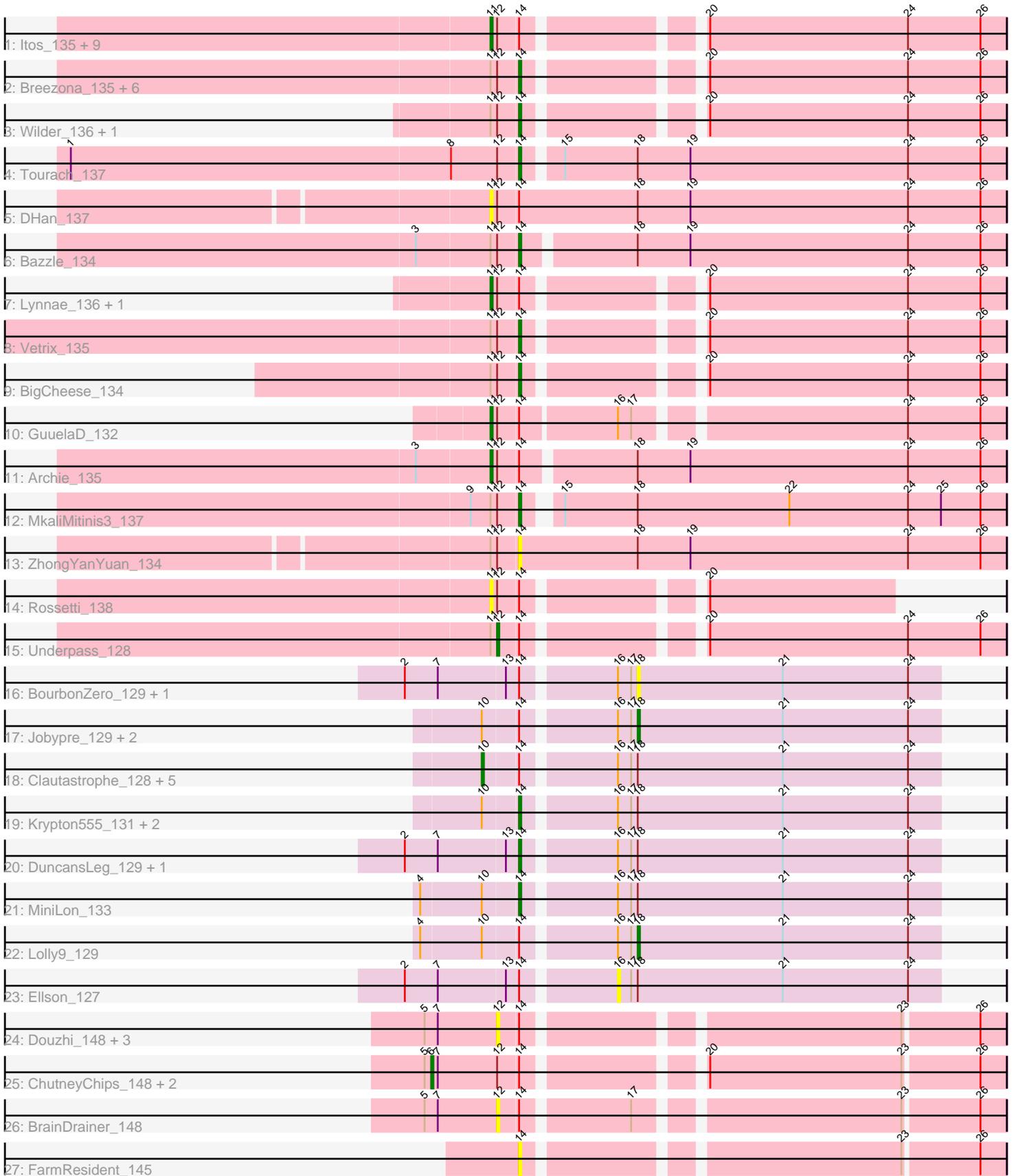


Pham 283824



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 283824 Report

This analysis was run 02/23/26 on database version 636.

Pham number 283824 has 60 members, 18 are drafts.

Phages represented in each track:

- Track 1 : Itos\_135, Gabriela\_135, Miley16\_135, Crossroads\_138, DrSeegs\_133, SoJulia\_139, Lewan\_137, Wigglewiggles\_136, Loadrie\_136, Soap141\_137
- Track 2 : Breezons\_135, Nicholasp3\_136, Netyap\_133, Zakai\_137, Gardann\_135, Winky\_135, Faith1\_133
- Track 3 : Wilder\_136, LilDestine\_132
- Track 4 : Tourach\_137
- Track 5 : DHan\_137
- Track 6 : Bazzle\_134
- Track 7 : Lynnae\_136, Kahlid\_135
- Track 8 : Vetrix\_135
- Track 9 : BigCheese\_134
- Track 10 : GuuelaD\_132
- Track 11 : Archie\_135
- Track 12 : MkaliMitinis3\_137
- Track 13 : ZhongYanYuan\_134
- Track 14 : Rossetti\_138
- Track 15 : Underpass\_128
- Track 16 : BourbonZero\_129, KirDoubleO7\_126
- Track 17 : Jobypre\_129, MsGreen\_130, Red305\_130
- Track 18 : Clautastrophe\_128, Finnry\_127, Bellis\_129, Samty\_127, Snenia\_128, Jubie\_129
- Track 19 : Krypton555\_131, Lumos\_129, TriFive\_130
- Track 20 : DuncansLeg\_129, Whirlwind\_130
- Track 21 : MiniLon\_133
- Track 22 : Lolly9\_129
- Track 23 : Ellson\_127
- Track 24 : Douzhi\_148, PYPDinur\_147, Sheng711\_148, Quby\_148
- Track 25 : ChutneyChips\_148, Kropertea\_141, DyoEdafos\_149
- Track 26 : BrainDrainer\_148
- Track 27 : FarmResident\_145

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

The start number called the most often in the published annotations is 14, it was called in 20 of the 42 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Bazzle\_134, BigCheese\_134, Breezona\_135, DuncansLeg\_129, Faith1\_133, FarmResident\_145, Gardann\_135, Krypton555\_131, LilDestine\_132, Lumos\_129, MiniLon\_133, MkaliMitinis3\_137, Netyap\_133, Nicholasp3\_136, Tourach\_137, TriFive\_130, Vetrix\_135, Whirlwind\_130, Wilder\_136, Winky\_135, Zakai\_137, ZhongYanYuan\_134,

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

- Archie\_135, Bellis\_129, BourbonZero\_129, BrainDrainer\_148, ChutneyChips\_148, Clautastrophe\_128, Crossroads\_138, DHan\_137, Douzhi\_148, DrSeegs\_133, DyoEdafos\_149, Ellson\_127, Finnry\_127, Gabriela\_135, GuuelaD\_132, Itos\_135, Jobypre\_129, Jubie\_129, Kahlid\_135, KirDoubleO7\_126, Kropertea\_141, Lewan\_137, Loadrie\_136, Lolly9\_129, Lynnae\_136, Miley16\_135, MsGreen\_130, PYPDinur\_147, Quby\_148, Red305\_130, Rossetti\_138, Samty\_127, Sheng711\_148, Snenia\_128, SoJulia\_139, Soap141\_137, Underpass\_128, Wigglewiggles\_136,

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

- 

### Summary by start number:

Start 6:

- Found in 3 of 60 ( 5.0% ) of genes in pham
- Manual Annotations of this start: 1 of 42
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ChutneyChips\_148 (L4), DyoEdafos\_149 (L4), Kropertea\_141 (L4),

Start 10:

- Found in 14 of 60 ( 23.3% ) of genes in pham
- Manual Annotations of this start: 6 of 42
- Called 42.9% of time when present
- Phage (with cluster) where this start called: Bellis\_129 (L3), Clautastrophe\_128 (L3), Finnry\_127 (L3), Jubie\_129 (L3), Samty\_127 (L3), Snenia\_128 (L3),

Start 11:

- Found in 31 of 60 ( 51.7% ) of genes in pham
- Manual Annotations of this start: 11 of 42
- Called 51.6% of time when present
- Phage (with cluster) where this start called: Archie\_135 (L2), Crossroads\_138 (L2), DHan\_137 (L2), DrSeegs\_133 (L2), Gabriela\_135 (L2), GuuelaD\_132 (L2), Itos\_135 (L2), Kahlid\_135 (L2), Lewan\_137 (L2), Loadrie\_136 (L2), Lynnae\_136 (L2), Miley16\_135 (L2), Rossetti\_138 (L2), SoJulia\_139 (L2), Soap141\_137 (L2), Wigglewiggles\_136 (L2),

Start 12:

- Found in 40 of 60 ( 66.7% ) of genes in pham
- Manual Annotations of this start: 1 of 42
- Called 15.0% of time when present

- Phage (with cluster) where this start called: BrainDrainer\_148 (L4), Douzhi\_148 (L4), PYPDinur\_147 (L4), Quby\_148 (L4), Sheng711\_148 (L4), Underpass\_128 (L2),

Start 14:

- Found in 60 of 60 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 20 of 42
- Called 36.7% of time when present
- Phage (with cluster) where this start called: Bazzle\_134 (L2), BigCheese\_134 (L2), Breezona\_135 (L2), DuncansLeg\_129 (L3), Faith1\_133 (L2), FarmResident\_145 (L4), Gardann\_135 (L2), Krypton555\_131 (L3), LilDestine\_132 (L2), Lumos\_129 (L3), MiniLon\_133 (L3), MkaliMitinis3\_137 (L2), Netyap\_133 (L2), Nicholasp3\_136 (L2), Tourach\_137 (L2), TriFive\_130 (L3), Vetrix\_135 (L2), Whirlwind\_130 (L3), Wilder\_136 (L2), Winky\_135 (L2), Zakai\_137 (L2), ZhongYanYuan\_134 (L2),

Start 16:

- Found in 20 of 60 ( 33.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 5.0% of time when present
- Phage (with cluster) where this start called: Ellson\_127 (L3),

Start 18:

- Found in 25 of 60 ( 41.7% ) of genes in pham
- Manual Annotations of this start: 3 of 42
- Called 24.0% of time when present
- Phage (with cluster) where this start called: BourbonZero\_129 (L3), Jobypre\_129 (L3), KirDoubleO7\_126 (L3), Lolly9\_129 (L3), MsGreen\_130 (L3), Red305\_130 (L3),

### **Summary by clusters:**

There are 3 clusters represented in this pham: L4, L2, L3,

Info for manual annotations of cluster L2:

- Start number 11 was manually annotated 11 times for cluster L2.
- Start number 12 was manually annotated 1 time for cluster L2.
- Start number 14 was manually annotated 14 times for cluster L2.

Info for manual annotations of cluster L3:

- Start number 10 was manually annotated 6 times for cluster L3.
- Start number 14 was manually annotated 6 times for cluster L3.
- Start number 18 was manually annotated 3 times for cluster L3.

Info for manual annotations of cluster L4:

- Start number 6 was manually annotated 1 time for cluster L4.

### **Gene Information:**

Gene: Archie\_135 Start: 70781, Stop: 70554, Start Num: 11

Candidate Starts for Archie\_135:

(3, 70814), (Start: 11 @70781 has 11 MA's), (Start: 12 @70778 has 1 MA's), (Start: 14 @70769 has 20 MA's), (Start: 18 @70721 has 3 MA's), (19, 70697), (24, 70598), (26, 70565),

Gene: Bazzle\_134 Start: 71163, Stop: 70948, Start Num: 14  
Candidate Starts for Bazzle\_134:  
(3, 71208), (Start: 11 @71175 has 11 MA's), (Start: 12 @71172 has 1 MA's), (Start: 14 @71163 has 20 MA's), (Start: 18 @71115 has 3 MA's), (19, 71091), (24, 70992), (26, 70959),

Gene: Bellis\_129 Start: 69492, Stop: 69292, Start Num: 10  
Candidate Starts for Bellis\_129:  
(Start: 10 @69492 has 6 MA's), (Start: 14 @69477 has 20 MA's), (16, 69438), (17, 69432), (Start: 18 @69429 has 3 MA's), (21, 69363), (24, 69306),

Gene: BigCheese\_134 Start: 70424, Stop: 70221, Start Num: 14  
Candidate Starts for BigCheese\_134:  
(Start: 11 @70436 has 11 MA's), (Start: 12 @70433 has 1 MA's), (Start: 14 @70424 has 20 MA's), (20, 70355), (24, 70265), (26, 70232),

Gene: BourbonZero\_129 Start: 69697, Stop: 69560, Start Num: 18  
Candidate Starts for BourbonZero\_129:  
(2, 69796), (7, 69781), (13, 69751), (Start: 14 @69745 has 20 MA's), (16, 69706), (17, 69700), (Start: 18 @69697 has 3 MA's), (21, 69631), (24, 69574),

Gene: BrainDrainer\_148 Start: 72473, Stop: 72264, Start Num: 12  
Candidate Starts for BrainDrainer\_148:  
(5, 72506), (7, 72500), (Start: 12 @72473 has 1 MA's), (Start: 14 @72464 has 20 MA's), (17, 72419), (23, 72308), (26, 72275),

Gene: Breezona\_135 Start: 70759, Stop: 70556, Start Num: 14  
Candidate Starts for Breezona\_135:  
(Start: 11 @70771 has 11 MA's), (Start: 12 @70768 has 1 MA's), (Start: 14 @70759 has 20 MA's), (20, 70690), (24, 70600), (26, 70567),

Gene: ChutneyChips\_148 Start: 72315, Stop: 72076, Start Num: 6  
Candidate Starts for ChutneyChips\_148:  
(5, 72318), (Start: 6 @72315 has 1 MA's), (7, 72312), (Start: 12 @72285 has 1 MA's), (Start: 14 @72276 has 20 MA's), (20, 72207), (23, 72120), (26, 72087),

Gene: Clautastrophe\_128 Start: 69603, Stop: 69403, Start Num: 10  
Candidate Starts for Clautastrophe\_128:  
(Start: 10 @69603 has 6 MA's), (Start: 14 @69588 has 20 MA's), (16, 69549), (17, 69543), (Start: 18 @69540 has 3 MA's), (21, 69474), (24, 69417),

Gene: Crossroads\_138 Start: 70705, Stop: 70490, Start Num: 11  
Candidate Starts for Crossroads\_138:  
(Start: 11 @70705 has 11 MA's), (Start: 12 @70702 has 1 MA's), (Start: 14 @70693 has 20 MA's), (20, 70624), (24, 70534), (26, 70501),

Gene: DHan\_137 Start: 71152, Stop: 70919, Start Num: 11  
Candidate Starts for DHan\_137:  
(Start: 11 @71152 has 11 MA's), (Start: 12 @71149 has 1 MA's), (Start: 14 @71140 has 20 MA's), (Start: 18 @71086 has 3 MA's), (19, 71062), (24, 70963), (26, 70930),

Gene: Douzhi\_148 Start: 72645, Stop: 72436, Start Num: 12  
Candidate Starts for Douzhi\_148:

(5, 72678), (7, 72672), (Start: 12 @72645 has 1 MA's), (Start: 14 @72636 has 20 MA's), (23, 72480), (26, 72447),

Gene: DrSeegs\_133 Start: 70771, Stop: 70556, Start Num: 11

Candidate Starts for DrSeegs\_133:

(Start: 11 @70771 has 11 MA's), (Start: 12 @70768 has 1 MA's), (Start: 14 @70759 has 20 MA's), (20, 70690), (24, 70600), (26, 70567),

Gene: DuncansLeg\_129 Start: 69771, Stop: 69586, Start Num: 14

Candidate Starts for DuncansLeg\_129:

(2, 69822), (7, 69807), (13, 69777), (Start: 14 @69771 has 20 MA's), (16, 69732), (17, 69726), (Start: 18 @69723 has 3 MA's), (21, 69657), (24, 69600),

Gene: DyoEdafos\_149 Start: 72181, Stop: 71942, Start Num: 6

Candidate Starts for DyoEdafos\_149:

(5, 72184), (Start: 6 @72181 has 1 MA's), (7, 72178), (Start: 12 @72151 has 1 MA's), (Start: 14 @72142 has 20 MA's), (20, 72073), (23, 71986), (26, 71953),

Gene: Ellson\_127 Start: 69988, Stop: 69842, Start Num: 16

Candidate Starts for Ellson\_127:

(2, 70078), (7, 70063), (13, 70033), (Start: 14 @70027 has 20 MA's), (16, 69988), (17, 69982), (Start: 18 @69979 has 3 MA's), (21, 69913), (24, 69856),

Gene: Faith1\_133 Start: 70067, Stop: 69864, Start Num: 14

Candidate Starts for Faith1\_133:

(Start: 11 @70079 has 11 MA's), (Start: 12 @70076 has 1 MA's), (Start: 14 @70067 has 20 MA's), (20, 69998), (24, 69908), (26, 69875),

Gene: FarmResident\_145 Start: 71991, Stop: 71791, Start Num: 14

Candidate Starts for FarmResident\_145:

(Start: 14 @71991 has 20 MA's), (23, 71835), (26, 71802),

Gene: Finnry\_127 Start: 69840, Stop: 69640, Start Num: 10

Candidate Starts for Finnry\_127:

(Start: 10 @69840 has 6 MA's), (Start: 14 @69825 has 20 MA's), (16, 69786), (17, 69780), (Start: 18 @69777 has 3 MA's), (21, 69711), (24, 69654),

Gene: Gabriela\_135 Start: 69867, Stop: 69652, Start Num: 11

Candidate Starts for Gabriela\_135:

(Start: 11 @69867 has 11 MA's), (Start: 12 @69864 has 1 MA's), (Start: 14 @69855 has 20 MA's), (20, 69786), (24, 69696), (26, 69663),

Gene: Gardann\_135 Start: 70532, Stop: 70329, Start Num: 14

Candidate Starts for Gardann\_135:

(Start: 11 @70544 has 11 MA's), (Start: 12 @70541 has 1 MA's), (Start: 14 @70532 has 20 MA's), (20, 70463), (24, 70373), (26, 70340),

Gene: GuuelaD\_132 Start: 70588, Stop: 70370, Start Num: 11

Candidate Starts for GuuelaD\_132:

(Start: 11 @70588 has 11 MA's), (Start: 12 @70585 has 1 MA's), (Start: 14 @70576 has 20 MA's), (16, 70534), (17, 70528), (24, 70414), (26, 70381),

Gene: Itos\_135 Start: 68985, Stop: 68770, Start Num: 11

Candidate Starts for Itos\_135:

(Start: 11 @68985 has 11 MA's), (Start: 12 @68982 has 1 MA's), (Start: 14 @68973 has 20 MA's), (20, 68904), (24, 68814), (26, 68781),

Gene: Jobypre\_129 Start: 69538, Stop: 69401, Start Num: 18

Candidate Starts for Jobypre\_129:

(Start: 10 @69601 has 6 MA's), (Start: 14 @69586 has 20 MA's), (16, 69547), (17, 69541), (Start: 18 @69538 has 3 MA's), (21, 69472), (24, 69415),

Gene: Jubie\_129 Start: 69736, Stop: 69536, Start Num: 10

Candidate Starts for Jubie\_129:

(Start: 10 @69736 has 6 MA's), (Start: 14 @69721 has 20 MA's), (16, 69682), (17, 69676), (Start: 18 @69673 has 3 MA's), (21, 69607), (24, 69550),

Gene: Kahlid\_135 Start: 70468, Stop: 70253, Start Num: 11

Candidate Starts for Kahlid\_135:

(Start: 11 @70468 has 11 MA's), (Start: 12 @70465 has 1 MA's), (Start: 14 @70456 has 20 MA's), (20, 70387), (24, 70297), (26, 70264),

Gene: KirDoubleO7\_126 Start: 69670, Stop: 69533, Start Num: 18

Candidate Starts for KirDoubleO7\_126:

(2, 69769), (7, 69754), (13, 69724), (Start: 14 @69718 has 20 MA's), (16, 69679), (17, 69673), (Start: 18 @69670 has 3 MA's), (21, 69604), (24, 69547),

Gene: Kropertea\_141 Start: 71849, Stop: 71610, Start Num: 6

Candidate Starts for Kropertea\_141:

(5, 71852), (Start: 6 @71849 has 1 MA's), (7, 71846), (Start: 12 @71819 has 1 MA's), (Start: 14 @71810 has 20 MA's), (20, 71741), (23, 71654), (26, 71621),

Gene: Krypton555\_131 Start: 69967, Stop: 69782, Start Num: 14

Candidate Starts for Krypton555\_131:

(Start: 10 @69982 has 6 MA's), (Start: 14 @69967 has 20 MA's), (16, 69928), (17, 69922), (Start: 18 @69919 has 3 MA's), (21, 69853), (24, 69796),

Gene: Lewan\_137 Start: 71114, Stop: 70899, Start Num: 11

Candidate Starts for Lewan\_137:

(Start: 11 @71114 has 11 MA's), (Start: 12 @71111 has 1 MA's), (Start: 14 @71102 has 20 MA's), (20, 71033), (24, 70943), (26, 70910),

Gene: LilDestine\_132 Start: 69626, Stop: 69423, Start Num: 14

Candidate Starts for LilDestine\_132:

(Start: 11 @69638 has 11 MA's), (Start: 12 @69635 has 1 MA's), (Start: 14 @69626 has 20 MA's), (20, 69557), (24, 69467), (26, 69434),

Gene: Loadrie\_136 Start: 71095, Stop: 70880, Start Num: 11

Candidate Starts for Loadrie\_136:

(Start: 11 @71095 has 11 MA's), (Start: 12 @71092 has 1 MA's), (Start: 14 @71083 has 20 MA's), (20, 71014), (24, 70924), (26, 70891),

Gene: Lolly9\_129 Start: 70076, Stop: 69939, Start Num: 18

Candidate Starts for Lolly9\_129:

(4, 70166), (Start: 10 @70139 has 6 MA's), (Start: 14 @70124 has 20 MA's), (16, 70085), (17, 70079), (Start: 18 @70076 has 3 MA's), (21, 70010), (24, 69953),

Gene: Lumos\_129 Start: 69583, Stop: 69398, Start Num: 14

Candidate Starts for Lumos\_129:

(Start: 10 @69598 has 6 MA's), (Start: 14 @69583 has 20 MA's), (16, 69544), (17, 69538), (Start: 18 @69535 has 3 MA's), (21, 69469), (24, 69412),

Gene: Lynnae\_136 Start: 70281, Stop: 70066, Start Num: 11

Candidate Starts for Lynnae\_136:

(Start: 11 @70281 has 11 MA's), (Start: 12 @70278 has 1 MA's), (Start: 14 @70269 has 20 MA's), (20, 70200), (24, 70110), (26, 70077),

Gene: Miley16\_135 Start: 70771, Stop: 70556, Start Num: 11

Candidate Starts for Miley16\_135:

(Start: 11 @70771 has 11 MA's), (Start: 12 @70768 has 1 MA's), (Start: 14 @70759 has 20 MA's), (20, 70690), (24, 70600), (26, 70567),

Gene: MiniLon\_133 Start: 70125, Stop: 69940, Start Num: 14

Candidate Starts for MiniLon\_133:

(4, 70167), (Start: 10 @70140 has 6 MA's), (Start: 14 @70125 has 20 MA's), (16, 70086), (17, 70080), (Start: 18 @70077 has 3 MA's), (21, 70011), (24, 69954),

Gene: MkaliMitinis3\_137 Start: 70464, Stop: 70252, Start Num: 14

Candidate Starts for MkaliMitinis3\_137:

(9, 70485), (Start: 11 @70476 has 11 MA's), (Start: 12 @70473 has 1 MA's), (Start: 14 @70464 has 20 MA's), (15, 70452), (Start: 18 @70419 has 3 MA's), (22, 70350), (24, 70296), (25, 70281), (26, 70263),

Gene: MsGreen\_130 Start: 69538, Stop: 69401, Start Num: 18

Candidate Starts for MsGreen\_130:

(Start: 10 @69601 has 6 MA's), (Start: 14 @69586 has 20 MA's), (16, 69547), (17, 69541), (Start: 18 @69538 has 3 MA's), (21, 69472), (24, 69415),

Gene: Netyap\_133 Start: 70473, Stop: 70270, Start Num: 14

Candidate Starts for Netyap\_133:

(Start: 11 @70485 has 11 MA's), (Start: 12 @70482 has 1 MA's), (Start: 14 @70473 has 20 MA's), (20, 70404), (24, 70314), (26, 70281),

Gene: Nicholasp3\_136 Start: 70532, Stop: 70329, Start Num: 14

Candidate Starts for Nicholasp3\_136:

(Start: 11 @70544 has 11 MA's), (Start: 12 @70541 has 1 MA's), (Start: 14 @70532 has 20 MA's), (20, 70463), (24, 70373), (26, 70340),

Gene: PYPDinur\_147 Start: 72457, Stop: 72248, Start Num: 12

Candidate Starts for PYPDinur\_147:

(5, 72490), (7, 72484), (Start: 12 @72457 has 1 MA's), (Start: 14 @72448 has 20 MA's), (23, 72292), (26, 72259),

Gene: Quby\_148 Start: 72325, Stop: 72116, Start Num: 12

Candidate Starts for Quby\_148:

(5, 72358), (7, 72352), (Start: 12 @72325 has 1 MA's), (Start: 14 @72316 has 20 MA's), (23, 72160), (26, 72127),

Gene: Red305\_130 Start: 69538, Stop: 69401, Start Num: 18

Candidate Starts for Red305\_130:

(Start: 10 @69601 has 6 MA's), (Start: 14 @69586 has 20 MA's), (16, 69547), (17, 69541), (Start: 18 @69538 has 3 MA's), (21, 69472), (24, 69415),

Gene: Rossetti\_138 Start: 71009, Stop: 70845, Start Num: 11

Candidate Starts for Rossetti\_138:

(Start: 11 @71009 has 11 MA's), (Start: 12 @71006 has 1 MA's), (Start: 14 @70997 has 20 MA's), (20, 70928),

Gene: Samty\_127 Start: 69583, Stop: 69383, Start Num: 10

Candidate Starts for Samty\_127:

(Start: 10 @69583 has 6 MA's), (Start: 14 @69568 has 20 MA's), (16, 69529), (17, 69523), (Start: 18 @69520 has 3 MA's), (21, 69454), (24, 69397),

Gene: Sheng711\_148 Start: 72041, Stop: 71832, Start Num: 12

Candidate Starts for Sheng711\_148:

(5, 72074), (7, 72068), (Start: 12 @72041 has 1 MA's), (Start: 14 @72032 has 20 MA's), (23, 71876), (26, 71843),

Gene: Snenia\_128 Start: 69602, Stop: 69402, Start Num: 10

Candidate Starts for Snenia\_128:

(Start: 10 @69602 has 6 MA's), (Start: 14 @69587 has 20 MA's), (16, 69548), (17, 69542), (Start: 18 @69539 has 3 MA's), (21, 69473), (24, 69416),

Gene: SoJulia\_139 Start: 72547, Stop: 72332, Start Num: 11

Candidate Starts for SoJulia\_139:

(Start: 11 @72547 has 11 MA's), (Start: 12 @72544 has 1 MA's), (Start: 14 @72535 has 20 MA's), (20, 72466), (24, 72376), (26, 72343),

Gene: Soap141\_137 Start: 71440, Stop: 71225, Start Num: 11

Candidate Starts for Soap141\_137:

(Start: 11 @71440 has 11 MA's), (Start: 12 @71437 has 1 MA's), (Start: 14 @71428 has 20 MA's), (20, 71359), (24, 71269), (26, 71236),

Gene: Tourach\_137 Start: 72248, Stop: 72033, Start Num: 14

Candidate Starts for Tourach\_137:

(1, 72449), (8, 72278), (Start: 12 @72257 has 1 MA's), (Start: 14 @72248 has 20 MA's), (15, 72233), (Start: 18 @72200 has 3 MA's), (19, 72176), (24, 72077), (26, 72044),

Gene: TriFive\_130 Start: 69699, Stop: 69514, Start Num: 14

Candidate Starts for TriFive\_130:

(Start: 10 @69714 has 6 MA's), (Start: 14 @69699 has 20 MA's), (16, 69660), (17, 69654), (Start: 18 @69651 has 3 MA's), (21, 69585), (24, 69528),

Gene: Underpass\_128 Start: 65581, Stop: 65369, Start Num: 12

Candidate Starts for Underpass\_128:

(Start: 11 @65584 has 11 MA's), (Start: 12 @65581 has 1 MA's), (Start: 14 @65572 has 20 MA's), (20, 65503), (24, 65413), (26, 65380),

Gene: Vetrix\_135 Start: 71069, Stop: 70866, Start Num: 14

Candidate Starts for Vetrix\_135:

(Start: 11 @71081 has 11 MA's), (Start: 12 @71078 has 1 MA's), (Start: 14 @71069 has 20 MA's), (20, 71000), (24, 70910), (26, 70877),

Gene: Whirlwind\_130 Start: 70059, Stop: 69874, Start Num: 14

Candidate Starts for Whirlwind\_130:

(2, 70110), (7, 70095), (13, 70065), (Start: 14 @70059 has 20 MA's), (16, 70020), (17, 70014), (Start: 18 @70011 has 3 MA's), (21, 69945), (24, 69888),

Gene: Wigglewigggle\_136 Start: 70677, Stop: 70462, Start Num: 11

Candidate Starts for Wigglewigggle\_136:

(Start: 11 @70677 has 11 MA's), (Start: 12 @70674 has 1 MA's), (Start: 14 @70665 has 20 MA's), (20, 70596), (24, 70506), (26, 70473),

Gene: Wilder\_136 Start: 70310, Stop: 70107, Start Num: 14

Candidate Starts for Wilder\_136:

(Start: 11 @70322 has 11 MA's), (Start: 12 @70319 has 1 MA's), (Start: 14 @70310 has 20 MA's), (20, 70241), (24, 70151), (26, 70118),

Gene: Winky\_135 Start: 70760, Stop: 70557, Start Num: 14

Candidate Starts for Winky\_135:

(Start: 11 @70772 has 11 MA's), (Start: 12 @70769 has 1 MA's), (Start: 14 @70760 has 20 MA's), (20, 70691), (24, 70601), (26, 70568),

Gene: Zakai\_137 Start: 70470, Stop: 70267, Start Num: 14

Candidate Starts for Zakai\_137:

(Start: 11 @70482 has 11 MA's), (Start: 12 @70479 has 1 MA's), (Start: 14 @70470 has 20 MA's), (20, 70401), (24, 70311), (26, 70278),

Gene: ZhongYanYuan\_134 Start: 70480, Stop: 70259, Start Num: 14

Candidate Starts for ZhongYanYuan\_134:

(Start: 11 @70492 has 11 MA's), (Start: 12 @70489 has 1 MA's), (Start: 14 @70480 has 20 MA's), (Start: 18 @70426 has 3 MA's), (19, 70402), (24, 70303), (26, 70270),