), Kropertea\_125 (L4), Lev2\_80 (A5), LilDestine\_117 (L2), LittleCherry\_78 (A5), Loadrie\_121 (L2), Lumos\_118 (L3), Lynnae\_121 (L2), Micasa\_81 (A5), Milcery\_78 (A5), Miley16\_121 (L2), MsGreen\_119 (L3), MyraDee\_83 (A18), Nanosmite\_156 (M3), NearlyHeadless\_94 (A8), Netyap\_119 (L2), PYPDinur\_131 (L4), Phillis\_90 (A8), Phlorence\_78 (A5), PickleBack\_81 (A5), Poochiewood\_112 (L1), Prinashe11\_79 (A5), Quby\_130 (L4), Red305\_119 (L3), Roary\_95 (A8), Rossetti\_120 (L2), Saintus\_88 (A8), Sarshaun\_122 (L2), Sheng711\_132 (L4), Smeadley\_93 (A8), Snenia\_117 (L3), Soap141\_121 (L2), Stephig9\_94 (A8), SydNat\_79 (A5), Tarynearal\_80 (A5), Tiger\_78 (A5), Tourach\_122 (L2), TriFive\_119 (L3), Twigg\_78 (A5), Vetrix\_120 (L2), Wamburggrxpress\_114 (L1), Wigglewiggles\_121 (L2), Winky\_121 (L2), Zaria\_117 (L1), ZhongYanYuan\_118 (L2), Zolita\_78 (A5),

Start 19:

- Found in 3 of 108 ( 2.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Sunhee\_92 (A14),

Start 20:

- Found in 95 of 108 ( 88.0% ) of genes in pham
- Manual Annotations of this start: 5 of 84
- Called 6.3% of time when present
- Phage (with cluster) where this start called: Lewan\_122 (L2), Nicholasp3\_121 (L2), SoJulia\_123 (L2), Underpass\_113 (L2), Wilder\_121 (L2), Zakai\_123 (L2),

**Summary by clusters:**

There are 11 clusters represented in this pham: A14, A22, L2, A18, L4, A5, L3, M3, L1, A9, A8,

Info for manual annotations of cluster A18:

- Start number 18 was manually annotated 1 time for cluster A18.

Info for manual annotations of cluster A22:

- Start number 17 was manually annotated 1 time for cluster A22.

Info for manual annotations of cluster A5:

- Start number 18 was manually annotated 26 times for cluster A5.

Info for manual annotations of cluster A8:

- Start number 18 was manually annotated 11 times for cluster A8.

Info for manual annotations of cluster A9:

- Start number 17 was manually annotated 1 time for cluster A9.

Info for manual annotations of cluster L1:

- Start number 18 was manually annotated 4 times for cluster L1.

Info for manual annotations of cluster L2:

- Start number 18 was manually annotated 23 times for cluster L2.
- Start number 20 was manually annotated 5 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 18 was manually annotated 7 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 18 was manually annotated 4 times for cluster L4.

Info for manual annotations of cluster M3:

- Start number 18 was manually annotated 1 time for cluster M3.

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

Gene: AgentM\_79 Start: 46397, Stop: 46257, Start Num: 18

Candidate Starts for AgentM\_79:

(14, 46439), (Start: 18 @46397 has 77 MA's), (Start: 20 @46382 has 5 MA's), (33, 46277),

Gene: Airmid\_81 Start: 46746, Stop: 46606, Start Num: 18

Candidate Starts for Airmid\_81:

(Start: 18 @46746 has 77 MA's), (Start: 20 @46731 has 5 MA's), (33, 46626),

Gene: Aragog\_80 Start: 46694, Stop: 46554, Start Num: 18

Candidate Starts for Aragog\_80:

(Start: 18 @46694 has 77 MA's), (Start: 20 @46679 has 5 MA's), (33, 46574),

Gene: Archie\_119 Start: 65851, Stop: 65711, Start Num: 18

Candidate Starts for Archie\_119:

(15, 65872), (Start: 18 @65851 has 77 MA's), (Start: 20 @65836 has 5 MA's), (34, 65725),

Gene: Astro\_92 Start: 48233, Stop: 48093, Start Num: 18

Candidate Starts for Astro\_92:

(5, 48362), (9, 48323), (Start: 18 @48233 has 77 MA's), (29, 48134),

Gene: Baoshan\_120 Start: 66069, Stop: 65929, Start Num: 18

Candidate Starts for Baoshan\_120:

(Start: 18 @66069 has 77 MA's), (Start: 20 @66054 has 5 MA's), (34, 65943),

Gene: Bazzle\_118 Start: 66439, Stop: 66299, Start Num: 18

Candidate Starts for Bazzle\_118:

(15, 66460), (Start: 18 @66439 has 77 MA's), (Start: 20 @66424 has 5 MA's), (34, 66313),

Gene: Benedict\_82 Start: 46562, Stop: 46422, Start Num: 18

Candidate Starts for Benedict\_82:

(13, 46607), (Start: 18 @46562 has 77 MA's), (Start: 20 @46547 has 5 MA's), (33, 46442),

Gene: BigCheese\_120 Start: 66330, Stop: 66190, Start Num: 18

Candidate Starts for BigCheese\_120:

(Start: 18 @66330 has 77 MA's), (Start: 20 @66315 has 5 MA's), (34, 66204),

Gene: Bluefalcon\_75 Start: 46979, Stop: 46839, Start Num: 18

Candidate Starts for Bluefalcon\_75:

(2, 47141), (9, 47069), (12, 47051), (13, 47024), (Start: 18 @46979 has 77 MA's), (Start: 20 @46964 has 5 MA's), (33, 46859),

Gene: BobsGarage\_120 Start: 66330, Stop: 66190, Start Num: 18

Candidate Starts for BobsGarage\_120:

(Start: 18 @66330 has 77 MA's), (Start: 20 @66315 has 5 MA's), (34, 66204),

Gene: Bonamassa\_80 Start: 46736, Stop: 46596, Start Num: 18

Candidate Starts for Bonamassa\_80:

(Start: 18 @46736 has 77 MA's), (Start: 20 @46721 has 5 MA's), (33, 46616),

Gene: BrainDrainer\_129 Start: 67611, Stop: 67471, Start Num: 18

Candidate Starts for BrainDrainer\_129:

(15, 67632), (16, 67617), (Start: 18 @67611 has 77 MA's), (Start: 20 @67596 has 5 MA's), (21, 67566), (31, 67506), (34, 67485),

Gene: Breezona\_121 Start: 66665, Stop: 66525, Start Num: 18

Candidate Starts for Breezona\_121:

(Start: 18 @66665 has 77 MA's), (Start: 20 @66650 has 5 MA's), (34, 66539),

Gene: Bromden\_128 Start: 68762, Stop: 68622, Start Num: 18

Candidate Starts for Bromden\_128:

(Start: 18 @68762 has 77 MA's), (Start: 20 @68747 has 5 MA's), (33, 68642), (34, 68636),

Gene: Caitlin\_91 Start: 47925, Stop: 47785, Start Num: 18

Candidate Starts for Caitlin\_91:

(5, 48054), (9, 48015), (Start: 18 @47925 has 77 MA's), (29, 47826),

Gene: Calm\_120 Start: 64636, Stop: 64496, Start Num: 18

Candidate Starts for Calm\_120:

(Start: 18 @64636 has 77 MA's), (Start: 20 @64621 has 5 MA's), (21, 64591), (34, 64510),

Gene: Chadwick\_84 Start: 46627, Stop: 46487, Start Num: 18

Candidate Starts for Chadwick\_84:

(12, 46699), (Start: 18 @46627 has 77 MA's), (Start: 20 @46612 has 5 MA's), (33, 46507),

Gene: Chargerpower\_91 Start: 48512, Stop: 48369, Start Num: 17  
Candidate Starts for Chargerpower\_91:  
(3, 48662), (6, 48626), (10, 48590), (Start: 17 @48512 has 2 MA's), (19, 48500), (Start: 20 @48494 has 5 MA's), (21, 48464), (23, 48452), (30, 48407), (34, 48383),

Gene: Chaser\_128 Start: 67472, Stop: 67332, Start Num: 18  
Candidate Starts for Chaser\_128:  
(Start: 18 @67472 has 77 MA's), (Start: 20 @67457 has 5 MA's), (21, 67427), (28, 67376), (31, 67367), (34, 67346),

Gene: ChutneyChips\_133 Start: 67724, Stop: 67584, Start Num: 18  
Candidate Starts for ChutneyChips\_133:  
(Start: 18 @67724 has 77 MA's), (Start: 20 @67709 has 5 MA's), (28, 67628), (31, 67619), (34, 67598),

Gene: Claus\_119 Start: 65982, Stop: 65842, Start Num: 18  
Candidate Starts for Claus\_119:  
(Start: 18 @65982 has 77 MA's), (Start: 20 @65967 has 5 MA's), (21, 65937), (34, 65856),

Gene: Clautastrophe\_117 Start: 66000, Stop: 65860, Start Num: 18  
Candidate Starts for Clautastrophe\_117:  
(Start: 18 @66000 has 77 MA's), (Start: 20 @65985 has 5 MA's), (21, 65955), (31, 65895), (32, 65883), (34, 65874),

Gene: Conspiracy\_80 Start: 46637, Stop: 46497, Start Num: 18  
Candidate Starts for Conspiracy\_80:  
(14, 46679), (Start: 18 @46637 has 77 MA's), (Start: 20 @46622 has 5 MA's), (33, 46517),

Gene: DHan\_122 Start: 66380, Stop: 66240, Start Num: 18  
Candidate Starts for DHan\_122:  
(Start: 18 @66380 has 77 MA's), (Start: 20 @66365 has 5 MA's), (21, 66335), (34, 66254),

Gene: DanBing\_124 Start: 66747, Stop: 66607, Start Num: 18  
Candidate Starts for DanBing\_124:  
(Start: 18 @66747 has 77 MA's), (Start: 20 @66732 has 5 MA's), (21, 66702), (34, 66621),

Gene: Danforth\_94 Start: 48387, Stop: 48247, Start Num: 18  
Candidate Starts for Danforth\_94:  
(5, 48516), (9, 48477), (Start: 18 @48387 has 77 MA's), (23, 48330), (29, 48288),

Gene: Discoknowium\_77 Start: 46154, Stop: 46014, Start Num: 18  
Candidate Starts for Discoknowium\_77:  
(14, 46196), (Start: 18 @46154 has 77 MA's), (Start: 20 @46139 has 5 MA's), (33, 46034),

Gene: Dixon\_92 Start: 47792, Stop: 47652, Start Num: 18  
Candidate Starts for Dixon\_92:  
(5, 47921), (9, 47882), (Start: 18 @47792 has 77 MA's), (23, 47735), (29, 47693),

Gene: Douge\_131 Start: 68103, Stop: 67963, Start Num: 18  
Candidate Starts for Douge\_131:  
(Start: 18 @68103 has 77 MA's), (Start: 20 @68088 has 5 MA's), (21, 68058), (28, 68007), (31, 67998), (34, 67977),

Gene: Douzhi\_129 Start: 67783, Stop: 67658, Start Num: 18

Candidate Starts for Douzhi\_129:

(15, 67804), (16, 67789), (Start: 18 @67783 has 77 MA's), (Start: 20 @67768 has 5 MA's), (21, 67738), (28, 67687), (31, 67678),

Gene: DrSeegs\_119 Start: 66665, Stop: 66525, Start Num: 18

Candidate Starts for DrSeegs\_119:

(Start: 18 @66665 has 77 MA's), (Start: 20 @66650 has 5 MA's), (34, 66539),

Gene: DyoEdafos\_132 Start: 67482, Stop: 67342, Start Num: 18

Candidate Starts for DyoEdafos\_132:

(Start: 18 @67482 has 77 MA's), (Start: 20 @67467 has 5 MA's), (21, 67437), (28, 67386), (34, 67356),

Gene: EITiger69\_84 Start: 47010, Stop: 46870, Start Num: 18

Candidate Starts for EITiger69\_84:

(Start: 18 @47010 has 77 MA's), (Start: 20 @46995 has 5 MA's), (33, 46890),

Gene: Expelliarmus\_90 Start: 48006, Stop: 47866, Start Num: 18

Candidate Starts for Expelliarmus\_90:

(5, 48135), (9, 48096), (Start: 18 @48006 has 77 MA's), (29, 47907),

Gene: Faith1\_119 Start: 65973, Stop: 65833, Start Num: 18

Candidate Starts for Faith1\_119:

(Start: 18 @65973 has 77 MA's), (Start: 20 @65958 has 5 MA's), (34, 65847),

Gene: FarmResident\_131 Start: 67235, Stop: 67095, Start Num: 18

Candidate Starts for FarmResident\_131:

(Start: 18 @67235 has 77 MA's), (Start: 20 @67220 has 5 MA's), (21, 67190), (28, 67139), (31, 67130), (34, 67109),

Gene: Finemlucis\_119 Start: 67003, Stop: 66863, Start Num: 18

Candidate Starts for Finemlucis\_119:

(Start: 18 @67003 has 77 MA's), (Start: 20 @66988 has 5 MA's), (34, 66877),

Gene: Florence1\_78 Start: 46525, Stop: 46385, Start Num: 18

Candidate Starts for Florence1\_78:

(Start: 18 @46525 has 77 MA's), (Start: 20 @46510 has 5 MA's), (33, 46405),

Gene: Florence4\_79 Start: 46525, Stop: 46385, Start Num: 18

Candidate Starts for Florence4\_79:

(Start: 18 @46525 has 77 MA's), (Start: 20 @46510 has 5 MA's), (33, 46405),

Gene: ForGetIt\_81 Start: 46944, Stop: 46804, Start Num: 18

Candidate Starts for ForGetIt\_81:

(Start: 18 @46944 has 77 MA's), (Start: 20 @46929 has 5 MA's), (33, 46824),

Gene: Gabriela\_120 Start: 65218, Stop: 65078, Start Num: 18

Candidate Starts for Gabriela\_120:

(Start: 18 @65218 has 77 MA's), (Start: 20 @65203 has 5 MA's), (34, 65092),

Gene: Gardann\_120 Start: 65895, Stop: 65755, Start Num: 18

Candidate Starts for Gardann\_120:

(Start: 18 @65895 has 77 MA's), (Start: 20 @65880 has 5 MA's), (34, 65769),

Gene: George\_74 Start: 46907, Stop: 46767, Start Num: 18  
Candidate Starts for George\_74:  
(Start: 18 @46907 has 77 MA's), (Start: 20 @46892 has 5 MA's), (33, 46787),

Gene: Ghoulboy\_80 Start: 46910, Stop: 46770, Start Num: 18  
Candidate Starts for Ghoulboy\_80:  
(2, 47072), (8, 47006), (9, 47000), (12, 46982), (Start: 18 @46910 has 77 MA's), (Start: 20 @46895 has 5 MA's), (33, 46790),

Gene: Groundhog\_90 Start: 48062, Stop: 47922, Start Num: 18  
Candidate Starts for Groundhog\_90:  
(5, 48191), (9, 48152), (Start: 18 @48062 has 77 MA's), (29, 47963),

Gene: GuuelaD\_118 Start: 66157, Stop: 66017, Start Num: 18  
Candidate Starts for GuuelaD\_118:  
(Start: 18 @66157 has 77 MA's), (Start: 20 @66142 has 5 MA's), (21, 66112), (34, 66031),

Gene: HuhtaEnerson15\_78 Start: 46668, Stop: 46513, Start Num: 18  
Candidate Starts for HuhtaEnerson15\_78:  
(Start: 18 @46668 has 77 MA's), (Start: 20 @46653 has 5 MA's), (33, 46548),

Gene: Itos\_121 Start: 64879, Stop: 64739, Start Num: 18  
Candidate Starts for Itos\_121:  
(Start: 18 @64879 has 77 MA's), (Start: 20 @64864 has 5 MA's), (34, 64753),

Gene: Jabiru\_79 Start: 46164, Stop: 46024, Start Num: 18  
Candidate Starts for Jabiru\_79:  
(Start: 18 @46164 has 77 MA's), (Start: 20 @46149 has 5 MA's), (33, 46044),

Gene: Jobypre\_118 Start: 65998, Stop: 65858, Start Num: 18  
Candidate Starts for Jobypre\_118:  
(Start: 18 @65998 has 77 MA's), (Start: 20 @65983 has 5 MA's), (21, 65953), (31, 65893), (32, 65881), (34, 65872),

Gene: JoeDirt\_115 Start: 64619, Stop: 64479, Start Num: 18  
Candidate Starts for JoeDirt\_115:  
(Start: 18 @64619 has 77 MA's), (Start: 20 @64604 has 5 MA's), (21, 64574), (34, 64493),

Gene: Jovo\_78 Start: 47200, Stop: 47060, Start Num: 18  
Candidate Starts for Jovo\_78:  
(Start: 18 @47200 has 77 MA's), (Start: 20 @47185 has 5 MA's), (33, 47080),

Gene: Jubie\_118 Start: 66133, Stop: 65993, Start Num: 18  
Candidate Starts for Jubie\_118:  
(Start: 18 @66133 has 77 MA's), (Start: 20 @66118 has 5 MA's), (21, 66088), (31, 66028), (32, 66016), (34, 66007),

Gene: Kahlid\_120 Start: 66180, Stop: 66040, Start Num: 18  
Candidate Starts for Kahlid\_120:  
(Start: 18 @66180 has 77 MA's), (Start: 20 @66165 has 5 MA's), (34, 66054),

Gene: Kropertea\_125 Start: 67245, Stop: 67105, Start Num: 18  
Candidate Starts for Kropertea\_125:

(Start: 18 @67245 has 77 MA's), (Start: 20 @67230 has 5 MA's), (28, 67149), (31, 67140), (34, 67119),

Gene: Lev2\_80 Start: 46553, Stop: 46413, Start Num: 18

Candidate Starts for Lev2\_80:

(Start: 18 @46553 has 77 MA's), (Start: 20 @46538 has 5 MA's), (33, 46433),

Gene: Lewan\_122 Start: 66675, Stop: 66550, Start Num: 20

Candidate Starts for Lewan\_122:

(Start: 18 @66690 has 77 MA's), (Start: 20 @66675 has 5 MA's), (21, 66645), (34, 66564),

Gene: LilDestine\_117 Start: 65350, Stop: 65210, Start Num: 18

Candidate Starts for LilDestine\_117:

(Start: 18 @65350 has 77 MA's), (Start: 20 @65335 has 5 MA's), (34, 65224),

Gene: LittleCherry\_78 Start: 46259, Stop: 46119, Start Num: 18

Candidate Starts for LittleCherry\_78:

(Start: 18 @46259 has 77 MA's), (Start: 20 @46244 has 5 MA's), (33, 46139),

Gene: Loadrie\_121 Start: 66722, Stop: 66582, Start Num: 18

Candidate Starts for Loadrie\_121:

(Start: 18 @66722 has 77 MA's), (Start: 20 @66707 has 5 MA's), (34, 66596),

Gene: Lumos\_118 Start: 65995, Stop: 65855, Start Num: 18

Candidate Starts for Lumos\_118:

(Start: 18 @65995 has 77 MA's), (Start: 20 @65980 has 5 MA's), (21, 65950), (31, 65890), (32, 65878), (34, 65869),

Gene: Lynnae\_121 Start: 65993, Stop: 65853, Start Num: 18

Candidate Starts for Lynnae\_121:

(Start: 18 @65993 has 77 MA's), (Start: 20 @65978 has 5 MA's), (34, 65867),

Gene: Micasa\_81 Start: 46924, Stop: 46769, Start Num: 18

Candidate Starts for Micasa\_81:

(Start: 18 @46924 has 77 MA's), (Start: 20 @46909 has 5 MA's), (33, 46804),

Gene: Milcery\_78 Start: 46553, Stop: 46413, Start Num: 18

Candidate Starts for Milcery\_78:

(Start: 18 @46553 has 77 MA's), (Start: 20 @46538 has 5 MA's), (33, 46433),

Gene: Miley16\_121 Start: 66665, Stop: 66525, Start Num: 18

Candidate Starts for Miley16\_121:

(Start: 18 @66665 has 77 MA's), (Start: 20 @66650 has 5 MA's), (34, 66539),

Gene: MsGreen\_119 Start: 65997, Stop: 65857, Start Num: 18

Candidate Starts for MsGreen\_119:

(Start: 18 @65997 has 77 MA's), (Start: 20 @65982 has 5 MA's), (21, 65952), (31, 65892), (32, 65880), (34, 65871),

Gene: MyraDee\_83 Start: 45467, Stop: 45327, Start Num: 18

Candidate Starts for MyraDee\_83:

(1, 45620), (4, 45599), (11, 45530), (Start: 18 @45467 has 77 MA's), (24, 45398),

Gene: Nanosmite\_156 Start: 75027, Stop: 74887, Start Num: 18

Candidate Starts for Nanosmite\_156:

(Start: 18 @75027 has 77 MA's), (Start: 20 @75012 has 5 MA's), (22, 74979), (27, 74943), (33, 74907), (34, 74901),

Gene: NearlyHeadless\_94 Start: 48124, Stop: 47984, Start Num: 18

Candidate Starts for NearlyHeadless\_94:

(5, 48253), (9, 48214), (Start: 18 @48124 has 77 MA's), (29, 48025),

Gene: Netyap\_119 Start: 66379, Stop: 66239, Start Num: 18

Candidate Starts for Netyap\_119:

(Start: 18 @66379 has 77 MA's), (Start: 20 @66364 has 5 MA's), (34, 66253),

Gene: Nicholasp3\_121 Start: 65880, Stop: 65755, Start Num: 20

Candidate Starts for Nicholasp3\_121:

(Start: 18 @65895 has 77 MA's), (Start: 20 @65880 has 5 MA's), (34, 65769),

Gene: PYPDinur\_131 Start: 68116, Stop: 67976, Start Num: 18

Candidate Starts for PYPDinur\_131:

(15, 68137), (16, 68122), (Start: 18 @68116 has 77 MA's), (Start: 20 @68101 has 5 MA's), (21, 68071), (31, 68011), (34, 67990),

Gene: Phillis\_90 Start: 47137, Stop: 46997, Start Num: 18

Candidate Starts for Phillis\_90:

(9, 47227), (Start: 18 @47137 has 77 MA's), (22, 47089), (25, 47062),

Gene: Phlorence\_78 Start: 46297, Stop: 46157, Start Num: 18

Candidate Starts for Phlorence\_78:

(14, 46339), (Start: 18 @46297 has 77 MA's), (Start: 20 @46282 has 5 MA's), (33, 46177),

Gene: PickleBack\_81 Start: 46751, Stop: 46611, Start Num: 18

Candidate Starts for PickleBack\_81:

(Start: 18 @46751 has 77 MA's), (Start: 20 @46736 has 5 MA's), (33, 46631),

Gene: Pochiewood\_112 Start: 64858, Stop: 64718, Start Num: 18

Candidate Starts for Pochiewood\_112:

(Start: 18 @64858 has 77 MA's), (Start: 20 @64843 has 5 MA's), (21, 64813), (34, 64732),

Gene: Prin Ashe11\_79 Start: 46763, Stop: 46623, Start Num: 18

Candidate Starts for Prin Ashe11\_79:

(Start: 18 @46763 has 77 MA's), (Start: 20 @46748 has 5 MA's), (33, 46643),

Gene: Quby\_130 Start: 67381, Stop: 67241, Start Num: 18

Candidate Starts for Quby\_130:

(Start: 18 @67381 has 77 MA's), (Start: 20 @67366 has 5 MA's), (21, 67336), (28, 67285), (31, 67276), (34, 67255),

Gene: Red305\_119 Start: 65998, Stop: 65858, Start Num: 18

Candidate Starts for Red305\_119:

(Start: 18 @65998 has 77 MA's), (Start: 20 @65983 has 5 MA's), (21, 65953), (31, 65893), (32, 65881), (34, 65872),

Gene: Roary\_95 Start: 48261, Stop: 48121, Start Num: 18

Candidate Starts for Roary\_95:

(5, 48390), (7, 48366), (9, 48351), (Start: 18 @48261 has 77 MA's),

Gene: Rossetti\_120 Start: 65842, Stop: 65702, Start Num: 18

Candidate Starts for Rossetti\_120:

(Start: 18 @65842 has 77 MA's), (Start: 20 @65827 has 5 MA's), (34, 65716),

Gene: Saintus\_88 Start: 44989, Stop: 44849, Start Num: 18

Candidate Starts for Saintus\_88:

(5, 45118), (9, 45079), (Start: 18 @44989 has 77 MA's), (29, 44890),

Gene: Sarshaun\_122 Start: 67162, Stop: 67022, Start Num: 18

Candidate Starts for Sarshaun\_122:

(Start: 18 @67162 has 77 MA's), (Start: 20 @67147 has 5 MA's), (34, 67036),

Gene: SheaKeira\_87 Start: 48886, Stop: 48743, Start Num: 17

Candidate Starts for SheaKeira\_87:

(10, 48964), (Start: 17 @48886 has 2 MA's), (19, 48874), (Start: 20 @48868 has 5 MA's), (23, 48826), (26, 48802), (30, 48781), (31, 48778), (34, 48757),

Gene: Sheng711\_132 Start: 67571, Stop: 67431, Start Num: 18

Candidate Starts for Sheng711\_132:

(15, 67592), (16, 67577), (Start: 18 @67571 has 77 MA's), (Start: 20 @67556 has 5 MA's), (21, 67526), (28, 67475), (31, 67466), (34, 67445),

Gene: Smeadley\_93 Start: 48128, Stop: 47988, Start Num: 18

Candidate Starts for Smeadley\_93:

(5, 48257), (9, 48218), (Start: 18 @48128 has 77 MA's), (29, 48029),

Gene: Snenia\_117 Start: 65999, Stop: 65859, Start Num: 18

Candidate Starts for Snenia\_117:

(Start: 18 @65999 has 77 MA's), (Start: 20 @65984 has 5 MA's), (21, 65954), (31, 65894), (32, 65882), (34, 65873),

Gene: SoJulia\_123 Start: 67891, Stop: 67766, Start Num: 20

Candidate Starts for SoJulia\_123:

(Start: 18 @67906 has 77 MA's), (Start: 20 @67891 has 5 MA's), (34, 67780),

Gene: Soap141\_121 Start: 67162, Stop: 67022, Start Num: 18

Candidate Starts for Soap141\_121:

(Start: 18 @67162 has 77 MA's), (Start: 20 @67147 has 5 MA's), (34, 67036),

Gene: Stephig9\_94 Start: 48479, Stop: 48339, Start Num: 18

Candidate Starts for Stephig9\_94:

(5, 48608), (9, 48569), (Start: 18 @48479 has 77 MA's), (29, 48380),

Gene: Sunhee\_92 Start: 48053, Stop: 47922, Start Num: 19

Candidate Starts for Sunhee\_92:

(10, 48143), (Start: 18 @48062 has 77 MA's), (19, 48053), (Start: 20 @48047 has 5 MA's), (22, 48014), (33, 47942),

Gene: SydNat\_79 Start: 46919, Stop: 46779, Start Num: 18

Candidate Starts for SydNat\_79:

(2, 47081), (8, 47015), (9, 47009), (12, 46991), (Start: 18 @46919 has 77 MA's), (Start: 20 @46904 has 5 MA's), (33, 46799),

Gene: Tarynearal\_80 Start: 46707, Stop: 46567, Start Num: 18  
Candidate Starts for Tarynearal\_80:  
(Start: 18 @46707 has 77 MA's), (Start: 20 @46692 has 5 MA's), (33, 46587),

Gene: Tiger\_78 Start: 46218, Stop: 46078, Start Num: 18  
Candidate Starts for Tiger\_78:  
(14, 46260), (Start: 18 @46218 has 77 MA's), (Start: 20 @46203 has 5 MA's), (33, 46098),

Gene: Tourach\_122 Start: 67517, Stop: 67377, Start Num: 18  
Candidate Starts for Tourach\_122:  
(Start: 18 @67517 has 77 MA's), (Start: 20 @67502 has 5 MA's), (21, 67472), (28, 67421), (31, 67412), (34, 67391),

Gene: TriFive\_119 Start: 66111, Stop: 65971, Start Num: 18  
Candidate Starts for TriFive\_119:  
(Start: 18 @66111 has 77 MA's), (Start: 20 @66096 has 5 MA's), (21, 66066), (31, 66006), (32, 65994), (34, 65985),

Gene: Twigg\_78 Start: 46673, Stop: 46533, Start Num: 18  
Candidate Starts for Twigg\_78:  
(Start: 18 @46673 has 77 MA's), (Start: 20 @46658 has 5 MA's), (33, 46553),

Gene: Underpass\_113 Start: 60916, Stop: 60791, Start Num: 20  
Candidate Starts for Underpass\_113:  
(Start: 20 @60916 has 5 MA's), (34, 60805),

Gene: Vetrix\_120 Start: 66805, Stop: 66665, Start Num: 18  
Candidate Starts for Vetrix\_120:  
(Start: 18 @66805 has 77 MA's), (Start: 20 @66790 has 5 MA's), (34, 66679),

Gene: Wamburgexpress\_114 Start: 64020, Stop: 63880, Start Num: 18  
Candidate Starts for Wamburgexpress\_114:  
(Start: 18 @64020 has 77 MA's), (Start: 20 @64005 has 5 MA's), (21, 63975), (34, 63894),

Gene: Wigglewigggle\_121 Start: 66401, Stop: 66261, Start Num: 18  
Candidate Starts for Wigglewigggle\_121:  
(Start: 18 @66401 has 77 MA's), (Start: 20 @66386 has 5 MA's), (34, 66275),

Gene: Wilder\_121 Start: 66019, Stop: 65894, Start Num: 20  
Candidate Starts for Wilder\_121:  
(Start: 18 @66034 has 77 MA's), (Start: 20 @66019 has 5 MA's), (34, 65908),

Gene: Winky\_121 Start: 66666, Stop: 66526, Start Num: 18  
Candidate Starts for Winky\_121:  
(Start: 18 @66666 has 77 MA's), (Start: 20 @66651 has 5 MA's), (34, 66540),

Gene: Zakai\_123 Start: 66361, Stop: 66236, Start Num: 20  
Candidate Starts for Zakai\_123:  
(Start: 18 @66376 has 77 MA's), (Start: 20 @66361 has 5 MA's), (34, 66250),

Gene: Zaria\_117 Start: 64101, Stop: 63961, Start Num: 18

Candidate Starts for Zaria\_117:

(Start: 18 @64101 has 77 MA's), (Start: 20 @64086 has 5 MA's), (21, 64056), (34, 63975),

Gene: ZhongYanYuan\_118 Start: 65768, Stop: 65628, Start Num: 18

Candidate Starts for ZhongYanYuan\_118:

(Start: 18 @65768 has 77 MA's), (Start: 20 @65753 has 5 MA's), (34, 65642),

Gene: Zolita\_78 Start: 46902, Stop: 46762, Start Num: 18

Candidate Starts for Zolita\_78:

(2, 47064), (8, 46998), (9, 46992), (12, 46974), (Start: 18 @46902 has 77 MA's), (Start: 20 @46887 has 5 MA's), (33, 46782),