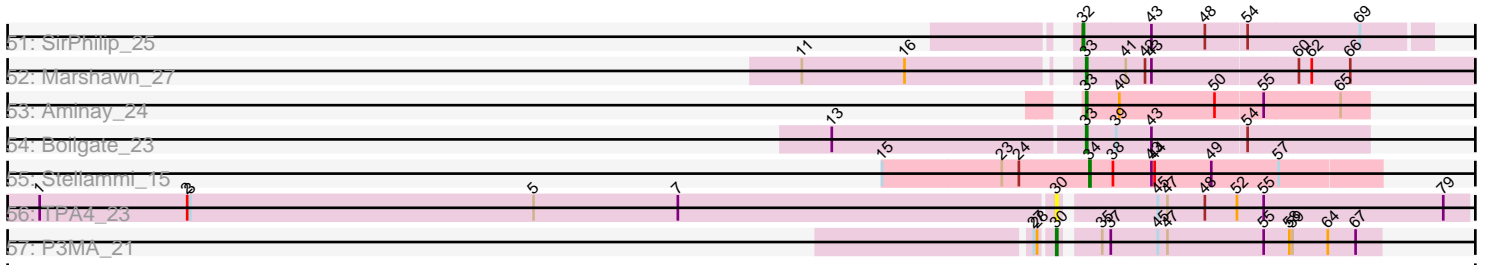




Pham 308082



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 308082 Report

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

Pham number 308082 has 216 members, 16 are drafts.

Phages represented in each track:

- Track 1 : BaghaKamala\_26, Durfee\_26, Apocalypse\_26, BarrelRoll\_26, Efra2\_26, Piatt\_26, Slimphazie\_26, Murucutumbu\_26, Boiii\_26, Pokerus\_25, YoureAdopted\_25, Joy99\_26, Dole\_26, Belladonna\_26, Peel\_26, CheetoDust\_26, Adonis\_26, Emerson\_26, Padfoot\_26, MeaningOfLife\_26, Angelica\_26, Zavala\_26, Topper\_26, HedwigODU\_26, Jayhawk\_26, Dalmuri\_26, Mynx\_26, Asayake\_26, Inky\_26, JAWS\_26, Illumine\_26, Guanica15\_26, Capricorn\_26, Jeckyll\_26, BGIlluviae\_26, Lunahalos\_26, Curiosium\_27, CREW\_26, Geraldini\_26, Beezoo\_26, MacKat\_26, BEEST\_26, CallaLilly\_26, ActinUp\_26, Veliki\_26, CrimD\_26, AlishaPH\_26, Padpat\_26, Yunkel11\_26, Rosmarinus\_26, Devera\_26, Zabiza\_26, Blizzard\_26, Atiba\_26, Deby\_26, CaseJules\_26, ShiaSurprise\_26, Ramen\_26, Rapunzel97\_26, Hyperbowlee\_26, Homura\_26, Ganymede\_27, Jarvi\_26, Adephagia\_26, Tachez\_26, Clipper\_26, Spock\_26, Tiri\_26, QuincyRose\_25, Twitch\_26, Sulley\_26, Llorens\_26
- Track 2 : Mdavu\_22, Teejan\_22, Trice\_22, Enkosi\_22, Binglebops\_22, Amelie\_22, Nikao\_22, Nutello\_22, SgtBeansprout\_22, LilPharaoh\_22, Torres\_22
- Track 3 : MarkPhew\_26
- Track 4 : Chavito\_26
- Track 5 : LindNT\_26, Anaya\_27, TreyKay\_26, TaiwanKao\_27, Prithvi\_26, Megsy\_26
- Track 6 : McMater\_26, Peanam\_26, Shaobing\_26, Niklas\_26, Dartin\_26, Richo\_26
- Track 7 : Bern\_26, Pisa4\_25, Pisa1\_25
- Track 8 : Chris\_25
- Track 9 : KiSi\_25, LeMond\_25, Oscar\_25, Scarlett\_25
- Track 10 : TingHuaYa\_26, LastHope\_26
- Track 11 : Stinson\_26
- Track 12 : Stinson\_27
- Track 13 : LaterM\_26
- Track 14 : Nibb\_25
- Track 15 : TruffulaTree\_26
- Track 16 : Validus\_26
- Track 17 : BoostSeason\_22, Doughnut\_22, Mufasa\_22
- Track 18 : ZoeJ\_22
- Track 19 : Strobilo\_22, Findley\_22
- Track 20 : DismalStressor\_22, DismalFunk\_22, Marcoliusprime\_22
- Track 21 : Milly\_22
- Track 22 : TM4\_22
- Track 23 : TBond007\_25
- Track 24 : Hurricane\_25

- Track 25 : Pharb\_25
- Track 26 : Keshu\_25
- Track 27 : MacnCheese\_26
- Track 28 : Pixie\_25
- Track 29 : TribbleTrouble\_24
- Track 30 : Lea83\_25, ShedlockHolmes\_25
- Track 31 : YasnayaPolyana\_27, Cheetobro\_27, MissDaisy\_27, Wintermute\_27, Bobquesha\_28, Patt\_27, Mitti\_27, Fionnbharth\_27, OmniCritical\_27, SamScheppers\_25, Chancellor\_27, Lebo14\_27, Kraw\_27, JF1\_27, Slarp\_27, Y2\_27, Malthus\_28, Taquito\_25, Y10\_27, Qhanda\_28
- Track 32 : Eponine\_27, Juliette\_27, Ruthiejr\_26
- Track 33 : Reptar3000\_27
- Track 34 : DanSyl44\_28
- Track 35 : Omnicron\_25
- Track 36 : ViviJ\_23, SoSeph\_24, Leston\_24, LilDirt\_23, Heftyboy\_24, Guillsminger\_24, Collard\_24, BananenDer11\_24, OkiRoe\_24, Kratio\_23, InvictusManeo\_24, DoubleChamp\_24, Agent47\_24, Feyre\_24, Paola\_24
- Track 37 : Edugator\_24, Neighly\_25, Larva\_25, Dadosky\_25, Psycho\_25, AlleyCat\_25
- Track 38 : Rando14\_25
- Track 39 : Thyatira\_24, Waterfoul\_24, Miryou\_24
- Track 40 : Gengar\_24
- Track 41 : Ekdilam\_23
- Track 42 : Phrank\_25, Bryler\_25, Tierra\_25, PhelpsODU\_25, Cain\_25, Unicorn\_25
- Track 43 : Shadow1\_24, Sunflower1121\_24
- Track 44 : Syra333\_25, Ximenita\_26
- Track 45 : Lavahound\_24, Amgine\_24, Ellie\_23, Fefferhead\_25, Applecrisp\_24
- Track 46 : Krueger\_25, Tigress9\_25
- Track 47 : DarthP\_25, Hammy\_25, Amohnition\_25
- Track 48 : TClif\_25
- Track 49 : November\_24
- Track 50 : Yuna\_27
- Track 51 : SirPhilip\_25
- Track 52 : Marshawn\_27
- Track 53 : Aminay\_24
- Track 54 : Boilgate\_23
- Track 55 : Stellammi\_15
- Track 56 : TPA4\_23
- Track 57 : P3MA\_21

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

The start number called the most often in the published annotations is 33, it was called in 166 of the 200 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ActinUp\_26, Adephegia\_26, Adonis\_26, Agent47\_24, AlishaPH\_26, AlleyCat\_25, Amelie\_22, Aminay\_24, Anaya\_27, Angelica\_26, Apocalypse\_26, Asayake\_26, Atiba\_26, BEEST\_26, BGIlluviae\_26, BaghaKamala\_26, BananenDer11\_24, BarrelRoll\_26, Beezoo\_26, Belladonna\_26, Bern\_26, Binglebops\_22, Blizzard\_26,

Bobquesha\_28, Boiiii\_26, Boilgate\_23, BoostSeason\_22, CREW\_26, CallaLilly\_26, Capricorn\_26, CaseJules\_26, Chancellor\_27, Chavito\_26, CheetoDust\_26, Cheetobro\_27, Clipper\_26, Collard\_24, CrimD\_26, Curiosium\_27, Dadosky\_25, Dalmuri\_26, DanSyl44\_28, Dartin\_26, Deby\_26, Devera\_26, DismalFunk\_22, DismalStressor\_22, Dole\_26, DoubleChamp\_24, Doughnut\_22, Durfee\_26, Edugator\_24, Efra2\_26, Emerson\_26, Enkosi\_22, Eponine\_27, Feyre\_24, Findley\_22, Fionnbharth\_27, Ganymede\_27, Gengar\_24, Geraldini\_26, Guanica15\_26, Guillsminger\_24, HedwigODU\_26, Heftyboy\_24, Homura\_26, Hurricane\_25, Hyperbowlee\_26, Illumine\_26, Inky\_26, InvictusManeo\_24, JAWS\_26, JF1\_27, Jarvi\_26, Jayhawk\_26, Jeckyll\_26, Joy99\_26, Juliette\_27, Keshu\_25, Kratio\_23, Kraw\_27, Larva\_25, LastHope\_26, Lea83\_25, Lebo14\_27, Leston\_24, LilDirt\_23, LilPharaoh\_22, LindNT\_26, Llorens\_26, Lunahalos\_26, MacKat\_26, MacnCheese\_26, Malthus\_28, Marcoliusprime\_22, Marshawn\_27, McMat\_26, Mdavu\_22, MeaningOfLife\_26, Megsy\_26, Milly\_22, Miryou\_24, MissDaisy\_27, Mitti\_27, Mufasa\_22, Murucutumbu\_26, Mynx\_26, Neighly\_25, Nikao\_22, Niklas\_26, Nutello\_22, OkiRoe\_24, OmniCritical\_27, Omnicron\_25, Padfoot\_26, Padpat\_26, Paola\_24, Patt\_27, Peanam\_26, Peel\_26, Pharb\_25, Piatt\_26, Pisa1\_25, Pisa4\_25, Pixie\_25, Pokerus\_25, Prithvi\_26, Psycho\_25, Qhanda\_28, QuincyRose\_25, Ramen\_26, Rando14\_25, Rapunzel97\_26, Reptar3000\_27, Richo\_26, Rosmarinus\_26, Ruthiejr\_26, SamScheppers\_25, SgtBeansprout\_22, Shaobing\_26, ShedlockHolmes\_25, ShiaSurprise\_26, Slarp\_27, Slimphazie\_26, SoSeph\_24, Spock\_26, Stinson\_27, Strobilo\_22, Sulley\_26, TBond007\_25, TClif\_25, TM4\_22, Tachez\_26, TaiwanKao\_27, Taquito\_25, Teejan\_22, Thyatira\_24, TingHuaYa\_26, Tiri\_26, Topper\_26, Torres\_22, TreyKay\_26, TripleTrouble\_24, Trice\_22, TruffulaTree\_26, Twitch\_26, Validus\_26, Veliki\_26, ViviJ\_23, Waterfoul\_24, Wintermute\_27, Y10\_27, Y2\_27, YasnayaPolyana\_27, YoureAdopted\_25, Yuna\_27, Yunkel11\_26, Zabiza\_26, Zavala\_26, ZoeJ\_22,

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

- 

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

- Amgine\_24, Amohnition\_25, Applecrisp\_24, Bryler\_25, Cain\_25, Chris\_25, DarthP\_25, Ekdilam\_23, Ellie\_23, Fefferhead\_25, Hammy\_25, KiSi\_25, Krueger\_25, LaterM\_26, Lavahound\_24, LeMond\_25, MarkPhew\_26, Nibb\_25, November\_24, Oscar\_25, P3MA\_21, PhelpsODU\_25, Phrank\_25, Scarlett\_25, Shadow1\_24, SirPhilip\_25, Stellammi\_15, Stinson\_26, Sunflower1121\_24, Syra333\_25, TPA4\_23, Tierra\_25, Tigress9\_25, Unicorn\_25, Ximenita\_26,

### Summary by start number:

Start 30:

- Found in 3 of 216 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 200
- Called 100.0% of time when present
- Phage (with cluster) where this start called: P3MA\_21 (singleton), Stinson\_26 (K1), TPA4\_23 (singleton),

Start 31:

- Found in 1 of 216 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 200
- Called 100.0% of time when present
- Phage (with cluster) where this start called: LaterM\_26 (K1),

Start 32:

- Found in 30 of 216 ( 13.9% ) of genes in pham
- Manual Annotations of this start: 30 of 200
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Amgine\_24 (K6), Amohnition\_25 (K6), Applecrisp\_24 (K6), Bryler\_25 (K6), Cain\_25 (K6), Chris\_25 (K1), DarthP\_25 (K6), Ekdilam\_23 (K6), Ellie\_23 (K6), Fefferhead\_25 (K6), Hammy\_25 (K6), KiSi\_25 (K1), Krueger\_25 (K6), Lavahound\_24 (K6), LeMond\_25 (K1), MarkPhew\_26 (K1), Nibb\_25 (K1), November\_24 (K6), Oscar\_25 (K1), PhelpsODU\_25 (K6), Phrank\_25 (K6), Scarlett\_25 (K1), Shadow1\_24 (K6), SirPhilip\_25 (K6), Sunflower1121\_24 (K6), Syra333\_25 (K6), Tierra\_25 (K6), Tigress9\_25 (K6), Unicorn\_25 (K6), Ximenita\_26 (K6),

Start 33:

- Found in 181 of 216 ( 83.8% ) of genes in pham
- Manual Annotations of this start: 166 of 200
- Called 100.0% of time when present
- Phage (with cluster) where this start called: ActinUp\_26 (K1), Adephagia\_26 (K1), Adonis\_26 (K1), Agent47\_24 (K5), AlishaPH\_26 (K1), AlleyCat\_25 (K5), Amelie\_22 (K1), Aminay\_24 (K7), Anaya\_27 (K1), Angelica\_26 (K1), Apocalypse\_26 (K1), Asayake\_26 (K1), Atiba\_26 (K1), BEEST\_26 (K1), BGIlluviae\_26 (K1), BaghaKamala\_26 (K1), BananenDer11\_24 (K5), BarrelRoll\_26 (K1), Beezoo\_26 (K1), Belladonna\_26 (K1), Bern\_26 (K1), Binglebops\_22 (K1), Blizzard\_26 (K1), Bobquesha\_28 (K4), Boiiii\_26 (K1), Boilgate\_23 (K8), BoostSeason\_22 (K2), CREW\_26 (K1), CallaLilly\_26 (K1), Capricorn\_26 (K1), CaseJules\_26 (K1), Chancellor\_27 (K4), Chavito\_26 (K1), CheetoDust\_26 (K1), Cheetobro\_27 (K4), Clipper\_26 (K1), Collard\_24 (K5), CrimD\_26 (K1), Curiosium\_27 (K1), Dadosky\_25 (K5), Dalmuri\_26 (K1), DanSyl44\_28 (K4), Dartin\_26 (K1), Deby\_26 (K1), Devera\_26 (K1), DismalFunk\_22 (K2), DismalStressor\_22 (K2), Dole\_26 (K1), DoubleChamp\_24 (K5), Doughnut\_22 (K2), Durfee\_26 (K1), Edugator\_24 (K5), Efra2\_26 (K1), Emerson\_26 (K1), Enkosi\_22 (K1), Eponine\_27 (K4), Feyre\_24 (K5), Findley\_22 (K2), Fionnbharth\_27 (K4), Ganymede\_27 (K1), Gengar\_24 (K5), Geraldini\_26 (K1), Guanica15\_26 (K1), Guillsminger\_24 (K5), HedwigODU\_26 (K1), Heftyboy\_24 (K5), Homura\_26 (K1), Hurricane\_25 (K3), Hyperbowlee\_26 (K1), Illumine\_26 (K1), Inky\_26 (K1), InvictusManeo\_24 (K5), JAWS\_26 (K1), JF1\_27 (K4), Jarvi\_26 (K1), Jayhawk\_26 (K1), Jeckyll\_26 (K1), Joy99\_26 (K1), Juliette\_27 (K4), Keshu\_25 (K3), Kratio\_23 (K5), Kraw\_27 (K4), Larva\_25 (K5), LastHope\_26 (K1), Lea83\_25 (K3), Lebo14\_27 (K4), Leston\_24 (K5), LilDirt\_23 (K5), LilPharaoh\_22 (K1), LindNT\_26 (K1), Llorens\_26 (K1), Lunahalos\_26 (K1), MacKat\_26 (K1), MacnCheese\_26 (K3), Malthus\_28 (K4), Marcoliusprime\_22 (K2), Marshawn\_27 (K6), McMater\_26 (K1), Mdavu\_22 (K1), MeaningOfLife\_26 (K1), Megsy\_26 (K1), Milly\_22 (K2), Miryou\_24 (K5), MissDaisy\_27 (K4), Mitti\_27 (K4), Mufasa\_22 (K2), Murucutumbu\_26 (K1), Mynx\_26 (K1), Neighly\_25 (K3), Nikao\_22 (K1), Niklas\_26 (K1), Nutello\_22 (K1), OkiRoe\_24 (K5), OmniCritical\_27 (K4), Omnicron\_25 (K5), Padfoot\_26 (K1), Padpat\_26 (K1), Paola\_24 (K5), Patt\_27 (K4), Peanam\_26 (K1), Peel\_26 (K1), Pharb\_25 (K3), Piatt\_26 (K1), Pisa1\_25 (K1), Pisa4\_25 (K1), Pixie\_25 (K3), Pokerus\_25 (K1), Prithvi\_26 (K1), Psycho\_25 (K5), Qhanda\_28 (K4), QuincyRose\_25 (K1), Ramen\_26 (K1), Rando14\_25 (K5), Rapunzel97\_26 (K1), Reptar3000\_27 (K4), Richo\_26 (K1), Rosmarinus\_26 (K1), Ruthiejr\_26 (K4), SamScheppers\_25 (K4), SgtBeansprout\_22 (K1), Shaobing\_26 (K1), ShedlockHolmes\_25 (K3), ShiaSurprise\_26 (K1), Slarp\_27 (K4), Slimphazie\_26 (K1), SoSeph\_24 (K5), Spock\_26 (K1), Stinson\_27 (K1), Strobilo\_22 (K2), Sulley\_26 (K1), TBond007\_25

(K3), TClif\_25 (K6), TM4\_22 (K2), Tachez\_26 (K1), TaiwanKao\_27 (K1), Taquito\_25 (K4), Teejan\_22 (K1), Thyatira\_24 (K5), TingHuaYa\_26 (K1), Tiri\_26 (K1), Topper\_26 (K1), Torres\_22 (K1), TreyKay\_26 (K1), TribbleTrouble\_24 (K3), Trice\_22 (K1), TruffulaTree\_26 (K1), Twitch\_26 (K1), Validus\_26 (K1), Veliki\_26 (K1), ViviJ\_23 (K5), Waterfoul\_24 (K5), Wintermute\_27 (K4), Y10\_27 (K4), Y2\_27 (K4), YasnayaPolyana\_27 (K4), YoureAdopted\_25 (K1), Yuna\_27 (K6), Yunkel11\_26 (K1), Zabiza\_26 (K1), Zavala\_26 (K1), ZoeJ\_22 (K2),

Start 34:

- Found in 1 of 216 ( 0.5% ) of genes in pham
- Manual Annotations of this start: 1 of 200
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Stellammi\_15 (UNK),

### **Summary by clusters:**

There are 10 clusters represented in this pham: singleton, UNK, K3, K2, K1, K7, K6, K5, K4, K8,

Info for manual annotations of cluster K1:

- Start number 30 was manually annotated 1 time for cluster K1.
- Start number 31 was manually annotated 1 time for cluster K1.
- Start number 32 was manually annotated 7 times for cluster K1.
- Start number 33 was manually annotated 94 times for cluster K1.

Info for manual annotations of cluster K2:

- Start number 33 was manually annotated 11 times for cluster K2.

Info for manual annotations of cluster K3:

- Start number 33 was manually annotated 9 times for cluster K3.

Info for manual annotations of cluster K4:

- Start number 33 was manually annotated 22 times for cluster K4.

Info for manual annotations of cluster K5:

- Start number 33 was manually annotated 25 times for cluster K5.

Info for manual annotations of cluster K6:

- Start number 32 was manually annotated 23 times for cluster K6.
- Start number 33 was manually annotated 3 times for cluster K6.

Info for manual annotations of cluster K7:

- Start number 33 was manually annotated 1 time for cluster K7.

Info for manual annotations of cluster K8:

- Start number 33 was manually annotated 1 time for cluster K8.

Info for manual annotations of cluster UNK:

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

### **Gene Information:**

Gene: ActinUp\_26 Start: 20572, Stop: 20880, Start Num: 33  
Candidate Starts for ActinUp\_26:  
(Start: 33 @20572 has 166 MA's), (40, 20602), (48, 20680), (54, 20716),

Gene: Adephagia\_26 Start: 20569, Stop: 20877, Start Num: 33  
Candidate Starts for Adephagia\_26:  
(Start: 33 @20569 has 166 MA's), (40, 20599), (48, 20677), (54, 20713),

Gene: Adonis\_26 Start: 20575, Stop: 20883, Start Num: 33  
Candidate Starts for Adonis\_26:  
(Start: 33 @20575 has 166 MA's), (40, 20605), (48, 20683), (54, 20719),

Gene: Agent47\_24 Start: 20955, Stop: 21272, Start Num: 33  
Candidate Starts for Agent47\_24:  
(Start: 33 @20955 has 166 MA's), (49, 21069), (54, 21099), (56, 21126), (77, 21246),

Gene: AlishaPH\_26 Start: 20562, Stop: 20870, Start Num: 33  
Candidate Starts for AlishaPH\_26:  
(Start: 33 @20562 has 166 MA's), (40, 20592), (48, 20670), (54, 20706),

Gene: AlleyCat\_25 Start: 20892, Stop: 21209, Start Num: 33  
Candidate Starts for AlleyCat\_25:  
(Start: 33 @20892 has 166 MA's), (49, 21006), (56, 21063), (77, 21183),

Gene: Amelie\_22 Start: 20111, Stop: 20413, Start Num: 33  
Candidate Starts for Amelie\_22:  
(Start: 33 @20111 has 166 MA's), (48, 20219), (49, 20225), (54, 20255), (72, 20375),

Gene: Amgine\_24 Start: 20660, Stop: 20974, Start Num: 32  
Candidate Starts for Amgine\_24:  
(Start: 32 @20660 has 30 MA's), (43, 20720), (54, 20804), (74, 20951), (75, 20954),

Gene: Aminay\_24 Start: 20780, Stop: 21034, Start Num: 33  
Candidate Starts for Aminay\_24:  
(Start: 33 @20780 has 166 MA's), (40, 20810), (50, 20897), (55, 20939), (65, 21008),

Gene: Amohndition\_25 Start: 21059, Stop: 21373, Start Num: 32  
Candidate Starts for Amohndition\_25:  
(4, 20558), (6, 20579), (8, 20711), (13, 20852), (Start: 32 @21059 has 30 MA's), (43, 21119), (44, 21122), (54, 21203), (74, 21350), (75, 21353),

Gene: Anaya\_27 Start: 20588, Stop: 20896, Start Num: 33  
Candidate Starts for Anaya\_27:  
(Start: 33 @20588 has 166 MA's), (40, 20618), (48, 20696), (54, 20732), (65, 20816),

Gene: Angelica\_26 Start: 20537, Stop: 20845, Start Num: 33  
Candidate Starts for Angelica\_26:  
(Start: 33 @20537 has 166 MA's), (40, 20567), (48, 20645), (54, 20681),

Gene: Apocalypse\_26 Start: 20540, Stop: 20848, Start Num: 33  
Candidate Starts for Apocalypse\_26:  
(Start: 33 @20540 has 166 MA's), (40, 20570), (48, 20648), (54, 20684),

Gene: Applecrisp\_24 Start: 21074, Stop: 21388, Start Num: 32  
Candidate Starts for Applecrisp\_24:  
(Start: 32 @21074 has 30 MA's), (43, 21134), (54, 21218), (74, 21365), (75, 21368),

Gene: Asayake\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for Asayake\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Atiba\_26 Start: 20532, Stop: 20840, Start Num: 33  
Candidate Starts for Atiba\_26:  
(Start: 33 @20532 has 166 MA's), (40, 20562), (48, 20640), (54, 20676),

Gene: BEEST\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for BEEST\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: BGlluviae\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for BGlluviae\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: BaghaKamala\_26 Start: 20532, Stop: 20840, Start Num: 33  
Candidate Starts for BaghaKamala\_26:  
(Start: 33 @20532 has 166 MA's), (40, 20562), (48, 20640), (54, 20676),

Gene: BananenDer11\_24 Start: 20916, Stop: 21233, Start Num: 33  
Candidate Starts for BananenDer11\_24:  
(Start: 33 @20916 has 166 MA's), (49, 21030), (54, 21060), (56, 21087), (77, 21207),

Gene: BarrelRoll\_26 Start: 20555, Stop: 20863, Start Num: 33  
Candidate Starts for BarrelRoll\_26:  
(Start: 33 @20555 has 166 MA's), (40, 20585), (48, 20663), (54, 20699),

Gene: Beezoo\_26 Start: 20579, Stop: 20887, Start Num: 33  
Candidate Starts for Beezoo\_26:  
(Start: 33 @20579 has 166 MA's), (40, 20609), (48, 20687), (54, 20723),

Gene: Belladonna\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for Belladonna\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Bern\_26 Start: 20523, Stop: 20831, Start Num: 33  
Candidate Starts for Bern\_26:  
(Start: 33 @20523 has 166 MA's), (48, 20631), (54, 20667), (65, 20751),

Gene: Binglebops\_22 Start: 20111, Stop: 20413, Start Num: 33  
Candidate Starts for Binglebops\_22:  
(Start: 33 @20111 has 166 MA's), (48, 20219), (49, 20225), (54, 20255), (72, 20375),

Gene: Blizzard\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for Blizzard\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Bobquesha\_28 Start: 21779, Stop: 22024, Start Num: 33

Candidate Starts for Bobquesha\_28:  
(Start: 33 @21779 has 166 MA's), (65, 22007),

Gene: Boiiii\_26 Start: 20605, Stop: 20913, Start Num: 33  
Candidate Starts for Boiiii\_26:  
(Start: 33 @20605 has 166 MA's), (40, 20635), (48, 20713), (54, 20749),

Gene: Boilgate\_23 Start: 20959, Stop: 21213, Start Num: 33  
Candidate Starts for Boilgate\_23:  
(13, 20728), (Start: 33 @20959 has 166 MA's), (39, 20986), (43, 21019), (54, 21103),

Gene: BoostSeason\_22 Start: 18449, Stop: 18703, Start Num: 33  
Candidate Starts for BoostSeason\_22:  
(16, 18308), (29, 18437), (Start: 33 @18449 has 166 MA's), (40, 18479), (50, 18566), (65, 18677),

Gene: Bryler\_25 Start: 19758, Stop: 20069, Start Num: 32  
Candidate Starts for Bryler\_25:  
(Start: 32 @19758 has 30 MA's), (43, 19818), (54, 19902), (69, 20004),

Gene: CREW\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for CREW\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Cain\_25 Start: 19746, Stop: 20057, Start Num: 32  
Candidate Starts for Cain\_25:  
(Start: 32 @19746 has 30 MA's), (43, 19806), (54, 19890), (69, 19992),

Gene: CallaLilly\_26 Start: 20526, Stop: 20834, Start Num: 33  
Candidate Starts for CallaLilly\_26:  
(Start: 33 @20526 has 166 MA's), (40, 20556), (48, 20634), (54, 20670),

Gene: Capricorn\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for Capricorn\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: CaseJules\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for CaseJules\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Chancellor\_27 Start: 22045, Stop: 22290, Start Num: 33  
Candidate Starts for Chancellor\_27:  
(Start: 33 @22045 has 166 MA's), (65, 22273),

Gene: Chavito\_26 Start: 19940, Stop: 20242, Start Num: 33  
Candidate Starts for Chavito\_26:  
(Start: 33 @19940 has 166 MA's), (41, 19976), (43, 20000), (48, 20048), (49, 20054), (54, 20084),

Gene: CheetoDust\_26 Start: 20580, Stop: 20888, Start Num: 33  
Candidate Starts for CheetoDust\_26:  
(Start: 33 @20580 has 166 MA's), (40, 20610), (48, 20688), (54, 20724),

Gene: Cheetobro\_27 Start: 22042, Stop: 22287, Start Num: 33  
Candidate Starts for Cheetobro\_27:

(Start: 33 @22042 has 166 MA's), (65, 22270),

Gene: Chris\_25 Start: 19832, Stop: 20134, Start Num: 32

Candidate Starts for Chris\_25:

(12, 19604), (16, 19694), (18, 19715), (19, 19733), (26, 19808), (Start: 32 @19832 has 30 MA's), (44, 19895), (54, 19976), (63, 20039),

Gene: Clipper\_26 Start: 20580, Stop: 20888, Start Num: 33

Candidate Starts for Clipper\_26:

(Start: 33 @20580 has 166 MA's), (40, 20610), (48, 20688), (54, 20724),

Gene: Collard\_24 Start: 20916, Stop: 21233, Start Num: 33

Candidate Starts for Collard\_24:

(Start: 33 @20916 has 166 MA's), (49, 21030), (54, 21060), (56, 21087), (77, 21207),

Gene: CrimD\_26 Start: 20541, Stop: 20849, Start Num: 33

Candidate Starts for CrimD\_26:

(Start: 33 @20541 has 166 MA's), (40, 20571), (48, 20649), (54, 20685),

Gene: Curiosium\_27 Start: 20274, Stop: 20582, Start Num: 33

Candidate Starts for Curiosium\_27:

(Start: 33 @20274 has 166 MA's), (40, 20304), (48, 20382), (54, 20418),

Gene: Dadosky\_25 Start: 20893, Stop: 21210, Start Num: 33

Candidate Starts for Dadosky\_25:

(Start: 33 @20893 has 166 MA's), (49, 21007), (56, 21064), (77, 21184),

Gene: Dalmuri\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Dalmuri\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: DanSyl44\_28 Start: 22048, Stop: 22293, Start Num: 33

Candidate Starts for DanSyl44\_28:

(Start: 33 @22048 has 166 MA's), (65, 22276),

Gene: DarthP\_25 Start: 21005, Stop: 21319, Start Num: 32

Candidate Starts for DarthP\_25:

(4, 20504), (6, 20525), (8, 20657), (13, 20798), (Start: 32 @21005 has 30 MA's), (43, 21065), (44, 21068), (54, 21149), (74, 21296), (75, 21299),

Gene: Dartin\_26 Start: 19927, Stop: 20229, Start Num: 33

Candidate Starts for Dartin\_26:

(Start: 33 @19927 has 166 MA's), (41, 19963), (43, 19987), (48, 20035), (49, 20041), (54, 20071),

Gene: Deby\_26 Start: 20537, Stop: 20845, Start Num: 33

Candidate Starts for Deby\_26:

(Start: 33 @20537 has 166 MA's), (40, 20567), (48, 20645), (54, 20681),

Gene: Devera\_26 Start: 20585, Stop: 20893, Start Num: 33

Candidate Starts for Devera\_26:

(Start: 33 @20585 has 166 MA's), (40, 20615), (48, 20693), (54, 20729),

Gene: DismalFunk\_22 Start: 18423, Stop: 18677, Start Num: 33

Candidate Starts for DismalFunk\_22:  
(16, 18282), (29, 18411), (Start: 33 @18423 has 166 MA's), (40, 18453), (50, 18540), (65, 18651),

Gene: DismalStressor\_22 Start: 18423, Stop: 18677, Start Num: 33  
Candidate Starts for DismalStressor\_22:  
(16, 18282), (29, 18411), (Start: 33 @18423 has 166 MA's), (40, 18453), (50, 18540), (65, 18651),

Gene: Dole\_26 Start: 20587, Stop: 20895, Start Num: 33  
Candidate Starts for Dole\_26:  
(Start: 33 @20587 has 166 MA's), (40, 20617), (48, 20695), (54, 20731),

Gene: DoubleChamp\_24 Start: 20916, Stop: 21233, Start Num: 33  
Candidate Starts for DoubleChamp\_24:  
(Start: 33 @20916 has 166 MA's), (49, 21030), (54, 21060), (56, 21087), (77, 21207),

Gene: Doughnut\_22 Start: 18443, Stop: 18697, Start Num: 33  
Candidate Starts for Doughnut\_22:  
(16, 18302), (29, 18431), (Start: 33 @18443 has 166 MA's), (40, 18473), (50, 18560), (65, 18671),

Gene: Durfee\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for Durfee\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Edugator\_24 Start: 20892, Stop: 21209, Start Num: 33  
Candidate Starts for Edugator\_24:  
(Start: 33 @20892 has 166 MA's), (49, 21006), (56, 21063), (77, 21183),

Gene: Efra2\_26 Start: 19773, Stop: 20081, Start Num: 33  
Candidate Starts for Efra2\_26:  
(Start: 33 @19773 has 166 MA's), (40, 19803), (48, 19881), (54, 19917),

Gene: Ekdilam\_23 Start: 20770, Stop: 21084, Start Num: 32  
Candidate Starts for Ekdilam\_23:  
(8, 20422), (13, 20563), (Start: 32 @20770 has 30 MA's), (43, 20830), (54, 20914), (69, 21016),

Gene: Ellie\_23 Start: 20744, Stop: 21058, Start Num: 32  
Candidate Starts for Ellie\_23:  
(Start: 32 @20744 has 30 MA's), (43, 20804), (54, 20888), (74, 21035), (75, 21038),

Gene: Emerson\_26 Start: 20563, Stop: 20871, Start Num: 33  
Candidate Starts for Emerson\_26:  
(Start: 33 @20563 has 166 MA's), (40, 20593), (48, 20671), (54, 20707),

Gene: Enkosi\_22 Start: 20111, Stop: 20413, Start Num: 33  
Candidate Starts for Enkosi\_22:  
(Start: 33 @20111 has 166 MA's), (48, 20219), (49, 20225), (54, 20255), (72, 20375),

Gene: Eponine\_27 Start: 21935, Stop: 22180, Start Num: 33  
Candidate Starts for Eponine\_27:  
(Start: 33 @21935 has 166 MA's),

Gene: Fefferhead\_25 Start: 20911, Stop: 21225, Start Num: 32  
Candidate Starts for Fefferhead\_25:

(Start: 32 @20911 has 30 MA's), (43, 20971), (54, 21055), (74, 21202), (75, 21205),

Gene: Feyre\_24 Start: 20777, Stop: 21094, Start Num: 33

Candidate Starts for Feyre\_24:

(Start: 33 @20777 has 166 MA's), (49, 20891), (54, 20921), (56, 20948), (77, 21068),

Gene: Findley\_22 Start: 18423, Stop: 18677, Start Num: 33

Candidate Starts for Findley\_22:

(Start: 33 @18423 has 166 MA's), (40, 18453), (43, 18483), (50, 18540), (65, 18651),

Gene: Fionnbharth\_27 Start: 22035, Stop: 22280, Start Num: 33

Candidate Starts for Fionnbharth\_27:

(Start: 33 @22035 has 166 MA's), (65, 22263),

Gene: Ganymede\_27 Start: 20583, Stop: 20891, Start Num: 33

Candidate Starts for Ganymede\_27:

(Start: 33 @20583 has 166 MA's), (40, 20613), (48, 20691), (54, 20727),

Gene: Gengar\_24 Start: 20884, Stop: 21201, Start Num: 33

Candidate Starts for Gengar\_24:

(Start: 33 @20884 has 166 MA's), (40, 20914), (49, 20998), (54, 21028), (56, 21055), (77, 21175), (78, 21181),

Gene: Geraldini\_26 Start: 20579, Stop: 20887, Start Num: 33

Candidate Starts for Geraldini\_26:

(Start: 33 @20579 has 166 MA's), (40, 20609), (48, 20687), (54, 20723),

Gene: Guanica15\_26 Start: 19789, Stop: 20097, Start Num: 33

Candidate Starts for Guanica15\_26:

(Start: 33 @19789 has 166 MA's), (40, 19819), (48, 19897), (54, 19933),

Gene: Guillsminger\_24 Start: 20859, Stop: 21176, Start Num: 33

Candidate Starts for Guillsminger\_24:

(Start: 33 @20859 has 166 MA's), (49, 20973), (54, 21003), (56, 21030), (77, 21150),

Gene: Hammy\_25 Start: 21002, Stop: 21316, Start Num: 32

Candidate Starts for Hammy\_25:

(4, 20501), (6, 20522), (8, 20654), (13, 20795), (Start: 32 @21002 has 30 MA's), (43, 21062), (44, 21065), (54, 21146), (74, 21293), (75, 21296),

Gene: HedwigODU\_26 Start: 20572, Stop: 20880, Start Num: 33

Candidate Starts for HedwigODU\_26:

(Start: 33 @20572 has 166 MA's), (40, 20602), (48, 20680), (54, 20716),

Gene: Heftyboy\_24 Start: 21007, Stop: 21324, Start Num: 33

Candidate Starts for Heftyboy\_24:

(Start: 33 @21007 has 166 MA's), (49, 21121), (54, 21151), (56, 21178), (77, 21298),

Gene: Homura\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Homura\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Hurricane\_25 Start: 21014, Stop: 21331, Start Num: 33

Candidate Starts for Hurricane\_25:

(Start: 33 @21014 has 166 MA's), (54, 21158), (60, 21203), (61, 21209), (76, 21308),

Gene: Hyperbowlee\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Hyperbowlee\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Illumine\_26 Start: 20587, Stop: 20895, Start Num: 33

Candidate Starts for Illumine\_26:

(Start: 33 @20587 has 166 MA's), (40, 20617), (48, 20695), (54, 20731),

Gene: Inky\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Inky\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: InvictusManeo\_24 Start: 20959, Stop: 21276, Start Num: 33

Candidate Starts for InvictusManeo\_24:

(Start: 33 @20959 has 166 MA's), (49, 21073), (54, 21103), (56, 21130), (77, 21250),

Gene: JAWS\_26 Start: 20557, Stop: 20865, Start Num: 33

Candidate Starts for JAWS\_26:

(Start: 33 @20557 has 166 MA's), (40, 20587), (48, 20665), (54, 20701),

Gene: JF1\_27 Start: 22034, Stop: 22279, Start Num: 33

Candidate Starts for JF1\_27:

(Start: 33 @22034 has 166 MA's), (65, 22262),

Gene: Jarvi\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Jarvi\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Jayhawk\_26 Start: 20570, Stop: 20878, Start Num: 33

Candidate Starts for Jayhawk\_26:

(Start: 33 @20570 has 166 MA's), (40, 20600), (48, 20678), (54, 20714),

Gene: Jeckyll\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Jeckyll\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Joy99\_26 Start: 20532, Stop: 20840, Start Num: 33

Candidate Starts for Joy99\_26:

(Start: 33 @20532 has 166 MA's), (40, 20562), (48, 20640), (54, 20676),

Gene: Juliette\_27 Start: 21935, Stop: 22180, Start Num: 33

Candidate Starts for Juliette\_27:

(Start: 33 @21935 has 166 MA's),

Gene: Keshu\_25 Start: 21006, Stop: 21314, Start Num: 33

Candidate Starts for Keshu\_25:

(Start: 33 @21006 has 166 MA's), (53, 21147), (60, 21195), (61, 21201), (73, 21288), (76, 21300),

Gene: KiSi\_25 Start: 19734, Stop: 20036, Start Num: 32

Candidate Starts for KiSi\_25:

(Start: 32 @19734 has 30 MA's), (44, 19797), (54, 19878),

Gene: Kratio\_23 Start: 20590, Stop: 20907, Start Num: 33

Candidate Starts for Kratio\_23:

(Start: 33 @20590 has 166 MA's), (49, 20704), (54, 20734), (56, 20761), (77, 20881),

Gene: Kraw\_27 Start: 21958, Stop: 22203, Start Num: 33

Candidate Starts for Kraw\_27:

(Start: 33 @21958 has 166 MA's), (65, 22186),

Gene: Krueger\_25 Start: 19703, Stop: 20014, Start Num: 32

Candidate Starts for Krueger\_25:

(Start: 32 @19703 has 30 MA's), (43, 19763), (54, 19847), (55, 19862),

Gene: Larva\_25 Start: 20760, Stop: 21077, Start Num: 33

Candidate Starts for Larva\_25:

(Start: 33 @20760 has 166 MA's), (49, 20874), (56, 20931), (77, 21051),

Gene: LastHope\_26 Start: 19866, Stop: 20174, Start Num: 33

Candidate Starts for LastHope\_26:

(Start: 33 @19866 has 166 MA's), (43, 19926), (54, 20010), (69, 20112),

Gene: LaterM\_26 Start: 20549, Stop: 20809, Start Num: 31

Candidate Starts for LaterM\_26:

(10, 20258), (14, 20336), (17, 20402), (20, 20459), (21, 20462), (26, 20507), (Start: 31 @20549 has 1 MA's), (43, 20615), (45, 20621), (51, 20678), (65, 20783), (68, 20798),

Gene: Lavahound\_24 Start: 20663, Stop: 20977, Start Num: 32

Candidate Starts for Lavahound\_24:

(Start: 32 @20663 has 30 MA's), (43, 20723), (54, 20807), (74, 20954), (75, 20957),

Gene: LeMond\_25 Start: 19805, Stop: 20107, Start Num: 32

Candidate Starts for LeMond\_25:

(Start: 32 @19805 has 30 MA's), (44, 19868), (54, 19949),

Gene: Lea83\_25 Start: 20994, Stop: 21302, Start Num: 33

Candidate Starts for Lea83\_25:

(Start: 33 @20994 has 166 MA's), (53, 21135), (60, 21183), (61, 21189), (76, 21288),

Gene: Lebo14\_27 Start: 22051, Stop: 22296, Start Num: 33

Candidate Starts for Lebo14\_27:

(Start: 33 @22051 has 166 MA's), (65, 22279),

Gene: Leston\_24 Start: 20989, Stop: 21306, Start Num: 33

Candidate Starts for Leston\_24:

(Start: 33 @20989 has 166 MA's), (49, 21103), (54, 21133), (56, 21160), (77, 21280),

Gene: LilDirt\_23 Start: 20716, Stop: 21033, Start Num: 33

Candidate Starts for LilDirt\_23:

(Start: 33 @20716 has 166 MA's), (49, 20830), (54, 20860), (56, 20887), (77, 21007),

Gene: LilPharaoh\_22 Start: 20111, Stop: 20413, Start Num: 33

Candidate Starts for LilPharaoh\_22:

(Start: 33 @20111 has 166 MA's), (48, 20219), (49, 20225), (54, 20255), (72, 20375),

Gene: LindNT\_26 Start: 20537, Stop: 20845, Start Num: 33

Candidate Starts for LindNT\_26:

(Start: 33 @20537 has 166 MA's), (40, 20567), (48, 20645), (54, 20681), (65, 20765),

Gene: Llorens\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Llorens\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Lunahalos\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Lunahalos\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: MacKat\_26 Start: 20580, Stop: 20888, Start Num: 33

Candidate Starts for MacKat\_26:

(Start: 33 @20580 has 166 MA's), (40, 20610), (48, 20688), (54, 20724),

Gene: MacnCheese\_26 Start: 21248, Stop: 21556, Start Num: 33

Candidate Starts for MacnCheese\_26:

(6, 20759), (8, 20891), (Start: 33 @21248 has 166 MA's), (40, 21278), (60, 21437), (61, 21443), (76, 21542),

Gene: Malthus\_28 Start: 21958, Stop: 22203, Start Num: 33

Candidate Starts for Malthus\_28:

(Start: 33 @21958 has 166 MA's), (65, 22186),

Gene: Marcoliusprime\_22 Start: 18423, Stop: 18677, Start Num: 33

Candidate Starts for Marcoliusprime\_22:

(16, 18282), (29, 18411), (Start: 33 @18423 has 166 MA's), (40, 18453), (50, 18540), (65, 18651),

Gene: MarkPhew\_26 Start: 19694, Stop: 19996, Start Num: 32

Candidate Starts for MarkPhew\_26:

(Start: 32 @19694 has 30 MA's), (44, 19757), (54, 19838),

Gene: Marshawn\_27 Start: 20316, Stop: 20672, Start Num: 33

Candidate Starts for Marshawn\_27:

(11, 20082), (16, 20178), (Start: 33 @20316 has 166 MA's), (41, 20352), (42, 20370), (43, 20376), (60, 20505), (62, 20517), (66, 20553),

Gene: McMater\_26 Start: 19927, Stop: 20229, Start Num: 33

Candidate Starts for McMater\_26:

(Start: 33 @19927 has 166 MA's), (41, 19963), (43, 19987), (48, 20035), (49, 20041), (54, 20071),

Gene: Mdavu\_22 Start: 20099, Stop: 20401, Start Num: 33

Candidate Starts for Mdavu\_22:

(Start: 33 @20099 has 166 MA's), (48, 20207), (49, 20213), (54, 20243), (72, 20363),

Gene: MeaningOfLife\_26 Start: 20539, Stop: 20847, Start Num: 33

Candidate Starts for MeaningOfLife\_26:

(Start: 33 @20539 has 166 MA's), (40, 20569), (48, 20647), (54, 20683),

Gene: Megsy\_26 Start: 20540, Stop: 20848, Start Num: 33

Candidate Starts for Megsy\_26:

(Start: 33 @20540 has 166 MA's), (40, 20570), (48, 20648), (54, 20684), (65, 20768),

Gene: Milly\_22 Start: 18423, Stop: 18677, Start Num: 33

Candidate Starts for Milly\_22:

(16, 18282), (22, 18372), (29, 18411), (Start: 33 @18423 has 166 MA's), (40, 18453), (50, 18540), (65, 18651),

Gene: Miryou\_24 Start: 20844, Stop: 21161, Start Num: 33

Candidate Starts for Miryou\_24:

(Start: 33 @20844 has 166 MA's), (49, 20958), (54, 20988), (56, 21015), (77, 21135),

Gene: MissDaisy\_27 Start: 21797, Stop: 22042, Start Num: 33

Candidate Starts for MissDaisy\_27:

(Start: 33 @21797 has 166 MA's), (65, 22025),

Gene: Mitti\_27 Start: 21958, Stop: 22203, Start Num: 33

Candidate Starts for Mitti\_27:

(Start: 33 @21958 has 166 MA's), (65, 22186),

Gene: Mufasa\_22 Start: 18443, Stop: 18697, Start Num: 33

Candidate Starts for Mufasa\_22:

(16, 18302), (29, 18431), (Start: 33 @18443 has 166 MA's), (40, 18473), (50, 18560), (65, 18671),

Gene: Murucutumbu\_26 Start: 20523, Stop: 20831, Start Num: 33

Candidate Starts for Murucutumbu\_26:

(Start: 33 @20523 has 166 MA's), (40, 20553), (48, 20631), (54, 20667),

Gene: Mynx\_26 Start: 20586, Stop: 20894, Start Num: 33

Candidate Starts for Mynx\_26:

(Start: 33 @20586 has 166 MA's), (40, 20616), (48, 20694), (54, 20730),

Gene: Neighly\_25 Start: 20759, Stop: 21076, Start Num: 33

Candidate Starts for Neighly\_25:

(Start: 33 @20759 has 166 MA's), (49, 20873), (56, 20930), (77, 21050),

Gene: Nibb\_25 Start: 19835, Stop: 20137, Start Num: 32

Candidate Starts for Nibb\_25:

(Start: 32 @19835 has 30 MA's), (44, 19898), (54, 19979), (69, 20081),

Gene: Nikao\_22 Start: 20111, Stop: 20413, Start Num: 33

Candidate Starts for Nikao\_22:

(Start: 33 @20111 has 166 MA's), (48, 20219), (49, 20225), (54, 20255), (72, 20375),

Gene: Niklas\_26 Start: 19930, Stop: 20232, Start Num: 33

Candidate Starts for Niklas\_26:

(Start: 33 @19930 has 166 MA's), (41, 19966), (43, 19990), (48, 20038), (49, 20044), (54, 20074),

Gene: November\_24 Start: 20899, Stop: 21213, Start Num: 32

Candidate Starts for November\_24:

(Start: 32 @20899 has 30 MA's), (43, 20959), (44, 20962), (54, 21043), (74, 21190), (75, 21193),

Gene: Nutello\_22 Start: 20111, Stop: 20413, Start Num: 33

Candidate Starts for Nutello\_22:

(Start: 33 @20111 has 166 MA's), (48, 20219), (49, 20225), (54, 20255), (72, 20375),

Gene: OkiRoe\_24 Start: 20860, Stop: 21177, Start Num: 33

Candidate Starts for OkiRoe\_24:

(Start: 33 @20860 has 166 MA's), (49, 20974), (54, 21004), (56, 21031), (77, 21151),

Gene: OmniCritical\_27 Start: 21943, Stop: 22188, Start Num: 33

Candidate Starts for OmniCritical\_27:

(Start: 33 @21943 has 166 MA's), (65, 22171),

Gene: Omnicron\_25 Start: 19679, Stop: 19996, Start Num: 33

Candidate Starts for Omnicron\_25:

(Start: 33 @19679 has 166 MA's), (49, 19793), (54, 19823), (56, 19850), (77, 19970),

Gene: Oscar\_25 Start: 19806, Stop: 20108, Start Num: 32

Candidate Starts for Oscar\_25:

(Start: 32 @19806 has 30 MA's), (44, 19869), (54, 19950),

Gene: P3MA\_21 Start: 17693, Stop: 17974, Start Num: 30

Candidate Starts for P3MA\_21:

(27, 17678), (28, 17681), (Start: 30 @17693 has 2 MA's), (35, 17723), (37, 17729), (45, 17771), (47, 17780), (55, 17867), (58, 17891), (59, 17894), (64, 17927), (67, 17951),

Gene: Padfoot\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Padfoot\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Padpat\_26 Start: 20563, Stop: 20871, Start Num: 33

Candidate Starts for Padpat\_26:

(Start: 33 @20563 has 166 MA's), (40, 20593), (48, 20671), (54, 20707),

Gene: Paola\_24 Start: 20859, Stop: 21176, Start Num: 33

Candidate Starts for Paola\_24:

(Start: 33 @20859 has 166 MA's), (49, 20973), (54, 21003), (56, 21030), (77, 21150),

Gene: Patt\_27 Start: 21776, Stop: 22021, Start Num: 33

Candidate Starts for Patt\_27:

(Start: 33 @21776 has 166 MA's), (65, 22004),

Gene: Peanam\_26 Start: 19927, Stop: 20229, Start Num: 33

Candidate Starts for Peanam\_26:

(Start: 33 @19927 has 166 MA's), (41, 19963), (43, 19987), (48, 20035), (49, 20041), (54, 20071),

Gene: Peel\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Peel\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Pharb\_25 Start: 20852, Stop: 21169, Start Num: 33

Candidate Starts for Pharb\_25:

(4, 20342), (6, 20363), (8, 20495), (9, 20567), (Start: 33 @20852 has 166 MA's), (50, 20969), (69, 21098),

Gene: PhelpsODU\_25 Start: 19781, Stop: 20092, Start Num: 32  
Candidate Starts for PhelpsODU\_25:  
(Start: 32 @19781 has 30 MA's), (43, 19841), (54, 19925), (69, 20027),

Gene: Phrank\_25 Start: 19734, Stop: 20045, Start Num: 32  
Candidate Starts for Phrank\_25:  
(Start: 32 @19734 has 30 MA's), (43, 19794), (54, 19878), (69, 19980),

Gene: Piatt\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for Piatt\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Pisa1\_25 Start: 20637, Stop: 20945, Start Num: 33  
Candidate Starts for Pisa1\_25:  
(Start: 33 @20637 has 166 MA's), (48, 20745), (54, 20781), (65, 20865),

Gene: Pisa4\_25 Start: 20637, Stop: 20945, Start Num: 33  
Candidate Starts for Pisa4\_25:  
(Start: 33 @20637 has 166 MA's), (48, 20745), (54, 20781), (65, 20865),

Gene: Pixie\_25 Start: 20785, Stop: 21102, Start Num: 33  
Candidate Starts for Pixie\_25:  
(Start: 33 @20785 has 166 MA's), (60, 20974), (61, 20980),

Gene: Pokerus\_25 Start: 20520, Stop: 20828, Start Num: 33  
Candidate Starts for Pokerus\_25:  
(Start: 33 @20520 has 166 MA's), (40, 20550), (48, 20628), (54, 20664),

Gene: Prithvi\_26 Start: 20537, Stop: 20845, Start Num: 33  
Candidate Starts for Prithvi\_26:  
(Start: 33 @20537 has 166 MA's), (40, 20567), (48, 20645), (54, 20681), (65, 20765),

Gene: Psycho\_25 Start: 20890, Stop: 21207, Start Num: 33  
Candidate Starts for Psycho\_25:  
(Start: 33 @20890 has 166 MA's), (49, 21004), (56, 21061), (77, 21181),

Gene: Qhanda\_28 Start: 22054, Stop: 22299, Start Num: 33  
Candidate Starts for Qhanda\_28:  
(Start: 33 @22054 has 166 MA's), (65, 22282),

Gene: QuincyRose\_25 Start: 20583, Stop: 20891, Start Num: 33  
Candidate Starts for QuincyRose\_25:  
(Start: 33 @20583 has 166 MA's), (40, 20613), (48, 20691), (54, 20727),

Gene: Ramen\_26 Start: 20569, Stop: 20877, Start Num: 33  
Candidate Starts for Ramen\_26:  
(Start: 33 @20569 has 166 MA's), (40, 20599), (48, 20677), (54, 20713),

Gene: Rando14\_25 Start: 19578, Stop: 19880, Start Num: 33  
Candidate Starts for Rando14\_25:  
(Start: 33 @19578 has 166 MA's), (49, 19692), (54, 19722), (56, 19749), (70, 19827), (77, 19869),

Gene: Rapunzel97\_26 Start: 20570, Stop: 20878, Start Num: 33

Candidate Starts for Rapunzel97\_26:  
(Start: 33 @20570 has 166 MA's), (40, 20600), (48, 20678), (54, 20714),

Gene: Reptar3000\_27 Start: 21775, Stop: 22020, Start Num: 33  
Candidate Starts for Reptar3000\_27:  
(Start: 33 @21775 has 166 MA's), (50, 21892), (54, 21919), (65, 22003),

Gene: Richo\_26 Start: 19927, Stop: 20229, Start Num: 33  
Candidate Starts for Richo\_26:  
(Start: 33 @19927 has 166 MA's), (41, 19963), (43, 19987), (48, 20035), (49, 20041), (54, 20071),

Gene: Rosmarinus\_26 Start: 20591, Stop: 20899, Start Num: 33  
Candidate Starts for Rosmarinus\_26:  
(Start: 33 @20591 has 166 MA's), (40, 20621), (48, 20699), (54, 20735),

Gene: Ruthiejr\_26 Start: 21666, Stop: 21911, Start Num: 33  
Candidate Starts for Ruthiejr\_26:  
(Start: 33 @21666 has 166 MA's),

Gene: SamScheppers\_25 Start: 21573, Stop: 21818, Start Num: 33  
Candidate Starts for SamScheppers\_25:  
(Start: 33 @21573 has 166 MA's), (65, 21801),

Gene: Scarlett\_25 Start: 19808, Stop: 20110, Start Num: 32  
Candidate Starts for Scarlett\_25:  
(Start: 32 @19808 has 30 MA's), (44, 19871), (54, 19952),

Gene: SgtBeansprout\_22 Start: 20111, Stop: 20413, Start Num: 33  
Candidate Starts for SgtBeansprout\_22:  
(Start: 33 @20111 has 166 MA's), (48, 20219), (49, 20225), (54, 20255), (72, 20375),

Gene: Shadow1\_24 Start: 19608, Stop: 19919, Start Num: 32  
Candidate Starts for Shadow1\_24:  
(Start: 32 @19608 has 30 MA's), (43, 19668), (46, 19680), (54, 19752),

Gene: Shaobing\_26 Start: 19927, Stop: 20229, Start Num: 33  
Candidate Starts for Shaobing\_26:  
(Start: 33 @19927 has 166 MA's), (41, 19963), (43, 19987), (48, 20035), (49, 20041), (54, 20071),

Gene: ShedlockHolmes\_25 Start: 20994, Stop: 21302, Start Num: 33  
Candidate Starts for ShedlockHolmes\_25:  
(Start: 33 @20994 has 166 MA's), (53, 21135), (60, 21183), (61, 21189), (76, 21288),

Gene: ShiaSurprise\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for ShiaSurprise\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: SirPhilip\_25 Start: 19446, Stop: 19754, Start Num: 32  
Candidate Starts for SirPhilip\_25:  
(Start: 32 @19446 has 30 MA's), (43, 19506), (48, 19554), (54, 19590), (69, 19692),

Gene: Slarp\_27 Start: 22045, Stop: 22290, Start Num: 33  
Candidate Starts for Slarp\_27:

(Start: 33 @22045 has 166 MA's), (65, 22273),

Gene: Slimphazie\_26 Start: 20570, Stop: 20878, Start Num: 33

Candidate Starts for Slimphazie\_26:

(Start: 33 @20570 has 166 MA's), (40, 20600), (48, 20678), (54, 20714),

Gene: SoSeph\_24 Start: 21007, Stop: 21324, Start Num: 33

Candidate Starts for SoSeph\_24:

(Start: 33 @21007 has 166 MA's), (49, 21121), (54, 21151), (56, 21178), (77, 21298),

Gene: Spock\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Spock\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Stellammi\_15 Start: 13816, Stop: 14082, Start Num: 34

Candidate Starts for Stellammi\_15:

(15, 13624), (23, 13735), (24, 13750), (Start: 34 @13816 has 1 MA's), (38, 13837), (43, 13873), (44, 13876), (49, 13927), (57, 13990),

Gene: Stinson\_26 Start: 20535, Stop: 20807, Start Num: 30

Candidate Starts for Stinson\_26:

(Start: 30 @20535 has 2 MA's), (36, 20574), (45, 20616), (46, 20622), (59, 20736), (63, 20760),

Gene: Stinson\_27 Start: 20812, Stop: 21120, Start Num: 33

Candidate Starts for Stinson\_27:

(25, 20773), (Start: 33 @20812 has 166 MA's), (40, 20842), (43, 20872), (46, 20884), (48, 20920), (54, 20956), (60, 21001), (65, 21040),

Gene: Strobilo\_22 Start: 18423, Stop: 18677, Start Num: 33

Candidate Starts for Strobilo\_22:

(Start: 33 @18423 has 166 MA's), (40, 18453), (43, 18483), (50, 18540), (65, 18651),

Gene: Sulley\_26 Start: 20536, Stop: 20844, Start Num: 33

Candidate Starts for Sulley\_26:

(Start: 33 @20536 has 166 MA's), (40, 20566), (48, 20644), (54, 20680),

Gene: Sunflower1121\_24 Start: 19620, Stop: 19931, Start Num: 32

Candidate Starts for Sunflower1121\_24:

(Start: 32 @19620 has 30 MA's), (43, 19680), (46, 19692), (54, 19764),

Gene: Syra333\_25 Start: 19715, Stop: 20026, Start Num: 32

Candidate Starts for Syra333\_25:

(Start: 32 @19715 has 30 MA's), (43, 19775), (54, 19859), (55, 19874), (60, 19904),

Gene: TBond007\_25 Start: 20784, Stop: 21101, Start Num: 33

Candidate Starts for TBond007\_25:

(Start: 33 @20784 has 166 MA's), (60, 20973), (61, 20979), (76, 21078),

Gene: TClif\_25 Start: 19775, Stop: 20077, Start Num: 33

Candidate Starts for TClif\_25:

(11, 19538), (Start: 33 @19775 has 166 MA's), (43, 19835), (46, 19847), (54, 19919),

Gene: TM4\_22 Start: 18489, Stop: 18743, Start Num: 33

Candidate Starts for TM4\_22:

(Start: 33 @18489 has 166 MA's), (40, 18519), (43, 18549), (47, 18564), (50, 18606), (65, 18717),

Gene: TPA4\_23 Start: 21250, Stop: 21615, Start Num: 30

Candidate Starts for TPA4\_23:

(1, 20305), (2, 20443), (3, 20446), (5, 20767), (7, 20902), (Start: 30 @21250 has 2 MA's), (45, 21328), (47, 21337), (48, 21370), (52, 21400), (55, 21424), (79, 21592),

Gene: Tachez\_26 Start: 20532, Stop: 20840, Start Num: 33

Candidate Starts for Tachez\_26:

(Start: 33 @20532 has 166 MA's), (40, 20562), (48, 20640), (54, 20676),

Gene: TaiwanKao\_27 Start: 20543, Stop: 20851, Start Num: 33

Candidate Starts for TaiwanKao\_27:

(Start: 33 @20543 has 166 MA's), (40, 20573), (48, 20651), (54, 20687), (65, 20771),

Gene: Taquito\_25 Start: 21654, Stop: 21899, Start Num: 33

Candidate Starts for Taquito\_25:

(Start: 33 @21654 has 166 MA's), (65, 21882),

Gene: Teejan\_22 Start: 20111, Stop: 20413, Start Num: 33

Candidate Starts for Teejan\_22:

(Start: 33 @20111 has 166 MA's), (48, 20219), (49, 20225), (54, 20255), (72, 20375),

Gene: Thyatira\_24 Start: 20859, Stop: 21176, Start Num: 33

Candidate Starts for Thyatira\_24:

(Start: 33 @20859 has 166 MA's), (49, 20973), (54, 21003), (56, 21030), (77, 21150),

Gene: Tierra\_25 Start: 20455, Stop: 20766, Start Num: 32

Candidate Starts for Tierra\_25:

(Start: 32 @20455 has 30 MA's), (43, 20515), (54, 20599), (69, 20701),

Gene: Tigress9\_25 Start: 19703, Stop: 20014, Start Num: 32

Candidate Starts for Tigress9\_25:

(Start: 32 @19703 has 30 MA's), (43, 19763), (54, 19847), (55, 19862),

Gene: TingHuaYa\_26 Start: 19869, Stop: 20177, Start Num: 33

Candidate Starts for TingHuaYa\_26:

(Start: 33 @19869 has 166 MA's), (43, 19929), (54, 20013), (69, 20115),

Gene: Tiri\_26 Start: 20575, Stop: 20883, Start Num: 33

Candidate Starts for Tiri\_26:

(Start: 33 @20575 has 166 MA's), (40, 20605), (48, 20683), (54, 20719),

Gene: Topper\_26 Start: 20603, Stop: 20911, Start Num: 33

Candidate Starts for Topper\_26:

(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Torres\_22 Start: 20111, Stop: 20413, Start Num: 33

Candidate Starts for Torres\_22:

(Start: 33 @20111 has 166 MA's), (48, 20219), (49, 20225), (54, 20255), (72, 20375),

Gene: TreyKay\_26 Start: 20537, Stop: 20845, Start Num: 33

Candidate Starts for TreyKay\_26:  
(Start: 33 @20537 has 166 MA's), (40, 20567), (48, 20645), (54, 20681), (65, 20765),

Gene: TribelTrouble\_24 Start: 20821, Stop: 21129, Start Num: 33  
Candidate Starts for TribelTrouble\_24:  
(Start: 33 @20821 has 166 MA's), (54, 20965), (61, 21016), (71, 21073), (76, 21115),

Gene: Trice\_22 Start: 20111, Stop: 20413, Start Num: 33  
Candidate Starts for Trice\_22:  
(Start: 33 @20111 has 166 MA's), (48, 20219), (49, 20225), (54, 20255), (72, 20375),

Gene: TruffulaTree\_26 Start: 20566, Stop: 20874, Start Num: 33  
Candidate Starts for TruffulaTree\_26:  
(Start: 33 @20566 has 166 MA's), (40, 20596), (48, 20674), (53, 20707), (54, 20710),

Gene: Twitch\_26 Start: 20603, Stop: 20911, Start Num: 33  
Candidate Starts for Twitch\_26:  
(Start: 33 @20603 has 166 MA's), (40, 20633), (48, 20711), (54, 20747),

Gene: Unicorn\_25 Start: 19781, Stop: 20092, Start Num: 32  
Candidate Starts for Unicorn\_25:  
(Start: 32 @19781 has 30 MA's), (43, 19841), (54, 19925), (69, 20027),

Gene: Validus\_26 Start: 19858, Stop: 20166, Start Num: 33  
Candidate Starts for Validus\_26:  
(Start: 33 @19858 has 166 MA's), (43, 19918), (54, 20002), (65, 20086), (69, 20104),

Gene: Veliki\_26 Start: 20606, Stop: 20914, Start Num: 33  
Candidate Starts for Veliki\_26:  
(Start: 33 @20606 has 166 MA's), (40, 20636), (48, 20714), (54, 20750),

Gene: ViviJ\_23 Start: 20716, Stop: 21033, Start Num: 33  
Candidate Starts for ViviJ\_23:  
(Start: 33 @20716 has 166 MA's), (49, 20830), (54, 20860), (56, 20887), (77, 21007),

Gene: Waterfoul\_24 Start: 20880, Stop: 21197, Start Num: 33  
Candidate Starts for Waterfoul\_24:  
(Start: 33 @20880 has 166 MA's), (49, 20994), (54, 21024), (56, 21051), (77, 21171),

Gene: Wintermute\_27 Start: 22034, Stop: 22279, Start Num: 33  
Candidate Starts for Wintermute\_27:  
(Start: 33 @22034 has 166 MA's), (65, 22262),

Gene: Ximenita\_26 Start: 19893, Stop: 20204, Start Num: 32  
Candidate Starts for Ximenita\_26:  
(Start: 32 @19893 has 30 MA's), (43, 19953), (54, 20037), (55, 20052), (60, 20082),

Gene: Y10\_27 Start: 22034, Stop: 22279, Start Num: 33  
Candidate Starts for Y10\_27:  
(Start: 33 @22034 has 166 MA's), (65, 22262),

Gene: Y2\_27 Start: 22034, Stop: 22279, Start Num: 33  
Candidate Starts for Y2\_27:

(Start: 33 @22034 has 166 MA's), (65, 22262),

Gene: YasnayaPolyana\_27 Start: 22035, Stop: 22280, Start Num: 33

Candidate Starts for YasnayaPolyana\_27:

(Start: 33 @22035 has 166 MA's), (65, 22263),

Gene: YoureAdopted\_25 Start: 20539, Stop: 20847, Start Num: 33

Candidate Starts for YoureAdopted\_25:

(Start: 33 @20539 has 166 MA's), (40, 20569), (48, 20647), (54, 20683),

Gene: Yuna\_27 Start: 20510, Stop: 20818, Start Num: 33

Candidate Starts for Yuna\_27:

(Start: 33 @20510 has 166 MA's), (54, 20654), (69, 20756),

Gene: Yunkel11\_26 Start: 19789, Stop: 20097, Start Num: 33

Candidate Starts for Yunkel11\_26:

(Start: 33 @19789 has 166 MA's), (40, 19819), (48, 19897), (54, 19933),

Gene: Zabiza\_26 Start: 20570, Stop: 20878, Start Num: 33

Candidate Starts for Zabiza\_26:

(Start: 33 @20570 has 166 MA's), (40, 20600), (48, 20678), (54, 20714),

Gene: Zavala\_26 Start: 20545, Stop: 20853, Start Num: 33

Candidate Starts for Zavala\_26:

(Start: 33 @20545 has 166 MA's), (40, 20575), (48, 20653), (54, 20689),

Gene: ZoeJ\_22 Start: 18364, Stop: 18618, Start Num: 33

Candidate Starts for ZoeJ\_22:

(29, 18352), (Start: 33 @18364 has 166 MA's), (40, 18394), (50, 18481), (65, 18592),