



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 236917 Report

This analysis was run 02/07/26 on database version 634.

Pham number 236917 has 79 members, 18 are drafts.

Phages represented in each track:

- Track 1 : CicholasNage\_117, Rose5\_124, Appletree2\_122, Zaria\_127, Acquire49\_123, OhShagHennessy\_115, Calm\_130, MAckerman\_124, AvadaKedavra\_123, JoeDirt\_125, Halena\_123, Wyatt2\_123
- Track 2 : Wamburgxpress\_125, UPIE\_122, LeBron\_122, Tyson\_124
- Track 3 : Silverleaf\_120
- Track 4 : Gardann\_131, BrainDrainer\_141, GuuelaD\_129, ZhongYanYuan\_128, Netyap\_129, SoJulia\_134, Crossroads\_134, Kahlid\_131, DHan\_133, Loadrie\_132, Vetrix\_131, Gabriela\_131, ChutneyChips\_143, Sheng711\_143, Douzhi\_141, MkaliMitinis3\_133, DyoEdafos\_142, Finemlucis\_131, Quby\_144, DrSeegs\_129, Wigglewiggle\_132, Itos\_131, Rossetti\_132, Kropertea\_135, Soap141\_132, Lynnae\_132, Tourach\_133
- Track 5 : Archie\_130, Bazzle\_128
- Track 6 : BigCheese\_130, Nicholasp3\_132, Winky\_131, Faith1\_129, LilDestine\_128, Breezona\_131, Miley16\_131, Wilder\_132, Chaser\_139, PYPDinur\_141, Zakai\_133
- Track 7 : Lewan\_133, Underpass\_124
- Track 8 : BourbonZero\_125, Finnry\_123, Clautastrophe\_124, Red305\_126, Snenia\_124, Jubie\_125, MsGreen\_126, KirDoubleO7\_122
- Track 9 : Bellis\_125, Jobypre\_125, Samty\_123
- Track 10 : TriFive\_126, DuncansLeg\_125, Lumos\_125, Ellson\_123
- Track 11 : Krypton555\_127, Whirlwind\_125
- Track 12 : MiniLon\_129
- Track 13 : Lolly9\_125
- Track 14 : FarmResident\_142

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

The start number called the most often in the published annotations is 1, it was called in 30 of the 61 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Acquire49\_123, Appletree2\_122, Archie\_130, AvadaKedavra\_123, Bazzle\_128, BrainDrainer\_141, Calm\_130, ChutneyChips\_143, CicholasNage\_117, Crossroads\_134, DHan\_133, Douzhi\_141, DrSeegs\_129, DyoEdafos\_142,

Finemlucis\_131, Gabriela\_131, Gardann\_131, GuuelaD\_129, Halena\_123, Itos\_131, JoeDirt\_125, Kahlid\_131, Kropertea\_135, Loadrie\_132, Lynnae\_132, MAckerman\_124, MkaliMitinis3\_133, Netyap\_129, OhShagHennessy\_115, Quby\_144, Rose5\_124, Rossetti\_132, Sheng711\_143, Silverleaf\_120, SoJulia\_134, Soap141\_132, Tourach\_133, Vetrix\_131, Wigglewiggles\_132, Wyatt2\_123, Zaria\_127, ZhongYanYuan\_128,

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

- BigCheese\_130, Breezona\_131, Chaser\_139, Faith1\_129, FarmResident\_142, LeBron\_122, Lewan\_133, LilDestine\_128, Miley16\_131, Nicholasp3\_132, PYPDinur\_141, Tyson\_124, UPIE\_122, Underpass\_124, Wamburggrxpress\_125, Wilder\_132, Winky\_131, Zakai\_133,

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

- Bellis\_125, BourbonZero\_125, Clautastrophe\_124, DuncansLeg\_125, Ellson\_123, Finnry\_123, Jobypre\_125, Jubie\_125, KirDoubleO7\_122, Krypton555\_127, Lolly9\_125, Lumos\_125, MiniLon\_129, MsGreen\_126, Red305\_126, Samty\_123, Snenia\_124, TriFive\_126, Whirlwind\_125,

### Summary by start number:

Start 1:

- Found in 60 of 79 ( 75.9% ) of genes in pham
- Manual Annotations of this start: 30 of 61
- Called 70.0% of time when present
- Phage (with cluster) where this start called: Acquire49\_123 (L1), Appletree2\_122 (L1), Archie\_130 (L2), AvadaKedavra\_123 (L1), Bazzle\_128 (L2), BrainDrainer\_141 (L4), Calm\_130 (L1), ChutneyChips\_143 (L4), CicholasNage\_117 (L1), Crossroads\_134 (L2), DHan\_133 (L2), Douzhi\_141 (L4), DrSeegs\_129 (L2), DyoEdafos\_142 (L4), Finemlucis\_131 (L2), Gabriela\_131 (L2), Gardann\_131 (L2), GuuelaD\_129 (L2), Halena\_123 (L1), Itos\_131 (L2), JoeDirt\_125 (L1), Kahlid\_131 (L2), Kropertea\_135 (L4), Loadrie\_132 (L2), Lynnae\_132 (L2), MAckerman\_124 (L1), MkaliMitinis3\_133 (L2), Netyap\_129 (L2), OhShagHennessy\_115 (L1), Quby\_144 (L4), Rose5\_124 (L1), Rossetti\_132 (L2), Sheng711\_143 (L4), Silverleaf\_120 (L1), SoJulia\_134 (L2), Soap141\_132 (L2), Tourach\_133 (L2), Vetrix\_131 (L2), Wigglewiggles\_132 (L2), Wyatt2\_123 (L1), Zaria\_127 (L1), ZhongYanYuan\_128 (L2),

Start 2:

- Found in 19 of 79 ( 24.1% ) of genes in pham
- Manual Annotations of this start: 4 of 61
- Called 26.3% of time when present
- Phage (with cluster) where this start called: DuncansLeg\_125 (L3), Ellson\_123 (L3), Lolly9\_125 (L3), Lumos\_125 (L3), TriFive\_126 (L3),

Start 3:

- Found in 79 of 79 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 7 of 61
- Called 12.7% of time when present
- Phage (with cluster) where this start called: BourbonZero\_125 (L3), Clautastrophe\_124 (L3), Finnry\_123 (L3), Jubie\_125 (L3), KirDoubleO7\_122 (L3), Lewan\_133 (L2), MsGreen\_126 (L3), Red305\_126 (L3), Snenia\_124 (L3), Underpass\_124 (L2),

#### Start 4:

- Found in 79 of 79 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 18 of 61
- Called 25.3% of time when present
- Phage (with cluster) where this start called: Bellis\_125 (L3), BigCheese\_130 (L2), Breezona\_131 (L2), Chaser\_139 (L4), Faith1\_129 (L2), FarmResident\_142 (L4), Jobypre\_125 (L3), LeBron\_122 (L1), LilDestine\_128 (L2), Miley16\_131 (L2), MiniLon\_129 (L3), Nicholasp3\_132 (L2), PYPDinur\_141 (L4), Samty\_123 (L3), Tyson\_124 (L1), UPIE\_122 (L1), Wamburgxpress\_125 (L1), Wilder\_132 (L2), Winky\_131 (L2), Zakai\_133 (L2),

#### Start 5:

- Found in 4 of 79 ( 5.1% ) of genes in pham
- Manual Annotations of this start: 2 of 61
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Krypton555\_127 (L3), Whirlwind\_125 (L3),

### Summary by clusters:

There are 4 clusters represented in this pham: L4, L2, L3, L1,

#### Info for manual annotations of cluster L1:

- Start number 1 was manually annotated 13 times for cluster L1.
- Start number 4 was manually annotated 4 times for cluster L1.

#### Info for manual annotations of cluster L2:

- Start number 1 was manually annotated 16 times for cluster L2.
- Start number 3 was manually annotated 2 times for cluster L2.
- Start number 4 was manually annotated 9 times for cluster L2.

#### Info for manual annotations of cluster L3:

- Start number 2 was manually annotated 4 times for cluster L3.
- Start number 3 was manually annotated 5 times for cluster L3.
- Start number 4 was manually annotated 4 times for cluster L3.
- Start number 5 was manually annotated 2 times for cluster L3.

#### Info for manual annotations of cluster L4:

- Start number 1 was manually annotated 1 time for cluster L4.
- Start number 4 was manually annotated 1 time for cluster L4.

### Gene Information:

Gene: Acquire49\_123 Start: 66969, Stop: 66736, Start Num: 1

Candidate Starts for Acquire49\_123:

(Start: 1 @66969 has 30 MA's), (Start: 3 @66960 has 7 MA's), (Start: 4 @66945 has 18 MA's), (8, 66792),

Gene: Appletree2\_122 Start: 67010, Stop: 66777, Start Num: 1

Candidate Starts for Appletree2\_122:

(Start: 1 @67010 has 30 MA's), (Start: 3 @67001 has 7 MA's), (Start: 4 @66986 has 18 MA's), (8, 66833),

Gene: Archie\_130 Start: 69615, Stop: 69382, Start Num: 1

Candidate Starts for Archie\_130:

(Start: 1 @69615 has 30 MA's), (Start: 3 @69606 has 7 MA's), (Start: 4 @69591 has 18 MA's), (6, 69528), (7, 69465), (8, 69438),

Gene: AvadaKedavra\_123 Start: 67083, Stop: 66850, Start Num: 1

Candidate Starts for AvadaKedavra\_123:

(Start: 1 @67083 has 30 MA's), (Start: 3 @67074 has 7 MA's), (Start: 4 @67059 has 18 MA's), (8, 66906),

Gene: Bazzle\_128 Start: 69789, Stop: 69556, Start Num: 1

Candidate Starts for Bazzle\_128:

(Start: 1 @69789 has 30 MA's), (Start: 3 @69780 has 7 MA's), (Start: 4 @69765 has 18 MA's), (6, 69702), (7, 69639), (8, 69612),

Gene: Bellis\_125 Start: 68585, Stop: 68370, Start Num: 4

Candidate Starts for Bellis\_125:

(Start: 2 @68606 has 4 MA's), (Start: 3 @68600 has 7 MA's), (Start: 4 @68585 has 18 MA's), (8, 68432), (9, 68423), (10, 68393),

Gene: BigCheese\_130 Start: 69547, Stop: 69338, Start Num: 4

Candidate Starts for BigCheese\_130:

(Start: 1 @69571 has 30 MA's), (Start: 3 @69562 has 7 MA's), (Start: 4 @69547 has 18 MA's), (6, 69484), (8, 69394),

Gene: BourbonZero\_125 Start: 68868, Stop: 68638, Start Num: 3

Candidate Starts for BourbonZero\_125:

(Start: 2 @68874 has 4 MA's), (Start: 3 @68868 has 7 MA's), (Start: 4 @68853 has 18 MA's), (8, 68700), (9, 68691), (10, 68661),

Gene: BrainDrainer\_141 Start: 71455, Stop: 71222, Start Num: 1

Candidate Starts for BrainDrainer\_141:

(Start: 1 @71455 has 30 MA's), (Start: 3 @71446 has 7 MA's), (Start: 4 @71431 has 18 MA's), (6, 71368), (8, 71278),

Gene: Breezona\_131 Start: 69882, Stop: 69673, Start Num: 4

Candidate Starts for Breezona\_131:

(Start: 1 @69906 has 30 MA's), (Start: 3 @69897 has 7 MA's), (Start: 4 @69882 has 18 MA's), (6, 69819), (8, 69729),

Gene: Calm\_130 Start: 68184, Stop: 67951, Start Num: 1

Candidate Starts for Calm\_130:

(Start: 1 @68184 has 30 MA's), (Start: 3 @68175 has 7 MA's), (Start: 4 @68160 has 18 MA's), (8, 68007),

Gene: Chaser\_139 Start: 71276, Stop: 71067, Start Num: 4

Candidate Starts for Chaser\_139:

(Start: 1 @71300 has 30 MA's), (Start: 3 @71291 has 7 MA's), (Start: 4 @71276 has 18 MA's), (6, 71213), (8, 71123),

Gene: ChutneyChips\_143 Start: 71363, Stop: 71130, Start Num: 1  
Candidate Starts for ChutneyChips\_143:  
(Start: 1 @71363 has 30 MA's), (Start: 3 @71354 has 7 MA's), (Start: 4 @71339 has 18 MA's), (6, 71276), (8, 71186),

Gene: CicholasNage\_117 Start: 67314, Stop: 67081, Start Num: 1  
Candidate Starts for CicholasNage\_117:  
(Start: 1 @67314 has 30 MA's), (Start: 3 @67305 has 7 MA's), (Start: 4 @67290 has 18 MA's), (8, 67137),

Gene: Clautastrophe\_124 Start: 68711, Stop: 68481, Start Num: 3  
Candidate Starts for Clautastrophe\_124:  
(Start: 2 @68717 has 4 MA's), (Start: 3 @68711 has 7 MA's), (Start: 4 @68696 has 18 MA's), (8, 68543), (9, 68534), (10, 68504),

Gene: Crossroads\_134 Start: 69840, Stop: 69607, Start Num: 1  
Candidate Starts for Crossroads\_134:  
(Start: 1 @69840 has 30 MA's), (Start: 3 @69831 has 7 MA's), (Start: 4 @69816 has 18 MA's), (6, 69753), (8, 69663),

Gene: DHan\_133 Start: 69980, Stop: 69747, Start Num: 1  
Candidate Starts for DHan\_133:  
(Start: 1 @69980 has 30 MA's), (Start: 3 @69971 has 7 MA's), (Start: 4 @69956 has 18 MA's), (6, 69893), (8, 69803),

Gene: Douzhi\_141 Start: 71627, Stop: 71394, Start Num: 1  
Candidate Starts for Douzhi\_141:  
(Start: 1 @71627 has 30 MA's), (Start: 3 @71618 has 7 MA's), (Start: 4 @71603 has 18 MA's), (6, 71540), (8, 71450),

Gene: DrSeegs\_129 Start: 69906, Stop: 69673, Start Num: 1  
Candidate Starts for DrSeegs\_129:  
(Start: 1 @69906 has 30 MA's), (Start: 3 @69897 has 7 MA's), (Start: 4 @69882 has 18 MA's), (6, 69819), (8, 69729),

Gene: DuncansLeg\_125 Start: 68900, Stop: 68664, Start Num: 2  
Candidate Starts for DuncansLeg\_125:  
(Start: 2 @68900 has 4 MA's), (Start: 3 @68894 has 7 MA's), (Start: 4 @68879 has 18 MA's), (8, 68726), (9, 68717), (10, 68687),

Gene: DyoEdafos\_142 Start: 70893, Stop: 70660, Start Num: 1  
Candidate Starts for DyoEdafos\_142:  
(Start: 1 @70893 has 30 MA's), (Start: 3 @70884 has 7 MA's), (Start: 4 @70869 has 18 MA's), (6, 70806), (8, 70716),

Gene: Ellson\_123 Start: 69156, Stop: 68920, Start Num: 2  
Candidate Starts for Ellson\_123:  
(Start: 2 @69156 has 4 MA's), (Start: 3 @69150 has 7 MA's), (Start: 4 @69135 has 18 MA's), (8, 68982), (9, 68973), (10, 68943),

Gene: Faith1\_129 Start: 69190, Stop: 68981, Start Num: 4  
Candidate Starts for Faith1\_129:

(Start: 1 @69214 has 30 MA's), (Start: 3 @69205 has 7 MA's), (Start: 4 @69190 has 18 MA's), (6, 69127), (8, 69037),

Gene: FarmResident\_142 Start: 70986, Stop: 70777, Start Num: 4

Candidate Starts for FarmResident\_142:

(Start: 1 @71010 has 30 MA's), (Start: 3 @71001 has 7 MA's), (Start: 4 @70986 has 18 MA's), (6, 70923),

Gene: Finemlucis\_131 Start: 70665, Stop: 70432, Start Num: 1

Candidate Starts for Finemlucis\_131:

(Start: 1 @70665 has 30 MA's), (Start: 3 @70656 has 7 MA's), (Start: 4 @70641 has 18 MA's), (6, 70578), (8, 70488),

Gene: Finnry\_123 Start: 68948, Stop: 68718, Start Num: 3

Candidate Starts for Finnry\_123:

(Start: 2 @68954 has 4 MA's), (Start: 3 @68948 has 7 MA's), (Start: 4 @68933 has 18 MA's), (8, 68780), (9, 68771), (10, 68741),

Gene: Gabriela\_131 Start: 69002, Stop: 68769, Start Num: 1

Candidate Starts for Gabriela\_131:

(Start: 1 @69002 has 30 MA's), (Start: 3 @68993 has 7 MA's), (Start: 4 @68978 has 18 MA's), (6, 68915), (8, 68825),

Gene: Gardann\_131 Start: 69679, Stop: 69446, Start Num: 1

Candidate Starts for Gardann\_131:

(Start: 1 @69679 has 30 MA's), (Start: 3 @69670 has 7 MA's), (Start: 4 @69655 has 18 MA's), (6, 69592), (8, 69502),

Gene: GuuelaD\_129 Start: 69567, Stop: 69334, Start Num: 1

Candidate Starts for GuuelaD\_129:

(Start: 1 @69567 has 30 MA's), (Start: 3 @69558 has 7 MA's), (Start: 4 @69543 has 18 MA's), (6, 69480), (8, 69390),

Gene: Halena\_123 Start: 66957, Stop: 66724, Start Num: 1

Candidate Starts for Halena\_123:

(Start: 1 @66957 has 30 MA's), (Start: 3 @66948 has 7 MA's), (Start: 4 @66933 has 18 MA's), (8, 66780),

Gene: Itos\_131 Start: 68120, Stop: 67887, Start Num: 1

Candidate Starts for Itos\_131:

(Start: 1 @68120 has 30 MA's), (Start: 3 @68111 has 7 MA's), (Start: 4 @68096 has 18 MA's), (6, 68033), (8, 67943),

Gene: Jobypre\_125 Start: 68694, Stop: 68479, Start Num: 4

Candidate Starts for Jobypre\_125:

(Start: 2 @68715 has 4 MA's), (Start: 3 @68709 has 7 MA's), (Start: 4 @68694 has 18 MA's), (8, 68541), (9, 68532), (10, 68502),

Gene: JoeDirt\_125 Start: 68188, Stop: 67955, Start Num: 1

Candidate Starts for JoeDirt\_125:

(Start: 1 @68188 has 30 MA's), (Start: 3 @68179 has 7 MA's), (Start: 4 @68164 has 18 MA's), (8, 68011),

Gene: Jubie\_125 Start: 68844, Stop: 68614, Start Num: 3

Candidate Starts for Jubie\_125:

(Start: 2 @68850 has 4 MA's), (Start: 3 @68844 has 7 MA's), (Start: 4 @68829 has 18 MA's), (8, 68676), (9, 68667), (10, 68637),

Gene: Kahlid\_131 Start: 69518, Stop: 69285, Start Num: 1

Candidate Starts for Kahlid\_131:

(Start: 1 @69518 has 30 MA's), (Start: 3 @69509 has 7 MA's), (Start: 4 @69494 has 18 MA's), (6, 69431), (8, 69341),

Gene: KirDoubleO7\_122 Start: 68841, Stop: 68611, Start Num: 3

Candidate Starts for KirDoubleO7\_122:

(Start: 2 @68847 has 4 MA's), (Start: 3 @68841 has 7 MA's), (Start: 4 @68826 has 18 MA's), (8, 68673), (9, 68664), (10, 68634),

Gene: Kropertea\_135 Start: 70561, Stop: 70328, Start Num: 1

Candidate Starts for Kropertea\_135:

(Start: 1 @70561 has 30 MA's), (Start: 3 @70552 has 7 MA's), (Start: 4 @70537 has 18 MA's), (6, 70474), (8, 70384),

Gene: Krypton555\_127 Start: 69057, Stop: 68860, Start Num: 5

Candidate Starts for Krypton555\_127:

(Start: 2 @69096 has 4 MA's), (Start: 3 @69090 has 7 MA's), (Start: 4 @69075 has 18 MA's), (Start: 5 @69057 has 2 MA's), (8, 68922), (9, 68913), (10, 68883),

Gene: LeBron\_122 Start: 66549, Stop: 66340, Start Num: 4

Candidate Starts for LeBron\_122:

(Start: 1 @66573 has 30 MA's), (Start: 3 @66564 has 7 MA's), (Start: 4 @66549 has 18 MA's), (8, 66396),

Gene: Lewan\_133 Start: 70188, Stop: 69964, Start Num: 3

Candidate Starts for Lewan\_133:

(Start: 1 @70197 has 30 MA's), (Start: 3 @70188 has 7 MA's), (Start: 4 @70173 has 18 MA's), (6, 70110), (8, 70020),

Gene: LilDestine\_128 Start: 68664, Stop: 68455, Start Num: 4

Candidate Starts for LilDestine\_128:

(Start: 1 @68688 has 30 MA's), (Start: 3 @68679 has 7 MA's), (Start: 4 @68664 has 18 MA's), (6, 68601), (8, 68511),

Gene: Loadrie\_132 Start: 70230, Stop: 69997, Start Num: 1

Candidate Starts for Loadrie\_132:

(Start: 1 @70230 has 30 MA's), (Start: 3 @70221 has 7 MA's), (Start: 4 @70206 has 18 MA's), (6, 70143), (8, 70053),

Gene: Lolly9\_125 Start: 69251, Stop: 69015, Start Num: 2

Candidate Starts for Lolly9\_125:

(Start: 2 @69251 has 4 MA's), (Start: 3 @69245 has 7 MA's), (Start: 4 @69230 has 18 MA's), (Start: 5 @69212 has 2 MA's), (8, 69077), (9, 69068), (10, 69038),

Gene: Lumos\_125 Start: 68712, Stop: 68476, Start Num: 2

Candidate Starts for Lumos\_125:

(Start: 2 @68712 has 4 MA's), (Start: 3 @68706 has 7 MA's), (Start: 4 @68691 has 18 MA's), (8, 68538), (9, 68529), (10, 68499),

Gene: Lynnae\_132 Start: 69331, Stop: 69098, Start Num: 1

Candidate Starts for Lynnae\_132:

(Start: 1 @69331 has 30 MA's), (Start: 3 @69322 has 7 MA's), (Start: 4 @69307 has 18 MA's), (6, 69244), (8, 69154),

Gene: MAckerman\_124 Start: 66950, Stop: 66717, Start Num: 1

Candidate Starts for MAckerman\_124:

(Start: 1 @66950 has 30 MA's), (Start: 3 @66941 has 7 MA's), (Start: 4 @66926 has 18 MA's), (8, 66773),

Gene: Miley16\_131 Start: 69882, Stop: 69673, Start Num: 4

Candidate Starts for Miley16\_131:

(Start: 1 @69906 has 30 MA's), (Start: 3 @69897 has 7 MA's), (Start: 4 @69882 has 18 MA's), (6, 69819), (8, 69729),

Gene: MiniLon\_129 Start: 69231, Stop: 69016, Start Num: 4

Candidate Starts for MiniLon\_129:

(Start: 2 @69252 has 4 MA's), (Start: 3 @69246 has 7 MA's), (Start: 4 @69231 has 18 MA's), (Start: 5 @69213 has 2 MA's), (8, 69078), (9, 69069), (10, 69039),

Gene: MkaliMitinis3\_133 Start: 69603, Stop: 69370, Start Num: 1

Candidate Starts for MkaliMitinis3\_133:

(Start: 1 @69603 has 30 MA's), (Start: 3 @69594 has 7 MA's), (Start: 4 @69579 has 18 MA's), (6, 69516), (8, 69426),

Gene: MsGreen\_126 Start: 68708, Stop: 68478, Start Num: 3

Candidate Starts for MsGreen\_126:

(Start: 2 @68714 has 4 MA's), (Start: 3 @68708 has 7 MA's), (Start: 4 @68693 has 18 MA's), (8, 68540), (9, 68531), (10, 68501),

Gene: Netyap\_129 Start: 69620, Stop: 69387, Start Num: 1

Candidate Starts for Netyap\_129:

(Start: 1 @69620 has 30 MA's), (Start: 3 @69611 has 7 MA's), (Start: 4 @69596 has 18 MA's), (6, 69533), (8, 69443),

Gene: Nicholasp3\_132 Start: 69655, Stop: 69446, Start Num: 4

Candidate Starts for Nicholasp3\_132:

(Start: 1 @69679 has 30 MA's), (Start: 3 @69670 has 7 MA's), (Start: 4 @69655 has 18 MA's), (6, 69592), (8, 69502),

Gene: OhShagHennessy\_115 Start: 65735, Stop: 65502, Start Num: 1

Candidate Starts for OhShagHennessy\_115:

(Start: 1 @65735 has 30 MA's), (Start: 3 @65726 has 7 MA's), (Start: 4 @65711 has 18 MA's), (8, 65558),

Gene: PYPDinur\_141 Start: 71415, Stop: 71206, Start Num: 4

Candidate Starts for PYPDinur\_141:

(Start: 1 @71439 has 30 MA's), (Start: 3 @71430 has 7 MA's), (Start: 4 @71415 has 18 MA's), (6, 71352), (8, 71262),

Gene: Quby\_144 Start: 71426, Stop: 71193, Start Num: 1  
Candidate Starts for Quby\_144:  
(Start: 1 @71426 has 30 MA's), (Start: 3 @71417 has 7 MA's), (Start: 4 @71402 has 18 MA's), (6, 71339), (8, 71249),

Gene: Red305\_126 Start: 68709, Stop: 68479, Start Num: 3  
Candidate Starts for Red305\_126:  
(Start: 2 @68715 has 4 MA's), (Start: 3 @68709 has 7 MA's), (Start: 4 @68694 has 18 MA's), (8, 68541), (9, 68532), (10, 68502),

Gene: Rose5\_124 Start: 67247, Stop: 67014, Start Num: 1  
Candidate Starts for Rose5\_124:  
(Start: 1 @67247 has 30 MA's), (Start: 3 @67238 has 7 MA's), (Start: 4 @67223 has 18 MA's), (8, 67070),

Gene: Rossetti\_132 Start: 69855, Stop: 69622, Start Num: 1  
Candidate Starts for Rossetti\_132:  
(Start: 1 @69855 has 30 MA's), (Start: 3 @69846 has 7 MA's), (Start: 4 @69831 has 18 MA's), (6, 69768), (8, 69678),

Gene: Samty\_123 Start: 68676, Stop: 68461, Start Num: 4  
Candidate Starts for Samty\_123:  
(Start: 2 @68697 has 4 MA's), (Start: 3 @68691 has 7 MA's), (Start: 4 @68676 has 18 MA's), (8, 68523), (9, 68514), (10, 68484),

Gene: Sheng711\_143 Start: 71051, Stop: 70818, Start Num: 1  
Candidate Starts for Sheng711\_143:  
(Start: 1 @71051 has 30 MA's), (Start: 3 @71042 has 7 MA's), (Start: 4 @71027 has 18 MA's), (6, 70964), (8, 70874),

Gene: Silverleaf\_120 Start: 66548, Stop: 66315, Start Num: 1  
Candidate Starts for Silverleaf\_120:  
(Start: 1 @66548 has 30 MA's), (Start: 3 @66539 has 7 MA's), (Start: 4 @66524 has 18 MA's),

Gene: Snenia\_124 Start: 68710, Stop: 68480, Start Num: 3  
Candidate Starts for Snenia\_124:  
(Start: 2 @68716 has 4 MA's), (Start: 3 @68710 has 7 MA's), (Start: 4 @68695 has 18 MA's), (8, 68542), (9, 68533), (10, 68503),

Gene: SoJulia\_134 Start: 71682, Stop: 71449, Start Num: 1  
Candidate Starts for SoJulia\_134:  
(Start: 1 @71682 has 30 MA's), (Start: 3 @71673 has 7 MA's), (Start: 4 @71658 has 18 MA's), (6, 71595), (8, 71505),

Gene: Soap141\_132 Start: 70575, Stop: 70342, Start Num: 1  
Candidate Starts for Soap141\_132:  
(Start: 1 @70575 has 30 MA's), (Start: 3 @70566 has 7 MA's), (Start: 4 @70551 has 18 MA's), (6, 70488), (8, 70398),

Gene: Tourach\_133 Start: 71094, Stop: 70861, Start Num: 1  
Candidate Starts for Tourach\_133:  
(Start: 1 @71094 has 30 MA's), (Start: 3 @71085 has 7 MA's), (Start: 4 @71070 has 18 MA's), (6, 71007), (8, 70917),

Gene: TriFive\_126 Start: 68828, Stop: 68592, Start Num: 2

Candidate Starts for TriFive\_126:

(Start: 2 @68828 has 4 MA's), (Start: 3 @68822 has 7 MA's), (Start: 4 @68807 has 18 MA's), (8, 68654), (9, 68645), (10, 68615),

Gene: Tyson\_124 Start: 67653, Stop: 67444, Start Num: 4

Candidate Starts for Tyson\_124:

(Start: 1 @67677 has 30 MA's), (Start: 3 @67668 has 7 MA's), (Start: 4 @67653 has 18 MA's), (8, 67500),

Gene: UPIE\_122 Start: 66890, Stop: 66681, Start Num: 4

Candidate Starts for UPIE\_122:

(Start: 1 @66914 has 30 MA's), (Start: 3 @66905 has 7 MA's), (Start: 4 @66890 has 18 MA's), (8, 66737),

Gene: Underpass\_124 Start: 64710, Stop: 64486, Start Num: 3

Candidate Starts for Underpass\_124:

(Start: 1 @64719 has 30 MA's), (Start: 3 @64710 has 7 MA's), (Start: 4 @64695 has 18 MA's), (6, 64632), (8, 64542),

Gene: Vetrix\_131 Start: 70216, Stop: 69983, Start Num: 1

Candidate Starts for Vetrix\_131:

(Start: 1 @70216 has 30 MA's), (Start: 3 @70207 has 7 MA's), (Start: 4 @70192 has 18 MA's), (6, 70129), (8, 70039),

Gene: Wamburgrxpress\_125 Start: 67556, Stop: 67347, Start Num: 4

Candidate Starts for Wamburgrxpress\_125:

(Start: 1 @67580 has 30 MA's), (Start: 3 @67571 has 7 MA's), (Start: 4 @67556 has 18 MA's), (8, 67403),

Gene: Whirlwind\_125 Start: 68933, Stop: 68736, Start Num: 5

Candidate Starts for Whirlwind\_125:

(Start: 2 @68972 has 4 MA's), (Start: 3 @68966 has 7 MA's), (Start: 4 @68951 has 18 MA's), (Start: 5 @68933 has 2 MA's), (8, 68798), (9, 68789), (10, 68759),

Gene: Wigglewobble\_132 Start: 69812, Stop: 69579, Start Num: 1

Candidate Starts for Wigglewobble\_132:

(Start: 1 @69812 has 30 MA's), (Start: 3 @69803 has 7 MA's), (Start: 4 @69788 has 18 MA's), (6, 69725), (8, 69635),

Gene: Wilder\_132 Start: 69348, Stop: 69139, Start Num: 4

Candidate Starts for Wilder\_132:

(Start: 1 @69372 has 30 MA's), (Start: 3 @69363 has 7 MA's), (Start: 4 @69348 has 18 MA's), (6, 69285), (8, 69195),

Gene: Winky\_131 Start: 69883, Stop: 69674, Start Num: 4

Candidate Starts for Winky\_131:

(Start: 1 @69907 has 30 MA's), (Start: 3 @69898 has 7 MA's), (Start: 4 @69883 has 18 MA's), (6, 69820), (8, 69730),

Gene: Wyatt2\_123 Start: 67340, Stop: 67107, Start Num: 1

Candidate Starts for Wyatt2\_123:

(Start: 1 @67340 has 30 MA's), (Start: 3 @67331 has 7 MA's), (Start: 4 @67316 has 18 MA's), (8, 67163),

Gene: Zakai\_133 Start: 69593, Stop: 69384, Start Num: 4

Candidate Starts for Zakai\_133:

(Start: 1 @69617 has 30 MA's), (Start: 3 @69608 has 7 MA's), (Start: 4 @69593 has 18 MA's), (6, 69530), (8, 69440),

Gene: Zaria\_127 Start: 67649, Stop: 67416, Start Num: 1

Candidate Starts for Zaria\_127:

(Start: 1 @67649 has 30 MA's), (Start: 3 @67640 has 7 MA's), (Start: 4 @67625 has 18 MA's), (8, 67472),

Gene: ZhongYanYuan\_128 Start: 69100, Stop: 68867, Start Num: 1

Candidate Starts for ZhongYanYuan\_128:

(Start: 1 @69100 has 30 MA's), (Start: 3 @69091 has 7 MA's), (Start: 4 @69076 has 18 MA's), (6, 69013), (8, 68923),