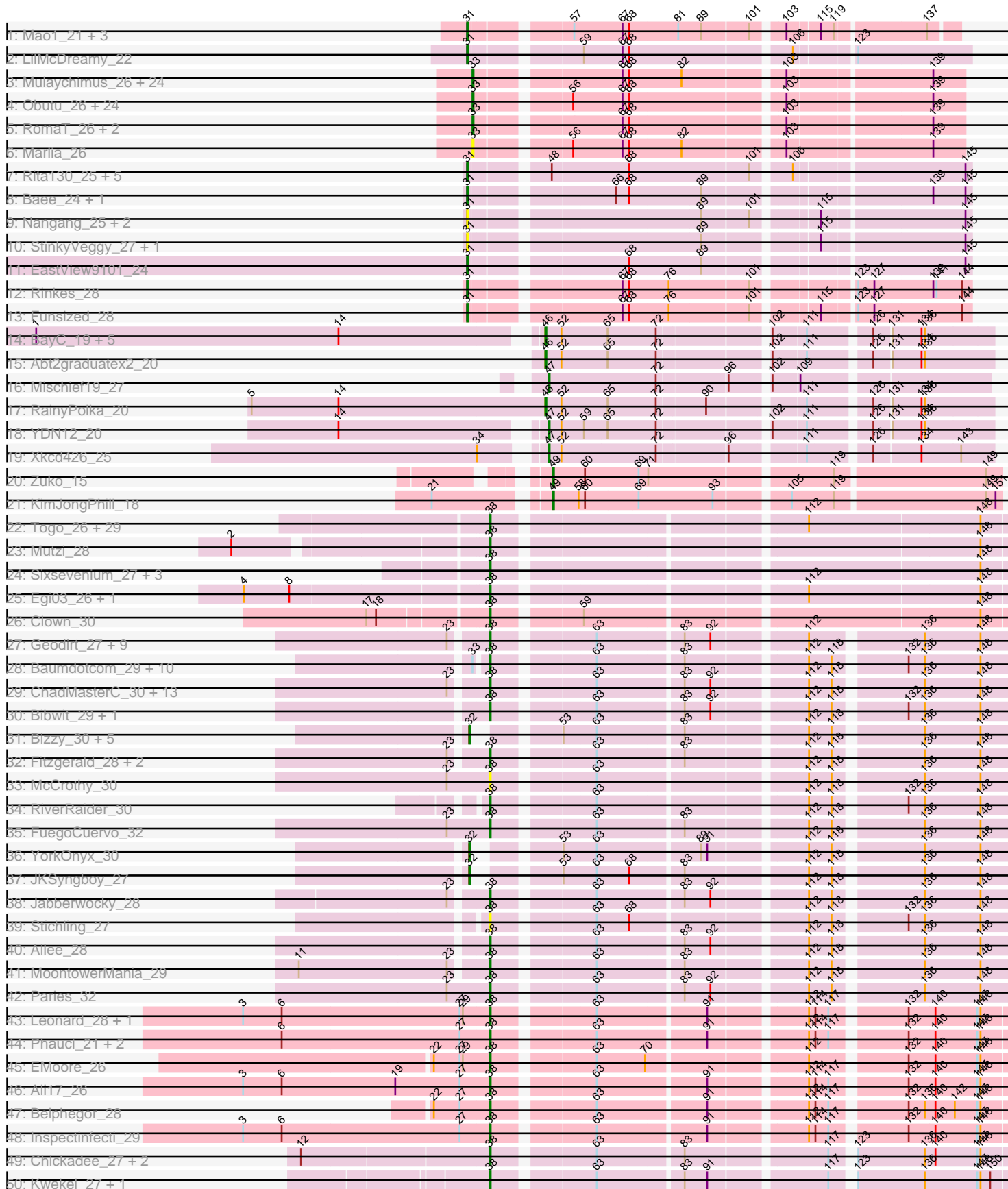
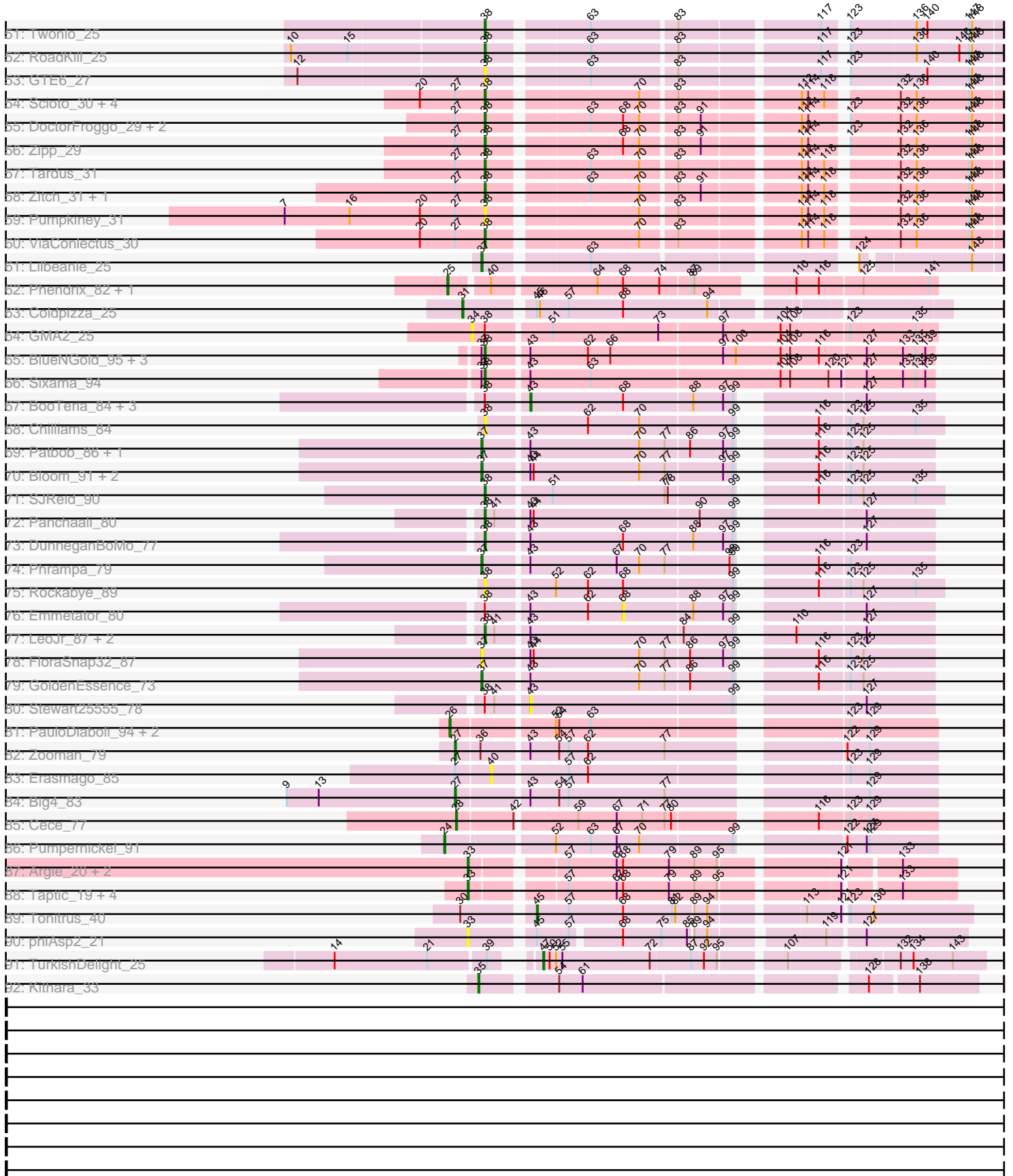


Pham 311180



Pham 311180



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 311180 Report

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

Pham number 311180 has 265 members, 36 are drafts.

Phages represented in each track:

- Track 1 : Mao1\_21, Mask\_22, Dori\_22, Sejanus\_22
- Track 2 : LilMcDreamy\_22
- Track 3 : Mulaychimus\_26, Bernardo\_26, GlenHope\_27, Tydolla\_26, Gervas\_26, Baloo\_26, Briakila\_26, Chentzyk\_25, Gadjet\_27, Audrey\_26, Phlyer\_26, Pipefish\_26, Mortcellus\_25, Marley1013\_26, Ben11\_25, TinyTerror\_26, Heathcliff\_26, SlippinJimmy\_26, Akoma\_26, Kronus\_25, Yahalom\_26, Halfpint\_25, MmasiCarm\_26, Chalmers\_26, Morty007\_26
- Track 4 : Obutu\_26, RagingRooster\_26, Shenandoah\_26, ChaChing\_26, Phayeta\_26, Athena\_27, SwainyDoc\_26, Corofin\_26, Devonte\_26, Glubnar\_27, Yinz\_26, Neos5\_26, Rita1961\_26, Olivio\_25, SynergyX\_26, LestyG\_26, Philly\_25, Chandler\_26, Compostia\_27, OrangeOswald\_26, Casbah\_25, Abinghost\_26, Deenasa\_26, Nozo\_26, Kamiyu\_26
- Track 5 : RomaT\_26, Daisy\_26, HarveySr\_26
- Track 6 : Marlia\_26
- Track 7 : Rita130\_25, Suigeneris\_25, Acadian\_25, Donny\_25, Reccee\_25, SirJeffery\_25
- Track 8 : Bae\_24, Rich\_24
- Track 9 : Nangang\_25, Shenyu\_25, DigitDog\_25
- Track 10 : StinkyVeggy\_27, KarasumaRum\_27
- Track 11 : EastView9101\_24
- Track 12 : Rinkes\_28
- Track 13 : Funsized\_28
- Track 14 : BayC\_19, TP1604\_19, Asis\_19, BabyGotBac\_19, Maih\_19, Salete\_19
- Track 15 : Abt2graduatex2\_20
- Track 16 : Mischief19\_27
- Track 17 : RainyPolka\_20
- Track 18 : YDN12\_20
- Track 19 : Xkcd426\_25
- Track 20 : Zuko\_15
- Track 21 : KimJongPhill\_18
- Track 22 : Togo\_26, Danyall\_28, Portcullis\_26, Gezellig\_26, Halo3\_27, JohnPork\_26, Evamon\_26, PullumCavea\_26, Valary\_29, RogerDodger\_29, Fugax\_28, KimmyK\_28, PinkCoffee\_28, CoveyB\_28, Nubi\_26, Shinji\_26, CherryCola\_29, Salvador\_26, Wizard\_26, Twister6\_28, ClamChowder\_28, Savbucketdawg\_26, Phlop\_26, Arri\_29, Barb\_28, Jambalaya\_26, VanDeWege\_29, TillyBobJoe\_26, Fireball\_27, SmokingBunny\_26
- Track 23 : Mutzi\_28

- Track 24 : Sixsevenium\_27, SharkTale\_26, YungMoney\_28, Bakery\_27
- Track 25 : Egi03\_26, Sendy\_27
- Track 26 : Clown\_30
- Track 27 : Geodirt\_27, Nordenberg\_24, Brandonk123\_31, Fosterous\_28, McKinley\_32, Tangent\_30, BobBob\_27, Rofo\_30, Galadriel\_30, Love\_33
- Track 28 : Baumdotcom\_29, SchottB\_28, Saronaya\_29, Tycho\_29, StorminNorm\_29, Ashertheman\_30, Kroos\_30, Kwobi\_31, LilHam\_27, Gustavo\_29, Tangerine\_29
- Track 29 : ChadMasterC\_30, Shivanishola\_31, Sanjuju\_28, Charming\_30, Kamashten\_29, Affeca\_28, Barsten\_30, Kewpiedoll\_29, Angelicage\_28, Stultus\_28, Vivi2\_32, Thing3\_29, Keitabear\_30, Brawn1\_26
- Track 30 : Bibwit\_29, Sedona\_30
- Track 31 : Bizzy\_30, Gaea\_29, Derg\_25, Flatwoods\_30, Baddon\_29, Ribeye\_30
- Track 32 : Fitzgerald\_28, Sitar\_30, Lennon\_30
- Track 33 : McCrothy\_30
- Track 34 : RiverRaider\_30
- Track 35 : FuegoCuervo\_32
- Track 36 : YorkOnyx\_30
- Track 37 : JKSyngboy\_27
- Track 38 : Jabberwocky\_28
- Track 39 : Stichling\_27
- Track 40 : Ailee\_28
- Track 41 : MoontowerMania\_29
- Track 42 : Paries\_32
- Track 43 : Leonard\_28, Phinally\_28
- Track 44 : Phauci\_21, Hans\_30, MelBins\_29
- Track 45 : EMoore\_26
- Track 46 : Ali17\_26
- Track 47 : Belphegor\_28
- Track 48 : Inspectinfecti\_29
- Track 49 : Chickadee\_27, Tiamoceli\_28, EdmundFerry\_26
- Track 50 : Kwekel\_27, Dexdert\_28
- Track 51 : Twonlo\_25
- Track 52 : RoadKill\_25
- Track 53 : GTE6\_27
- Track 54 : Scioto\_30, Natkenzie\_30, Abblin\_30, APunk\_31, Sampson\_30
- Track 55 : DoctorFroggo\_29, Verity\_29, Delrey21\_29
- Track 56 : Zipp\_29
- Track 57 : Tardus\_31
- Track 58 : Zitch\_31, BigHunkinEater\_33
- Track 59 : Pumpkiney\_31
- Track 60 : ViaConlectus\_30
- Track 61 : Lilbeanie\_25
- Track 62 : Phendrix\_82, GodonK\_84
- Track 63 : Coldpizza\_25
- Track 64 : GMA2\_25
- Track 65 : BlueNGold\_95, Forza\_96, Boopy\_96, Mareelih\_94
- Track 66 : Sixama\_94
- Track 67 : BooTeria\_84, KSunshine22\_82, Artu\_80, WaddleDee\_75
- Track 68 : Chilliams\_84
- Track 69 : Patbob\_86, Talia1610\_87
- Track 70 : Bloom\_91, Racecar\_88, Mimi\_87
- Track 71 : SJReid\_90

- Track 72 : Panchaali\_80
- Track 73 : DunneganBoMo\_77
- Track 74 : Phrampa\_79
- Track 75 : Rockabye\_89
- Track 76 : Emmetator\_80
- Track 77 : LeoJr\_87, ReginaGlobina\_87, Atuin\_82
- Track 78 : FloraSnap32\_87
- Track 79 : GoldenEssence\_73
- Track 80 : Stewart25555\_78
- Track 81 : PauloDiaboli\_94, Dodo\_96, A3Wally\_94
- Track 82 : Zooman\_79
- Track 83 : Erasmago\_85
- Track 84 : Big4\_83
- Track 85 : Cece\_77
- Track 86 : Pumpnickel\_91
- Track 87 : Argie\_20, GodPhather\_20, Jeon\_19
- Track 88 : Taptic\_19, PR\_19, Megabear\_19, Cepens\_19, D12\_19
- Track 89 : Tonitrus\_40
- Track 90 : phiAsp2\_21
- Track 91 : TurkishDelight\_25
- Track 92 : Kithara\_33

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

The start number called the most often in the published annotations is 38, it was called in 116 of the 229 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- APunk\_31, Abblin\_30, Affeca\_28, Ailee\_28, Ali17\_26, Angelicage\_28, Arri\_29, Ashertheman\_30, Atuin\_82, Bakery\_27, Barb\_28, Barsten\_30, Baumdotcom\_29, Belphegor\_28, Bibwit\_29, BigHunkinEater\_33, BlueNGold\_95, BobBob\_27, Boopy\_96, Brandonk123\_31, Brawn1\_26, ChadMasterC\_30, Charming\_30, CherryCola\_29, Chickadee\_27, Chilliams\_84, ClamChowder\_28, Clown\_30, CoveyB\_28, Danyall\_28, Delrey21\_29, Dexdert\_28, DoctorFroggo\_29, DunneganBoMo\_77, EMoore\_26, EdmundFerry\_26, Egi03\_26, Evamon\_26, Fireball\_27, Fitzgerald\_28, Forza\_96, Fosterous\_28, FuegoCuervo\_32, Fugax\_28, GTE6\_27, Galadriel\_30, Geodirt\_27, Gezellig\_26, Gustavo\_29, Halo3\_27, Hans\_30, Inspectinfecti\_29, Jabberwocky\_28, Jambalaya\_26, JohnPork\_26, Kamashten\_29, Keitabear\_30, Kewpiedoll\_29, KimmyK\_28, Kroos\_30, Kwekel\_27, Kwobi\_31, Lennon\_30, LeoJr\_87, Leonard\_28, LilHam\_27, Love\_33, Mareelih\_94, McCrothy\_30, McKinley\_32, MelBins\_29, MoontowerMania\_29, Mutzi\_28, Natkenzie\_30, Nordenberg\_24, Nubi\_26, Panchaali\_80, Paries\_32, Phauci\_21, Phinally\_28, Phlop\_26, PinkCoffee\_28, Portcullis\_26, PullumCavea\_26, Pumpkiney\_31, ReginaGlobina\_87, RiverRaider\_30, RoadKill\_25, Rockabye\_89, Rofo\_30, RogerDodger\_29, SJReid\_90, Salvador\_26, Sampson\_30, Sanjuju\_28, Saronaya\_29, Savbucketdawg\_26, SchottB\_28, Scioto\_30, Sedona\_30, Sendy\_27, SharkTale\_26, Shinji\_26, Shivanishola\_31, Sitar\_30, Sixama\_94, Sixsevenium\_27, SmokingBunny\_26, Stichling\_27, StorminNorm\_29, Stultus\_28, Tangent\_30, Tangerine\_29, Tardus\_31, Thing3\_29, Tiamoceli\_28, TillyBobJoe\_26, Togo\_26, Twister6\_28, Twonlo\_25, Tycho\_29, Valary\_29, VanDeWege\_29, Verity\_29,

ViaConlectus\_30, Vivi2\_32, Wizard\_26, YungMoney\_28, Zipp\_29, Zitch\_31,

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

- Artu\_80, BooTeria\_84, Emmetator\_80, GMA2\_25, KSunshine22\_82, Stewart25555\_78, WaddleDee\_75,

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

- A3Wally\_94, Abinghost\_26, Abt2graduatex2\_20, Acadian\_25, Akoma\_26, Argie\_20, Asis\_19, Athena\_27, Audrey\_26, BabyGotBac\_19, Baddon\_29, Bae\_24, Baloo\_26, BayC\_19, Ben11\_25, Bernardo\_26, Big4\_83, Bizzy\_30, Bloom\_91, Briakila\_26, Casbah\_25, Cece\_77, Cepens\_19, ChaChing\_26, Chalmers\_26, Chandler\_26, Chentzyk\_25, Coldpizza\_25, Compostia\_27, Corofin\_26, D12\_19, Daisy\_26, Deenasa\_26, Derg\_25, Devonte\_26, DigitDog\_25, Dodo\_96, Donny\_25, Dori\_22, EastView9101\_24, Erasmago\_85, Flatwoods\_30, FloraSnap32\_87, Funsized\_28, Gadget\_27, Gaea\_29, Gervas\_26, GlenHope\_27, Glubnar\_27, GodPhather\_20, GodonK\_84, GoldenEssence\_73, Halfpint\_25, HarveySr\_26, Heathcliff\_26, JKSyngboy\_27, Jeon\_19, Kamiyu\_26, KarasumaRum\_27, KimJongPhill\_18, Kithara\_33, Kronus\_25, LestyG\_26, LilMcDreamy\_22, Lilbeanie\_25, Maih\_19, Mao1\_21, Marley1013\_26, Marlia\_26, Mask\_22, Megabear\_19, Mimi\_87, Mischief19\_27, MmasiCarm\_26, Mortcellus\_25, Morty007\_26, Mulaychimus\_26, Nangang\_25, Neos5\_26, Nozo\_26, Obutu\_26, Olivio\_25, OrangeOswald\_26, PR\_19, Patbob\_86, PauloDiaboli\_94, Phayeta\_26, Phendrix\_82, Philly\_25, Phlyer\_26, Phrampa\_79, Pipefish\_26, Pumpernickel\_91, Racecar\_88, RagingRooster\_26, RainyPolka\_20, Reccee\_25, Ribeye\_30, Rich\_24, Rinkes\_28, Rita130\_25, Rita1961\_26, RomaT\_26, Salete\_19, Sejanus\_22, Shenandoah\_26, Shenyu\_25, SirJeffery\_25, SlippinJimmy\_26, StinkyVeggy\_27, Suigeneris\_25, SwainyDoc\_26, SynergyX\_26, TP1604\_19, Talia1610\_87, Taptic\_19, TinyTerror\_26, Tonitrus\_40, TurkishDelight\_25, Tydolla\_26, Xkcd426\_25, YDN12\_20, Yahalom\_26, Yinz\_26, YorkOnyx\_30, Zooman\_79, Zuko\_15, phiAsp2\_21,

### Summary by start number:

Start 24:

- Found in 1 of 265 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pumpernickel\_91 (GD4),

Start 25:

- Found in 2 of 265 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GodonK\_84 (DK), Phendrix\_82 (DK),

Start 26:

- Found in 3 of 265 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 3 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally\_94 (GD1), Dodo\_96 (GD1), PauloDiaboli\_94 (GD1),

Start 27:

- Found in 26 of 265 ( 9.8% ) of genes in pham

- Manual Annotations of this start: 2 of 229
- Called 7.7% of time when present
- Phage (with cluster) where this start called: Big4\_83 (GD2), Zooman\_79 (GD2),

#### Start 28:

- Found in 1 of 265 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Cece\_77 (GD3),

#### Start 31:

- Found in 22 of 265 ( 8.3% ) of genes in pham
- Manual Annotations of this start: 15 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Acadian\_25 (B5), Bae\_24 (B5), Coldpizza\_25 (DR), DigitDog\_25 (B5), Donny\_25 (B5), Dori\_22 (AD), EastView9101\_24 (B5), Funsized\_28 (B9), KarasumaRum\_27 (B5), LiIMcDreamy\_22 (B12), Mao1\_21 (AD), Mask\_22 (AD), Nangang\_25 (B5), Reccee\_25 (B5), Rich\_24 (B5), Rinkes\_28 (B9), Rita130\_25 (B5), Sejanus\_22 (AD), Shenyu\_25 (B5), SirJeffery\_25 (B5), StinkyVeggy\_27 (B5), Suigeneris\_25 (B5),

#### Start 32:

- Found in 8 of 265 ( 3.0% ) of genes in pham
- Manual Annotations of this start: 8 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Baddon\_29 (DE1), Bizzy\_30 (DE1), Derg\_25 (DE1), Flatwoods\_30 (DE1), Gaea\_29 (DE1), JKSyngboy\_27 (DE1), Ribeye\_30 (DE1), YorkOnyx\_30 (DE1),

#### Start 33:

- Found in 74 of 265 ( 27.9% ) of genes in pham
- Manual Annotations of this start: 57 of 229
- Called 85.1% of time when present
- Phage (with cluster) where this start called: Abinghost\_26 (B3), Akoma\_26 (B3), Argie\_20 (W), Athena\_27 (B3), Audrey\_26 (B3), Baloo\_26 (B3), Ben11\_25 (B3), Bernardo\_26 (B3), Briakila\_26 (B3), Casbah\_25 (B3), Cepens\_19 (W), ChaChing\_26 (B3), Chalmers\_26 (B3), Chandler\_26 (B3), Chentzyk\_25 (B3), Compostia\_27 (B3), Corofin\_26 (B3), D12\_19 (W), Daisy\_26 (B3), Deenasa\_26 (B3), Devonte\_26 (B3), Gadget\_27 (B3), Gervas\_26 (B3), GlenHope\_27 (B3), Glubnar\_27 (B3), GodPhather\_20 (W), Halfpint\_25 (B3), HarveySr\_26 (B3), Heathcliff\_26 (B3), Jeon\_19 (W), Kamiyu\_26 (B3), Kronus\_25 (B3), LestyG\_26 (B3), Marley1013\_26 (B3), Marlia\_26 (B3), Megabear\_19 (W), MmasiCarm\_26 (B3), Mortcellus\_25 (B3), Morty007\_26 (B3), Mulaychimus\_26 (B3), Neos5\_26 (B3), Nozo\_26 (B3), Obutu\_26 (B3), Olivio\_25 (B3), OrangeOswald\_26 (B3), PR\_19 (W), Phayeta\_26 (B3), Philly\_25 (B3), Phlyer\_26 (B3), Pipefish\_26 (B3), RagingRooster\_26 (B3), Rita1961\_26 (B3), RomaT\_26 (B3), Shenandoah\_26 (B3), SlippinJimmy\_26 (B3), SwainyDoc\_26 (B3), SynergyX\_26 (B3), Taptic\_19 (W), TinyTerror\_26 (B3), Tydolla\_26 (B3), Yahalom\_26 (B3), Yinz\_26 (B3), phiAsp2\_21 (singleton),

#### Start 34:

- Found in 2 of 265 ( 0.8% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present

- Phage (with cluster) where this start called: GMA2\_25 (DS),

Start 35:

- Found in 1 of 265 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Kithara\_33 (singleton),

Start 37:

- Found in 14 of 265 ( 5.3% ) of genes in pham
- Manual Annotations of this start: 7 of 229
- Called 64.3% of time when present
- Phage (with cluster) where this start called: Bloom\_91 (FC), FloraSnap32\_87 (FC), GoldenEssence\_73 (FC), Lilbeanie\_25 (DE5), Mimi\_87 (FC), Patbob\_86 (FC), Phrampa\_79 (FC), Racecar\_88 (FC), Talia1610\_87 (FC),

Start 38:

- Found in 137 of 265 ( 51.7% ) of genes in pham
- Manual Annotations of this start: 116 of 229
- Called 94.9% of time when present
- Phage (with cluster) where this start called: APunk\_31 (DE4), Abblin\_30 (DE4), Affeca\_28 (DE1), Ailee\_28 (DE1), Ali17\_26 (DE2), Angelicage\_28 (DE1), Arri\_29 (DC1), Ashertheman\_30 (DE1), Atuin\_82 (FC), Bakery\_27 (DC1), Barb\_28 (DC1), Barsten\_30 (DE1), Baumdotcom\_29 (DE1), Belphegor\_28 (DE2), Bibwit\_29 (DE1), BigHunkinEater\_33 (DE4), BlueNGold\_95 (DS), BobBob\_27 (DE1), Boopy\_96 (DS), Brandonk123\_31 (DE1), Brawn1\_26 (DE1), ChadMasterC\_30 (DE1), Charming\_30 (DE1), CherryCola\_29 (DC1), Chickadee\_27 (DE3), Chilliams\_84 (FC), ClamChowder\_28 (DC1), Clown\_30 (DC2), CoveyB\_28 (DC1), Danyall\_28 (DC1), Delrey21\_29 (DE4), Dextert\_28 (DE3), DoctorFroggo\_29 (DE4), DunneganBoMo\_77 (FC), EMoore\_26 (DE2), EdmundFerry\_26 (DE3), Egi03\_26 (DC1), Evamon\_26 (DC1), Fireball\_27 (DC1), Fitzgerald\_28 (DE1), Forza\_96 (DS), Fosterous\_28 (DE1), FuegoCuervo\_32 (DE1), Fugax\_28 (DC1), GTE6\_27 (DE3), Galadriel\_30 (DE1), Geodirt\_27 (DE1), Gezellig\_26 (DC1), Gustavo\_29 (DE1), Halo3\_27 (DC1), Hans\_30 (DE2), Inspectinfecti\_29 (DE2), Jabberwocky\_28 (DE1), Jambalaya\_26 (DC1), JohnPork\_26 (DC1), Kamashten\_29 (DE1), Keitabear\_30 (DE1), Kewpiedoll\_29 (DE1), KimmyK\_28 (DC1), Kroos\_30 (DE1), Kwekel\_27 (DE3), Kwobi\_31 (DE1), Lennon\_30 (DE1), LeoJr\_87 (FC), Leonard\_28 (DE2), LilHam\_27 (DE1), Love\_33 (DE1), Mareelih\_94 (DS), McCrothy\_30 (DE1), McKinley\_32 (DE1), MelBins\_29 (DE2), MoontowerMania\_29 (DE1), Mutzi\_28 (DC1), Natkenzie\_30 (DE4), Nordenberg\_24 (DE1), Nubi\_26 (DC1), Panchaali\_80 (FC), Paries\_32 (DE1), Phauci\_21 (DE2), Phinally\_28 (DE2), Phlop\_26 (DC1), PinkCoffee\_28 (DC1), Portcullis\_26 (DC1), PullumCavea\_26 (DC1), Pumpkiney\_31 (DE4), ReginaGlobina\_87 (FC), RiverRaider\_30 (DE1), RoadKill\_25 (DE3), Rockabye\_89 (FC), Rofo\_30 (DE1), RogerDodger\_29 (DC1), SJReid\_90 (FC), Salvador\_26 (DC1), Sampson\_30 (DE4), Sanjuju\_28 (DE1), Saronaya\_29 (DE1), Savbucketdawg\_26 (DC1), SchottB\_28 (DE1), Scioto\_30 (DE4), Sedona\_30 (DE1), Sendy\_27 (DC1), SharkTale\_26 (DC1), Shinji\_26 (DC1), Shivanishola\_31 (DE1), Sitar\_30 (DE1), Sixama\_94 (DS), Sixsevenium\_27 (DC1), SmokingBunny\_26 (DC1), Stichling\_27 (DE1), StorminNorm\_29 (DE1), Stultus\_28 (DE1), Tangent\_30 (DE1), Tangerine\_29 (DE1), Tardus\_31 (DE4), Thing3\_29 (DE1), Tiamoceli\_28 (DE3), TillyBobJoe\_26 (DC1), Togo\_26 (DC1), Twister6\_28 (DC1), Twonlo\_25 (DE3), Tycho\_29 (DE1), Valary\_29 (DC1), VanDeWege\_29 (DC1), Verity\_29 (DE4), ViaConlectus\_30 (DE4), Vivi2\_32 (DE1), Wizard\_26 (DC1), YungMoney\_28 (DC1), Zipp\_29 (DE4), Zitch\_31

(DE4),

Start 40:

- Found in 3 of 265 ( 1.1% ) of genes in pham
- No Manual Annotations of this start.
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Erasmago\_85 (GD2),

Start 43:

- Found in 26 of 265 ( 9.8% ) of genes in pham
- Manual Annotations of this start: 1 of 229
- Called 19.2% of time when present
- Phage (with cluster) where this start called: Artu\_80 (FC), BooTeria\_84 (FC), KSunshine22\_82 (FC), Stewart25555\_78 (FC), WaddleDee\_75 (FC),

Start 45:

- Found in 3 of 265 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 229
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Tonitrus\_40 (singleton),

Start 46:

- Found in 9 of 265 ( 3.4% ) of genes in pham
- Manual Annotations of this start: 8 of 229
- Called 88.9% of time when present
- Phage (with cluster) where this start called: Abt2graduatex2\_20 (BG), Asis\_19 (BG), BabyGotBac\_19 (BG), BayC\_19 (BG), Maih\_19 (BG), RainyPolka\_20 (BG), Salete\_19 (BG), TP1604\_19 (BG),

Start 47:

- Found in 4 of 265 ( 1.5% ) of genes in pham
- Manual Annotations of this start: 4 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mischief19\_27 (BG), TurkishDelight\_25 (singleton), Xkcd426\_25 (BG), YDN12\_20 (BG),

Start 49:

- Found in 2 of 265 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 2 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: KimJongPhill\_18 (BR), Zuko\_15 (BR),

Start 68:

- Found in 96 of 265 ( 36.2% ) of genes in pham
- No Manual Annotations of this start.
- Called 1.0% of time when present
- Phage (with cluster) where this start called: Emmetator\_80 (FC),

### Summary by clusters:

There are 24 clusters represented in this pham: GD1, GD2, BG, GD4, DK, singleton, FC, B12, BR, GD3, DR, DS, AD, W, DC2, DC1, DE1, DE2, DE3, DE4, DE5, B5, B3, B9,

Info for manual annotations of cluster AD:

- Start number 31 was manually annotated 4 times for cluster AD.

Info for manual annotations of cluster B12:

- Start number 31 was manually annotated 1 time for cluster B12.

Info for manual annotations of cluster B3:

- Start number 33 was manually annotated 49 times for cluster B3.

Info for manual annotations of cluster B5:

- Start number 31 was manually annotated 7 times for cluster B5.

Info for manual annotations of cluster B9:

- Start number 31 was manually annotated 2 times for cluster B9.

Info for manual annotations of cluster BG:

- Start number 46 was manually annotated 8 times for cluster BG.
- Start number 47 was manually annotated 3 times for cluster BG.

Info for manual annotations of cluster BR:

- Start number 49 was manually annotated 2 times for cluster BR.

Info for manual annotations of cluster DC1:

- Start number 38 was manually annotated 32 times for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 38 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DE1:

- Start number 32 was manually annotated 8 times for cluster DE1.
- Start number 38 was manually annotated 45 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 38 was manually annotated 9 times for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 38 was manually annotated 7 times for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 38 was manually annotated 13 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 37 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DK:

- Start number 25 was manually annotated 2 times for cluster DK.

Info for manual annotations of cluster DR:

- Start number 31 was manually annotated 1 time for cluster DR.

Info for manual annotations of cluster DS:

- Start number 38 was manually annotated 5 times for cluster DS.

Info for manual annotations of cluster FC:

- Start number 37 was manually annotated 6 times for cluster FC.
- Start number 38 was manually annotated 4 times for cluster FC.
- Start number 43 was manually annotated 1 time for cluster FC.

Info for manual annotations of cluster GD1:

- Start number 26 was manually annotated 3 times for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 27 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 28 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

- Start number 24 was manually annotated 1 time for cluster GD4.

Info for manual annotations of cluster W:

- Start number 33 was manually annotated 8 times for cluster W.

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

Gene: A3Wally\_94 Start: 50689, Stop: 51099, Start Num: 26

Candidate Starts for A3Wally\_94:

(Start: 26 @50689 has 3 MA's), (52, 50776), (54, 50779), (63, 50809), (123, 51019), (129, 51037),

Gene: APunk\_31 Start: 22352, Stop: 22783, Start Num: 38

Candidate Starts for APunk\_31:

(20, 22292), (Start: 27 @22325 has 2 MA's), (Start: 38 @22352 has 116 MA's), (70, 22481), (83, 22511), (112, 22613), (114, 22619), (118, 22634), (132, 22691), (136, 22706), (147, 22754), (148, 22757),

Gene: Abblin\_30 Start: 22964, Stop: 23395, Start Num: 38

Candidate Starts for Abblin\_30:

(20, 22904), (Start: 27 @22937 has 2 MA's), (Start: 38 @22964 has 116 MA's), (70, 23093), (83, 23123), (112, 23225), (114, 23231), (118, 23246), (132, 23303), (136, 23318), (147, 23366), (148, 23369),

Gene: Abinghost\_26 Start: 19363, Stop: 19776, Start Num: 33

Candidate Starts for Abinghost\_26:

(Start: 33 @19363 has 57 MA's), (56, 19438), (67, 19483), (68, 19489), (103, 19621), (139, 19747),

Gene: Abt2graduatex2\_20 Start: 19744, Stop: 20124, Start Num: 46

Candidate Starts for Abt2graduatex2\_20:

(Start: 46 @19744 has 8 MA's), (52, 19759), (65, 19801), (72, 19846), (102, 19936), (111, 19966), (126, 20017), (131, 20032), (134, 20059), (136, 20062),

Gene: Acadian\_25 Start: 19389, Stop: 19805, Start Num: 31

Candidate Starts for Acadian\_25:

(Start: 31 @19389 has 15 MA's), (48, 19449), (68, 19518), (101, 19623), (106, 19653), (145, 19800),

Gene: Affeca\_28 Start: 22852, Stop: 23286, Start Num: 38

Candidate Starts for Affeca\_28:

(23, 22822), (Start: 38 @22852 has 116 MA's), (63, 22936), (83, 23011), (92, 23035), (112, 23113), (118, 23134), (136, 23206), (148, 23257),

Gene: Ailee\_28 Start: 23561, Stop: 23995, Start Num: 38

Candidate Starts for Ailee\_28:

(Start: 38 @23561 has 116 MA's), (63, 23645), (83, 23720), (92, 23744), (112, 23822), (118, 23843), (136, 23915), (148, 23966),

Gene: Akoma\_26 Start: 19364, Stop: 19777, Start Num: 33

Candidate Starts for Akoma\_26:

(Start: 33 @19364 has 57 MA's), (67, 19484), (68, 19490), (82, 19538), (103, 19622), (139, 19748),

Gene: Ali17\_26 Start: 20746, Stop: 21177, Start Num: 38

Candidate Starts for Ali17\_26:

(3, 20518), (6, 20554), (19, 20659), (Start: 27 @20719 has 2 MA's), (Start: 38 @20746 has 116 MA's), (63, 20830), (91, 20926), (112, 21007), (114, 21013), (117, 21025), (132, 21085), (140, 21109), (147, 21148), (148, 21151),

Gene: Angelicage\_28 Start: 23269, Stop: 23703, Start Num: 38

Candidate Starts for Angelicage\_28:

(23, 23239), (Start: 38 @23269 has 116 MA's), (63, 23353), (83, 23428), (92, 23452), (112, 23530), (118, 23551), (136, 23623), (148, 23674),

Gene: Argie\_20 Start: 18470, Stop: 18880, Start Num: 33

Candidate Starts for Argie\_20:

(Start: 33 @18470 has 57 MA's), (57, 18545), (67, 18590), (68, 18596), (79, 18638), (89, 18662), (95, 18683), (121, 18785), (133, 18830),

Gene: Arri\_29 Start: 18253, Stop: 18696, Start Num: 38

Candidate Starts for Arri\_29:

(Start: 38 @18253 has 116 MA's), (112, 18514), (148, 18670),

Gene: Artu\_80 Start: 49418, Stop: 49762, Start Num: 43

Candidate Starts for Artu\_80:

(Start: 38 @49382 has 116 MA's), (Start: 43 @49418 has 1 MA's), (68, 49505), (88, 49568), (97, 49595), (99, 49604), (127, 49700),

Gene: Ashertheman\_30 Start: 22146, Stop: 22580, Start Num: 38

Candidate Starts for Ashertheman\_30:

(Start: 33 @22137 has 57 MA's), (Start: 38 @22146 has 116 MA's), (63, 22230), (83, 22305), (112, 22407), (118, 22428), (132, 22485), (136, 22500), (148, 22551),

Gene: Asis\_19 Start: 19235, Stop: 19615, Start Num: 46

Candidate Starts for Asis\_19:

(1, 18785), (14, 19067), (Start: 46 @19235 has 8 MA's), (52, 19250), (65, 19292), (72, 19337), (102, 19427), (111, 19457), (126, 19508), (131, 19523), (134, 19550), (136, 19553),

Gene: Athena\_27 Start: 20126, Stop: 20539, Start Num: 33

Candidate Starts for Athena\_27:

(Start: 33 @20126 has 57 MA's), (56, 20201), (67, 20246), (68, 20252), (103, 20384), (139, 20510),

Gene: Atuin\_82 Start: 52030, Stop: 52410, Start Num: 38

Candidate Starts for Atuin\_82:

(Start: 38 @52030 has 116 MA's), (41, 52039), (Start: 43 @52066 has 1 MA's), (84, 52207), (99, 52252), (110, 52285), (127, 52348),

Gene: Audrey\_26 Start: 19363, Stop: 19776, Start Num: 33

Candidate Starts for Audrey\_26:

(Start: 33 @19363 has 57 MA's), (67, 19483), (68, 19489), (82, 19537), (103, 19621), (139, 19747),

Gene: BabyGotBac\_19 Start: 19235, Stop: 19615, Start Num: 46

Candidate Starts for BabyGotBac\_19:

(1, 18785), (14, 19067), (Start: 46 @19235 has 8 MA's), (52, 19250), (65, 19292), (72, 19337), (102, 19427), (111, 19457), (126, 19508), (131, 19523), (134, 19550), (136, 19553),

Gene: Baddon\_29 Start: 22946, Stop: 23380, Start Num: 32

Candidate Starts for Baddon\_29:

(Start: 32 @22946 has 8 MA's), (53, 23000), (63, 23030), (83, 23105), (112, 23207), (118, 23228), (136, 23300), (148, 23351),

Gene: Bae\_24 Start: 19145, Stop: 19561, Start Num: 31

Candidate Starts for Bae\_24:

(Start: 31 @19145 has 15 MA's), (66, 19262), (68, 19274), (89, 19337), (139, 19526), (145, 19556),

Gene: Bakery\_27 Start: 17507, Stop: 17950, Start Num: 38

Candidate Starts for Bakery\_27:

(Start: 38 @17507 has 116 MA's), (148, 17924),

Gene: Baloo\_26 Start: 19363, Stop: 19776, Start Num: 33

Candidate Starts for Baloo\_26:

(Start: 33 @19363 has 57 MA's), (67, 19483), (68, 19489), (82, 19537), (103, 19621), (139, 19747),

Gene: Barb\_28 Start: 18286, Stop: 18729, Start Num: 38

Candidate Starts for Barb\_28:

(Start: 38 @18286 has 116 MA's), (112, 18547), (148, 18703),

Gene: Barsten\_30 Start: 22693, Stop: 23127, Start Num: 38

Candidate Starts for Barsten\_30:

(23, 22663), (Start: 38 @22693 has 116 MA's), (63, 22777), (83, 22852), (92, 22876), (112, 22954), (118, 22975), (136, 23047), (148, 23098),

Gene: Baumdotcom\_29 Start: 21761, Stop: 22195, Start Num: 38

Candidate Starts for Baumdotcom\_29:

(Start: 33 @21752 has 57 MA's), (Start: 38 @21761 has 116 MA's), (63, 21845), (83, 21920), (112, 22022), (118, 22043), (132, 22100), (136, 22115), (148, 22166),

Gene: BayC\_19 Start: 19235, Stop: 19615, Start Num: 46

Candidate Starts for BayC\_19:

(1, 18785), (14, 19067), (Start: 46 @19235 has 8 MA's), (52, 19250), (65, 19292), (72, 19337), (102, 19427), (111, 19457), (126, 19508), (131, 19523), (134, 19550), (136, 19553),

Gene: Belphegor\_28 Start: 22298, Stop: 22729, Start Num: 38

Candidate Starts for Belphegor\_28:

(22, 22247), (Start: 27 @22271 has 2 MA's), (Start: 38 @22298 has 116 MA's), (63, 22382), (91, 22478), (112, 22559), (114, 22565), (117, 22577), (132, 22637), (136, 22652), (140, 22661), (142, 22679), (147, 22700), (148, 22703),

Gene: Ben11\_25 Start: 19185, Stop: 19598, Start Num: 33

Candidate Starts for Ben11\_25:

(Start: 33 @19185 has 57 MA's), (67, 19305), (68, 19311), (82, 19359), (103, 19443), (139, 19569),

Gene: Bernardo\_26 Start: 19363, Stop: 19776, Start Num: 33

Candidate Starts for Bernardo\_26:

(Start: 33 @19363 has 57 MA's), (67, 19483), (68, 19489), (82, 19537), (103, 19621), (139, 19747),

Gene: Bibwit\_29 Start: 22880, Stop: 23314, Start Num: 38

Candidate Starts for Bibwit\_29:

(Start: 38 @22880 has 116 MA's), (63, 22964), (83, 23039), (92, 23063), (112, 23141), (118, 23162), (132, 23219), (136, 23234), (148, 23285),

Gene: Big4\_83 Start: 49711, Stop: 50121, Start Num: 27

Candidate Starts for Big4\_83:

(9, 49555), (13, 49585), (Start: 27 @49711 has 2 MA's), (Start: 43 @49771 has 1 MA's), (54, 49798), (57, 49807), (77, 49897), (129, 50059),

Gene: BigHunkinEater\_33 Start: 22135, Stop: 22566, Start Num: 38

Candidate Starts for BigHunkinEater\_33:

(Start: 27 @22108 has 2 MA's), (Start: 38 @22135 has 116 MA's), (63, 22219), (70, 22264), (83, 22294), (91, 22315), (112, 22396), (114, 22402), (118, 22417), (132, 22474), (136, 22489), (147, 22537), (148, 22540),

Gene: Bizzy\_30 Start: 22093, Stop: 22527, Start Num: 32

Candidate Starts for Bizzy\_30:

(Start: 32 @22093 has 8 MA's), (53, 22147), (63, 22177), (83, 22252), (112, 22354), (118, 22375), (136, 22447), (148, 22498),

Gene: Bloom\_91 Start: 53421, Stop: 53804, Start Num: 37

Candidate Starts for Bloom\_91:

(Start: 37 @53421 has 7 MA's), (Start: 43 @53460 has 1 MA's), (44, 53463), (70, 53562), (77, 53586), (97, 53637), (99, 53646), (116, 53700), (123, 53727), (125, 53739),

Gene: BlueNGold\_95 Start: 51971, Stop: 52378, Start Num: 38

Candidate Starts for BlueNGold\_95:

(Start: 37 @51968 has 7 MA's), (Start: 38 @51971 has 116 MA's), (Start: 43 @52007 has 1 MA's), (62, 52061), (66, 52082), (97, 52184), (100, 52196), (104, 52238), (108, 52247), (116, 52274), (127, 52316), (133, 52349), (135, 52361), (139, 52370),

Gene: BobBob\_27 Start: 22158, Stop: 22592, Start Num: 38

Candidate Starts for BobBob\_27:

(23, 22128), (Start: 38 @22158 has 116 MA's), (63, 22242), (83, 22317), (92, 22341), (112, 22419), (136, 22512), (148, 22563),

Gene: BooTeria\_84 Start: 49486, Stop: 49830, Start Num: 43

Candidate Starts for BooTeria\_84:

(Start: 38 @49450 has 116 MA's), (Start: 43 @49486 has 1 MA's), (68, 49573), (88, 49636), (97, 49663), (99, 49672), (127, 49768),

Gene: Boopy\_96 Start: 51983, Stop: 52390, Start Num: 38

Candidate Starts for Boopy\_96:

(Start: 37 @51980 has 7 MA's), (Start: 38 @51983 has 116 MA's), (Start: 43 @52019 has 1 MA's), (62, 52073), (66, 52094), (97, 52196), (100, 52208), (104, 52250), (108, 52259), (116, 52286), (127, 52328), (133, 52361), (135, 52373), (139, 52382),

Gene: Brandonk123\_31 Start: 23227, Stop: 23661, Start Num: 38

Candidate Starts for Brandonk123\_31:

(23, 23197), (Start: 38 @23227 has 116 MA's), (63, 23311), (83, 23386), (92, 23410), (112, 23488), (136, 23581), (148, 23632),

Gene: Brawn1\_26 Start: 22044, Stop: 22478, Start Num: 38

Candidate Starts for Brawn1\_26:

(23, 22014), (Start: 38 @22044 has 116 MA's), (63, 22128), (83, 22203), (92, 22227), (112, 22305), (118, 22326), (136, 22398), (148, 22449),

Gene: Briakila\_26 Start: 20128, Stop: 20541, Start Num: 33

Candidate Starts for Briakila\_26:

(Start: 33 @20128 has 57 MA's), (67, 20248), (68, 20254), (82, 20302), (103, 20386), (139, 20512),

Gene: Casbah\_25 Start: 19215, Stop: 19628, Start Num: 33

Candidate Starts for Casbah\_25:

(Start: 33 @19215 has 57 MA's), (56, 19290), (67, 19335), (68, 19341), (103, 19473), (139, 19599),

Gene: Cece\_77 Start: 45674, Stop: 46081, Start Num: 28

Candidate Starts for Cece\_77:

(Start: 28 @45674 has 1 MA's), (42, 45725), (59, 45779), (67, 45815), (71, 45839), (77, 45860), (80, 45866), (116, 45974), (123, 46001), (129, 46019),

Gene: Cepens\_19 Start: 18194, Stop: 18604, Start Num: 33

Candidate Starts for Cepens\_19:

(Start: 33 @18194 has 57 MA's), (57, 18269), (67, 18314), (68, 18320), (79, 18362), (89, 18386), (95, 18407), (121, 18509), (133, 18554),

Gene: ChaChing\_26 Start: 19378, Stop: 19791, Start Num: 33

Candidate Starts for ChaChing\_26:

(Start: 33 @19378 has 57 MA's), (56, 19453), (67, 19498), (68, 19504), (103, 19636), (139, 19762),

Gene: ChadMasterC\_30 Start: 23885, Stop: 24319, Start Num: 38

Candidate Starts for ChadMasterC\_30:

(23, 23855), (Start: 38 @23885 has 116 MA's), (63, 23969), (83, 24044), (92, 24068), (112, 24146), (118, 24167), (136, 24239), (148, 24290),

Gene: Chalmers\_26 Start: 20169, Stop: 20582, Start Num: 33

Candidate Starts for Chalmers\_26:

(Start: 33 @20169 has 57 MA's), (67, 20289), (68, 20295), (82, 20343), (103, 20427), (139, 20553),

Gene: Chandler\_26 Start: 20137, Stop: 20550, Start Num: 33

Candidate Starts for Chandler\_26:

(Start: 33 @20137 has 57 MA's), (56, 20212), (67, 20257), (68, 20263), (103, 20395), (139, 20521),

Gene: Charming\_30 Start: 22736, Stop: 23170, Start Num: 38

Candidate Starts for Charming\_30:

(23, 22706), (Start: 38 @22736 has 116 MA's), (63, 22820), (83, 22895), (92, 22919), (112, 22997), (118, 23018), (136, 23090), (148, 23141),

Gene: Chentzyk\_25 Start: 19233, Stop: 19646, Start Num: 33

Candidate Starts for Chentzyk\_25:

(Start: 33 @19233 has 57 MA's), (67, 19353), (68, 19359), (82, 19407), (103, 19491), (139, 19617),

Gene: CherryCola\_29 Start: 18503, Stop: 18946, Start Num: 38

Candidate Starts for CherryCola\_29:

(Start: 38 @18503 has 116 MA's), (112, 18764), (148, 18920),

Gene: Chickadee\_27 Start: 19601, Stop: 20032, Start Num: 38

Candidate Starts for Chickadee\_27:

(12, 19433), (Start: 38 @19601 has 116 MA's), (63, 19685), (83, 19760), (117, 19880), (123, 19895), (136, 19955), (140, 19964), (147, 20003), (148, 20006),

Gene: Chilliams\_84 Start: 55298, Stop: 55687, Start Num: 38

Candidate Starts for Chilliams\_84:

(Start: 38 @55298 has 116 MA's), (62, 55388), (70, 55436), (99, 55520), (116, 55574), (123, 55601), (125, 55613), (135, 55661),

Gene: ClamChowder\_28 Start: 18286, Stop: 18729, Start Num: 38

Candidate Starts for ClamChowder\_28:

(Start: 38 @18286 has 116 MA's), (112, 18547), (148, 18703),

Gene: Clown\_30 Start: 20227, Stop: 20670, Start Num: 38

Candidate Starts for Clown\_30:

(17, 20125), (18, 20134), (Start: 38 @20227 has 116 MA's), (59, 20299), (148, 20644),

Gene: Coldpizza\_25 Start: 21451, Stop: 21861, Start Num: 31

Candidate Starts for Coldpizza\_25:

(Start: 31 @21451 has 15 MA's), (Start: 45 @21505 has 1 MA's), (Start: 46 @21508 has 8 MA's), (57, 21532), (68, 21583), (94, 21661),

Gene: Compostia\_27 Start: 19796, Stop: 20209, Start Num: 33

Candidate Starts for Compostia\_27:

(Start: 33 @19796 has 57 MA's), (56, 19871), (67, 19916), (68, 19922), (103, 20054), (139, 20180),

Gene: Corofin\_26 Start: 19388, Stop: 19801, Start Num: 33

Candidate Starts for Corofin\_26:

(Start: 33 @19388 has 57 MA's), (56, 19463), (67, 19508), (68, 19514), (103, 19646), (139, 19772),

Gene: CoveyB\_28 Start: 18086, Stop: 18529, Start Num: 38

Candidate Starts for CoveyB\_28:

(Start: 38 @18086 has 116 MA's), (112, 18347), (148, 18503),

Gene: D12\_19 Start: 18187, Stop: 18597, Start Num: 33

Candidate Starts for D12\_19:

(Start: 33 @18187 has 57 MA's), (57, 18262), (67, 18307), (68, 18313), (79, 18355), (89, 18379), (95, 18400), (121, 18502), (133, 18547),

Gene: Daisy\_26 Start: 19384, Stop: 19797, Start Num: 33

Candidate Starts for Daisy\_26:

(Start: 33 @19384 has 57 MA's), (67, 19504), (68, 19510), (103, 19642), (139, 19768),

Gene: Danyall\_28 Start: 18086, Stop: 18529, Start Num: 38

Candidate Starts for Danyall\_28:

(Start: 38 @18086 has 116 MA's), (112, 18347), (148, 18503),

Gene: Deenasa\_26 Start: 20126, Stop: 20539, Start Num: 33

Candidate Starts for Deenasa\_26:

(Start: 33 @20126 has 57 MA's), (56, 20201), (67, 20246), (68, 20252), (103, 20384), (139, 20510),

Gene: Delrey21\_29 Start: 23097, Stop: 23528, Start Num: 38

Candidate Starts for Delrey21\_29:

(Start: 27 @23070 has 2 MA's), (Start: 38 @23097 has 116 MA's), (63, 23181), (68, 23211), (70, 23226), (83, 23256), (91, 23277), (112, 23358), (114, 23364), (123, 23391), (132, 23436), (136, 23451), (147, 23499), (148, 23502),

Gene: Derg\_25 Start: 21689, Stop: 22123, Start Num: 32

Candidate Starts for Derg\_25:

(Start: 32 @21689 has 8 MA's), (53, 21743), (63, 21773), (83, 21848), (112, 21950), (118, 21971), (136, 22043), (148, 22094),

Gene: Devonte\_26 Start: 19363, Stop: 19776, Start Num: 33

Candidate Starts for Devonte\_26:

(Start: 33 @19363 has 57 MA's), (56, 19438), (67, 19483), (68, 19489), (103, 19621), (139, 19747),

Gene: Dextert\_28 Start: 20032, Stop: 20463, Start Num: 38

Candidate Starts for Dextert\_28:

(Start: 38 @20032 has 116 MA's), (63, 20116), (83, 20191), (91, 20212), (117, 20311), (123, 20326), (136, 20386), (147, 20434), (148, 20437), (150, 20446),

Gene: DigitDog\_25 Start: 18981, Stop: 19397, Start Num: 31

Candidate Starts for DigitDog\_25:

(Start: 31 @18981 has 15 MA's), (89, 19173), (101, 19215), (115, 19266), (145, 19392),

Gene: DoctorFroggo\_29 Start: 23097, Stop: 23528, Start Num: 38

Candidate Starts for DoctorFroggo\_29:

(Start: 27 @23070 has 2 MA's), (Start: 38 @23097 has 116 MA's), (63, 23181), (68, 23211), (70, 23226), (83, 23256), (91, 23277), (112, 23358), (114, 23364), (123, 23391), (132, 23436), (136, 23451), (147, 23499), (148, 23502),

Gene: Dodo\_96 Start: 51011, Stop: 51421, Start Num: 26

Candidate Starts for Dodo\_96:

(Start: 26 @51011 has 3 MA's), (52, 51098), (54, 51101), (63, 51131), (123, 51341), (129, 51359),

Gene: Donny\_25 Start: 19394, Stop: 19810, Start Num: 31

Candidate Starts for Donny\_25:

(Start: 31 @19394 has 15 MA's), (48, 19454), (68, 19523), (101, 19628), (106, 19658), (145, 19805),

Gene: Dori\_22 Start: 16225, Stop: 16629, Start Num: 31

Candidate Starts for Dori\_22:

(Start: 31 @16225 has 15 MA's), (57, 16303), (67, 16348), (68, 16354), (81, 16399), (89, 16420), (101, 16462), (103, 16486), (115, 16513), (119, 16525), (137, 16603),

Gene: DunneganBoMo\_77 Start: 48875, Stop: 49255, Start Num: 38  
Candidate Starts for DunneganBoMo\_77:  
(Start: 38 @48875 has 116 MA's), (Start: 43 @48911 has 1 MA's), (68, 48998), (88, 49061), (97, 49088), (99, 49097), (127, 49193),

Gene: EMoore\_26 Start: 21587, Stop: 22018, Start Num: 38  
Candidate Starts for EMoore\_26:  
(22, 21536), (Start: 27 @21560 has 2 MA's), (29, 21563), (Start: 38 @21587 has 116 MA's), (63, 21671), (70, 21716), (112, 21848), (132, 21926), (140, 21950), (147, 21989), (148, 21992),

Gene: EastView9101\_24 Start: 19041, Stop: 19457, Start Num: 31  
Candidate Starts for EastView9101\_24:  
(Start: 31 @19041 has 15 MA's), (68, 19170), (89, 19233), (145, 19452),

Gene: EdmundFerry\_26 Start: 19630, Stop: 20061, Start Num: 38  
Candidate Starts for EdmundFerry\_26:  
(12, 19462), (Start: 38 @19630 has 116 MA's), (63, 19714), (83, 19789), (117, 19909), (123, 19924), (136, 19984), (140, 19993), (147, 20032), (148, 20035),

Gene: Egi03\_26 Start: 17805, Stop: 18248, Start Num: 38  
Candidate Starts for Egi03\_26:  
(4, 17589), (8, 17631), (Start: 38 @17805 has 116 MA's), (112, 18066), (148, 18222),

Gene: Emmetator\_80 Start: 49745, Stop: 50002, Start Num: 68  
Candidate Starts for Emmetator\_80:  
(Start: 38 @49622 has 116 MA's), (Start: 43 @49658 has 1 MA's), (62, 49712), (68, 49745), (88, 49808), (97, 49835), (99, 49844), (127, 49940),

Gene: Erasmago\_85 Start: 47346, Stop: 47723, Start Num: 40  
Candidate Starts for Erasmago\_85:  
(Start: 27 @47316 has 2 MA's), (40, 47346), (57, 47412), (62, 47430), (123, 47643), (129, 47661),

Gene: Evamon\_26 Start: 17572, Stop: 18015, Start Num: 38  
Candidate Starts for Evamon\_26:  
(Start: 38 @17572 has 116 MA's), (112, 17833), (148, 17989),

Gene: Fireball\_27 Start: 17704, Stop: 18147, Start Num: 38  
Candidate Starts for Fireball\_27:  
(Start: 38 @17704 has 116 MA's), (112, 17965), (148, 18121),

Gene: Fitzgerald\_28 Start: 23319, Stop: 23753, Start Num: 38  
Candidate Starts for Fitzgerald\_28:  
(23, 23289), (Start: 38 @23319 has 116 MA's), (63, 23403), (83, 23478), (112, 23580), (118, 23601), (136, 23673), (148, 23724),

Gene: Flatwoods\_30 Start: 22050, Stop: 22484, Start Num: 32  
Candidate Starts for Flatwoods\_30:  
(Start: 32 @22050 has 8 MA's), (53, 22104), (63, 22134), (83, 22209), (112, 22311), (118, 22332), (136, 22404), (148, 22455),

Gene: FloraSnap32\_87 Start: 52458, Stop: 52841, Start Num: 37  
Candidate Starts for FloraSnap32\_87:

(Start: 37 @52458 has 7 MA's), (Start: 43 @52497 has 1 MA's), (44, 52500), (70, 52599), (77, 52623), (86, 52644), (97, 52674), (99, 52683), (116, 52737), (123, 52764), (125, 52776),

Gene: Forza\_96 Start: 51899, Stop: 52306, Start Num: 38

Candidate Starts for Forza\_96:

(Start: 37 @51896 has 7 MA's), (Start: 38 @51899 has 116 MA's), (Start: 43 @51935 has 1 MA's), (62, 51989), (66, 52010), (97, 52112), (100, 52124), (104, 52166), (108, 52175), (116, 52202), (127, 52244), (133, 52277), (135, 52289), (139, 52298),

Gene: Fosterous\_28 Start: 23152, Stop: 23586, Start Num: 38

Candidate Starts for Fosterous\_28:

(23, 23122), (Start: 38 @23152 has 116 MA's), (63, 23236), (83, 23311), (92, 23335), (112, 23413), (136, 23506), (148, 23557),

Gene: FuegoCuervo\_32 Start: 21703, Stop: 22137, Start Num: 38

Candidate Starts for FuegoCuervo\_32:

(23, 21664), (Start: 38 @21703 has 116 MA's), (63, 21787), (83, 21862), (112, 21964), (118, 21985), (136, 22057), (148, 22108),

Gene: Fugax\_28 Start: 18286, Stop: 18729, Start Num: 38

Candidate Starts for Fugax\_28:

(Start: 38 @18286 has 116 MA's), (112, 18547), (148, 18703),

Gene: Funsized\_28 Start: 21759, Stop: 22175, Start Num: 31

Candidate Starts for Funsized\_28:

(Start: 31 @21759 has 15 MA's), (67, 21882), (68, 21888), (76, 21924), (101, 21993), (115, 22044), (123, 22071), (127, 22086), (144, 22167),

Gene: GMA2\_25 Start: 22256, Stop: 22675, Start Num: 34

Candidate Starts for GMA2\_25:

(34, 22256), (Start: 38 @22268 has 116 MA's), (51, 22325), (73, 22424), (97, 22481), (104, 22535), (108, 22544), (123, 22595), (135, 22655),

Gene: GTE6\_27 Start: 20119, Stop: 20550, Start Num: 38

Candidate Starts for GTE6\_27:

(12, 19951), (Start: 38 @20119 has 116 MA's), (63, 20203), (83, 20278), (117, 20398), (123, 20413), (140, 20482), (147, 20521), (148, 20524),

Gene: Gadget\_27 Start: 19373, Stop: 19786, Start Num: 33

Candidate Starts for Gadget\_27:

(Start: 33 @19373 has 57 MA's), (67, 19493), (68, 19499), (82, 19547), (103, 19631), (139, 19757),

Gene: Gaea\_29 Start: 21701, Stop: 22135, Start Num: 32

Candidate Starts for Gaea\_29:

(Start: 32 @21701 has 8 MA's), (53, 21755), (63, 21785), (83, 21860), (112, 21962), (118, 21983), (136, 22055), (148, 22106),

Gene: Galadriel\_30 Start: 23641, Stop: 24075, Start Num: 38

Candidate Starts for Galadriel\_30:

(23, 23611), (Start: 38 @23641 has 116 MA's), (63, 23725), (83, 23800), (92, 23824), (112, 23902), (136, 23995), (148, 24046),

Gene: Geodirt\_27 Start: 22624, Stop: 23058, Start Num: 38

Candidate Starts for Geodirt\_27:

(23, 22594), (Start: 38 @22624 has 116 MA's), (63, 22708), (83, 22783), (92, 22807), (112, 22885), (136, 22978), (148, 23029),

Gene: Gervas\_26 Start: 19347, Stop: 19760, Start Num: 33

Candidate Starts for Gervas\_26:

(Start: 33 @19347 has 57 MA's), (67, 19467), (68, 19473), (82, 19521), (103, 19605), (139, 19731),

Gene: Gezellig\_26 Start: 17704, Stop: 18147, Start Num: 38

Candidate Starts for Gezellig\_26:

(Start: 38 @17704 has 116 MA's), (112, 17965), (148, 18121),

Gene: GlenHope\_27 Start: 19356, Stop: 19769, Start Num: 33

Candidate Starts for GlenHope\_27:

(Start: 33 @19356 has 57 MA's), (67, 19476), (68, 19482), (82, 19530), (103, 19614), (139, 19740),

Gene: Glubnar\_27 Start: 19368, Stop: 19781, Start Num: 33

Candidate Starts for Glubnar\_27:

(Start: 33 @19368 has 57 MA's), (56, 19443), (67, 19488), (68, 19494), (103, 19626), (139, 19752),

Gene: GodPhather\_20 Start: 18473, Stop: 18883, Start Num: 33

Candidate Starts for GodPhather\_20:

(Start: 33 @18473 has 57 MA's), (57, 18548), (67, 18593), (68, 18599), (79, 18641), (89, 18665), (95, 18686), (121, 18788), (133, 18833),

Gene: GodonK\_84 Start: 43620, Stop: 44033, Start Num: 25

Candidate Starts for GodonK\_84:

(Start: 25 @43620 has 2 MA's), (40, 43653), (64, 43746), (68, 43770), (74, 43803), (87, 43830), (89, 43833), (110, 43905), (116, 43926), (125, 43965), (141, 44025),

Gene: GoldenEssence\_73 Start: 47214, Stop: 47597, Start Num: 37

Candidate Starts for GoldenEssence\_73:

(Start: 37 @47214 has 7 MA's), (Start: 43 @47253 has 1 MA's), (70, 47355), (77, 47379), (86, 47400), (99, 47439), (116, 47493), (123, 47520), (125, 47532),

Gene: Gustavo\_29 Start: 21853, Stop: 22287, Start Num: 38

Candidate Starts for Gustavo\_29:

(Start: 33 @21844 has 57 MA's), (Start: 38 @21853 has 116 MA's), (63, 21937), (83, 22012), (112, 22114), (118, 22135), (132, 22192), (136, 22207), (148, 22258),

Gene: Halfpint\_25 Start: 19188, Stop: 19601, Start Num: 33

Candidate Starts for Halfpint\_25:

(Start: 33 @19188 has 57 MA's), (67, 19308), (68, 19314), (82, 19362), (103, 19446), (139, 19572),

Gene: Halo3\_27 Start: 17997, Stop: 18440, Start Num: 38

Candidate Starts for Halo3\_27:

(Start: 38 @17997 has 116 MA's), (112, 18258), (148, 18414),

Gene: Hans\_30 Start: 21408, Stop: 21839, Start Num: 38

Candidate Starts for Hans\_30:

(6, 21216), (Start: 27 @21381 has 2 MA's), (Start: 38 @21408 has 116 MA's), (63, 21492), (91, 21588), (112, 21669), (114, 21675), (117, 21687), (132, 21747), (140, 21771), (147, 21810), (148, 21813),

Gene: HarveySr\_26 Start: 19343, Stop: 19756, Start Num: 33  
Candidate Starts for HarveySr\_26:  
(Start: 33 @19343 has 57 MA's), (67, 19463), (68, 19469), (103, 19601), (139, 19727),

Gene: Heathcliff\_26 Start: 19325, Stop: 19738, Start Num: 33  
Candidate Starts for Heathcliff\_26:  
(Start: 33 @19325 has 57 MA's), (67, 19445), (68, 19451), (82, 19499), (103, 19583), (139, 19709),

Gene: Inspectinfecti\_29 Start: 21832, Stop: 22263, Start Num: 38  
Candidate Starts for Inspectinfecti\_29:  
(3, 21604), (6, 21640), (Start: 27 @21805 has 2 MA's), (Start: 38 @21832 has 116 MA's), (63, 21916), (91, 22012), (112, 22093), (114, 22099), (117, 22111), (132, 22171), (140, 22195), (147, 22234), (148, 22237),

Gene: JKSyngboy\_27 Start: 22410, Stop: 22844, Start Num: 32  
Candidate Starts for JKSyngboy\_27:  
(Start: 32 @22410 has 8 MA's), (53, 22464), (63, 22494), (68, 22524), (83, 22569), (112, 22671), (118, 22692), (136, 22764), (148, 22815),

Gene: Jabberwocky\_28 Start: 23780, Stop: 24214, Start Num: 38  
Candidate Starts for Jabberwocky\_28:  
(23, 23750), (Start: 38 @23780 has 116 MA's), (63, 23864), (83, 23939), (92, 23963), (112, 24041), (118, 24062), (136, 24134), (148, 24185),

Gene: Jambalaya\_26 Start: 17351, Stop: 17794, Start Num: 38  
Candidate Starts for Jambalaya\_26:  
(Start: 38 @17351 has 116 MA's), (112, 17612), (148, 17768),

Gene: Jeon\_19 Start: 18215, Stop: 18625, Start Num: 33  
Candidate Starts for Jeon\_19:  
(Start: 33 @18215 has 57 MA's), (57, 18290), (67, 18335), (68, 18341), (79, 18383), (89, 18407), (95, 18428), (121, 18530), (133, 18575),

Gene: JohnPork\_26 Start: 17599, Stop: 18042, Start Num: 38  
Candidate Starts for JohnPork\_26:  
(Start: 38 @17599 has 116 MA's), (112, 17860), (148, 18016),

Gene: KSunshine22\_82 Start: 50145, Stop: 50489, Start Num: 43  
Candidate Starts for KSunshine22\_82:  
(Start: 38 @50109 has 116 MA's), (Start: 43 @50145 has 1 MA's), (68, 50232), (88, 50295), (97, 50322), (99, 50331), (127, 50427),

Gene: Kamashten\_29 Start: 23229, Stop: 23663, Start Num: 38  
Candidate Starts for Kamashten\_29:  
(23, 23199), (Start: 38 @23229 has 116 MA's), (63, 23313), (83, 23388), (92, 23412), (112, 23490), (118, 23511), (136, 23583), (148, 23634),

Gene: Kamiyu\_26 Start: 19332, Stop: 19745, Start Num: 33  
Candidate Starts for Kamiyu\_26:  
(Start: 33 @19332 has 57 MA's), (56, 19407), (67, 19452), (68, 19458), (103, 19590), (139, 19716),

Gene: KarasumaRum\_27 Start: 19514, Stop: 19930, Start Num: 31  
Candidate Starts for KarasumaRum\_27:

(Start: 31 @19514 has 15 MA's), (89, 19706), (115, 19799), (145, 19925),

Gene: Keitabear\_30 Start: 24585, Stop: 25019, Start Num: 38

Candidate Starts for Keitabear\_30:

(23, 24555), (Start: 38 @24585 has 116 MA's), (63, 24669), (83, 24744), (92, 24768), (112, 24846), (118, 24867), (136, 24939), (148, 24990),

Gene: Kewpiedoll\_29 Start: 22426, Stop: 22860, Start Num: 38

Candidate Starts for Kewpiedoll\_29:

(23, 22396), (Start: 38 @22426 has 116 MA's), (63, 22510), (83, 22585), (92, 22609), (112, 22687), (118, 22708), (136, 22780), (148, 22831),

Gene: KimJongPhill\_18 Start: 13783, Stop: 14178, Start Num: 49

Candidate Starts for KimJongPhill\_18:

(21, 13690), (Start: 49 @13783 has 2 MA's), (58, 13807), (60, 13813), (69, 13861), (93, 13930), (105, 13990), (119, 14029), (149, 14164), (151, 14173),

Gene: KimmyK\_28 Start: 18286, Stop: 18729, Start Num: 38

Candidate Starts for KimmyK\_28:

(Start: 38 @18286 has 116 MA's), (112, 18547), (148, 18703),

Gene: Kithara\_33 Start: 23575, Stop: 23991, Start Num: 35

Candidate Starts for Kithara\_33:

(Start: 35 @23575 has 1 MA's), (54, 23635), (61, 23656), (128, 23896), (138, 23938),

Gene: Kronus\_25 Start: 19946, Stop: 20359, Start Num: 33

Candidate Starts for Kronus\_25:

(Start: 33 @19946 has 57 MA's), (67, 20066), (68, 20072), (82, 20120), (103, 20204), (139, 20330),

Gene: Kroos\_30 Start: 22606, Stop: 23040, Start Num: 38

Candidate Starts for Kroos\_30:

(Start: 33 @22597 has 57 MA's), (Start: 38 @22606 has 116 MA's), (63, 22690), (83, 22765), (112, 22867), (118, 22888), (132, 22945), (136, 22960), (148, 23011),

Gene: Kwekel\_27 Start: 19551, Stop: 19982, Start Num: 38

Candidate Starts for Kwekel\_27:

(Start: 38 @19551 has 116 MA's), (63, 19635), (83, 19710), (91, 19731), (117, 19830), (123, 19845), (136, 19905), (147, 19953), (148, 19956), (150, 19965),

Gene: Kwobi\_31 Start: 22592, Stop: 23026, Start Num: 38

Candidate Starts for Kwobi\_31:

(Start: 33 @22583 has 57 MA's), (Start: 38 @22592 has 116 MA's), (63, 22676), (83, 22751), (112, 22853), (118, 22874), (132, 22931), (136, 22946), (148, 22997),

Gene: Lennon\_30 Start: 24387, Stop: 24821, Start Num: 38

Candidate Starts for Lennon\_30:

(23, 24357), (Start: 38 @24387 has 116 MA's), (63, 24471), (83, 24546), (112, 24648), (118, 24669), (136, 24741), (148, 24792),

Gene: LeoJr\_87 Start: 52158, Stop: 52538, Start Num: 38

Candidate Starts for LeoJr\_87:

(Start: 38 @52158 has 116 MA's), (41, 52167), (Start: 43 @52194 has 1 MA's), (84, 52335), (99, 52380), (110, 52413), (127, 52476),

Gene: Leonard\_28 Start: 21406, Stop: 21837, Start Num: 38

Candidate Starts for Leonard\_28:

(3, 21178), (6, 21214), (Start: 27 @21379 has 2 MA's), (29, 21382), (Start: 38 @21406 has 116 MA's), (63, 21490), (91, 21586), (112, 21667), (114, 21673), (117, 21685), (132, 21745), (140, 21769), (147, 21808), (148, 21811),

Gene: LestyG\_26 Start: 19367, Stop: 19780, Start Num: 33

Candidate Starts for LestyG\_26:

(Start: 33 @19367 has 57 MA's), (56, 19442), (67, 19487), (68, 19493), (103, 19625), (139, 19751),

Gene: LilHam\_27 Start: 21186, Stop: 21620, Start Num: 38

Candidate Starts for LilHam\_27:

(Start: 33 @21177 has 57 MA's), (Start: 38 @21186 has 116 MA's), (63, 21270), (83, 21345), (112, 21447), (118, 21468), (132, 21525), (136, 21540), (148, 21591),

Gene: LilMcDreamy\_22 Start: 19306, Stop: 19722, Start Num: 31

Candidate Starts for LilMcDreamy\_22:

(Start: 31 @19306 has 15 MA's), (59, 19393), (67, 19429), (68, 19435), (106, 19570), (123, 19618),

Gene: Lilbeanie\_25 Start: 16498, Stop: 16914, Start Num: 37

Candidate Starts for Lilbeanie\_25:

(Start: 37 @16498 has 7 MA's), (63, 16585), (124, 16795), (148, 16888),

Gene: Love\_33 Start: 24151, Stop: 24585, Start Num: 38

Candidate Starts for Love\_33:

(23, 24121), (Start: 38 @24151 has 116 MA's), (63, 24235), (83, 24310), (92, 24334), (112, 24412), (136, 24505), (148, 24556),

Gene: Maih\_19 Start: 19234, Stop: 19614, Start Num: 46

Candidate Starts for Maih\_19:

(1, 18784), (14, 19066), (Start: 46 @19234 has 8 MA's), (52, 19249), (65, 19291), (72, 19336), (102, 19426), (111, 19456), (126, 19507), (131, 19522), (134, 19549), (136, 19552),

Gene: Mao1\_21 Start: 16621, Stop: 17025, Start Num: 31

Candidate Starts for Mao1\_21:

(Start: 31 @16621 has 15 MA's), (57, 16699), (67, 16744), (68, 16750), (81, 16795), (89, 16816), (101, 16858), (103, 16882), (115, 16909), (119, 16921), (137, 16999),

Gene: Mareelih\_94 Start: 51401, Stop: 51808, Start Num: 38

Candidate Starts for Mareelih\_94:

(Start: 37 @51398 has 7 MA's), (Start: 38 @51401 has 116 MA's), (Start: 43 @51437 has 1 MA's), (62, 51491), (66, 51512), (97, 51614), (100, 51626), (104, 51668), (108, 51677), (116, 51704), (127, 51746), (133, 51779), (135, 51791), (139, 51800),

Gene: Marley1013\_26 Start: 20148, Stop: 20561, Start Num: 33

Candidate Starts for Marley1013\_26:

(Start: 33 @20148 has 57 MA's), (67, 20268), (68, 20274), (82, 20322), (103, 20406), (139, 20532),

Gene: Marlia\_26 Start: 19347, Stop: 19760, Start Num: 33

Candidate Starts for Marlia\_26:

(Start: 33 @19347 has 57 MA's), (56, 19422), (67, 19467), (68, 19473), (82, 19521), (103, 19605), (139, 19731),

Gene: Mask\_22 Start: 16622, Stop: 17026, Start Num: 31

Candidate Starts for Mask\_22:

(Start: 31 @16622 has 15 MA's), (57, 16700), (67, 16745), (68, 16751), (81, 16796), (89, 16817), (101, 16859), (103, 16883), (115, 16910), (119, 16922), (137, 17000),

Gene: McCrothy\_30 Start: 23959, Stop: 24393, Start Num: 38

Candidate Starts for McCrothy\_30:

(23, 23920), (Start: 38 @23959 has 116 MA's), (63, 24043), (112, 24220), (118, 24241), (136, 24313), (148, 24364),

Gene: McKinley\_32 Start: 24183, Stop: 24617, Start Num: 38

Candidate Starts for McKinley\_32:

(23, 24153), (Start: 38 @24183 has 116 MA's), (63, 24267), (83, 24342), (92, 24366), (112, 24444), (136, 24537), (148, 24588),

Gene: Megabear\_19 Start: 18137, Stop: 18547, Start Num: 33

Candidate Starts for Megabear\_19:

(Start: 33 @18137 has 57 MA's), (57, 18212), (67, 18257), (68, 18263), (79, 18305), (89, 18329), (95, 18350), (121, 18452), (133, 18497),

Gene: MelBins\_29 Start: 21614, Stop: 22045, Start Num: 38

Candidate Starts for MelBins\_29:

(6, 21422), (Start: 27 @21587 has 2 MA's), (Start: 38 @21614 has 116 MA's), (63, 21698), (91, 21794), (112, 21875), (114, 21881), (117, 21893), (132, 21953), (140, 21977), (147, 22016), (148, 22019),

Gene: Mimi\_87 Start: 52768, Stop: 53151, Start Num: 37

Candidate Starts for Mimi\_87:

(Start: 37 @52768 has 7 MA's), (Start: 43 @52807 has 1 MA's), (44, 52810), (70, 52909), (77, 52933), (97, 52984), (99, 52993), (116, 53047), (123, 53074), (125, 53086),

Gene: Mischief19\_27 Start: 29157, Stop: 29531, Start Num: 47

Candidate Starts for Mischief19\_27:

(Start: 47 @29157 has 4 MA's), (72, 29256), (96, 29316), (102, 29346), (109, 29370),

Gene: MmasiCarm\_26 Start: 19358, Stop: 19771, Start Num: 33

Candidate Starts for MmasiCarm\_26:

(Start: 33 @19358 has 57 MA's), (67, 19478), (68, 19484), (82, 19532), (103, 19616), (139, 19742),

Gene: MoontowerMania\_29 Start: 22994, Stop: 23428, Start Num: 38

Candidate Starts for MoontowerMania\_29:

(11, 22829), (23, 22964), (Start: 38 @22994 has 116 MA's), (63, 23078), (83, 23153), (112, 23255), (118, 23276), (136, 23348), (148, 23399),

Gene: Mortcellus\_25 Start: 20001, Stop: 20414, Start Num: 33

Candidate Starts for Mortcellus\_25:

(Start: 33 @20001 has 57 MA's), (67, 20121), (68, 20127), (82, 20175), (103, 20259), (139, 20385),

Gene: Morty007\_26 Start: 20148, Stop: 20561, Start Num: 33

Candidate Starts for Morty007\_26:

(Start: 33 @20148 has 57 MA's), (67, 20268), (68, 20274), (82, 20322), (103, 20406), (139, 20532),

Gene: Mulaychimus\_26 Start: 19340, Stop: 19753, Start Num: 33

Candidate Starts for Mulaychimus\_26:

(Start: 33 @19340 has 57 MA's), (67, 19460), (68, 19466), (82, 19514), (103, 19598), (139, 19724),

Gene: Mutzi\_28 Start: 18027, Stop: 18470, Start Num: 38

Candidate Starts for Mutzi\_28:

(2, 17811), (Start: 38 @18027 has 116 MA's), (148, 18444),

Gene: Nangang\_25 Start: 19342, Stop: 19758, Start Num: 31

Candidate Starts for Nangang\_25:

(Start: 31 @19342 has 15 MA's), (89, 19534), (101, 19576), (115, 19627), (145, 19753),

Gene: Natkenzie\_30 Start: 22964, Stop: 23395, Start Num: 38

Candidate Starts for Natkenzie\_30:

(20, 22904), (Start: 27 @22937 has 2 MA's), (Start: 38 @22964 has 116 MA's), (70, 23093), (83, 23123), (112, 23225), (114, 23231), (118, 23246), (132, 23303), (136, 23318), (147, 23366), (148, 23369),

Gene: Neos5\_26 Start: 20155, Stop: 20568, Start Num: 33

Candidate Starts for Neos5\_26:

(Start: 33 @20155 has 57 MA's), (56, 20230), (67, 20275), (68, 20281), (103, 20413), (139, 20539),

Gene: Nordenberg\_24 Start: 22353, Stop: 22787, Start Num: 38

Candidate Starts for Nordenberg\_24:

(23, 22323), (Start: 38 @22353 has 116 MA's), (63, 22437), (83, 22512), (92, 22536), (112, 22614), (136, 22707), (148, 22758),

Gene: Nozo\_26 Start: 20125, Stop: 20538, Start Num: 33

Candidate Starts for Nozo\_26:

(Start: 33 @20125 has 57 MA's), (56, 20200), (67, 20245), (68, 20251), (103, 20383), (139, 20509),

Gene: Nubi\_26 Start: 17592, Stop: 18035, Start Num: 38

Candidate Starts for Nubi\_26:

(Start: 38 @17592 has 116 MA's), (112, 17853), (148, 18009),

Gene: Obutu\_26 Start: 19358, Stop: 19771, Start Num: 33

Candidate Starts for Obutu\_26:

(Start: 33 @19358 has 57 MA's), (56, 19433), (67, 19478), (68, 19484), (103, 19616), (139, 19742),

Gene: Olivio\_25 Start: 19212, Stop: 19625, Start Num: 33

Candidate Starts for Olivio\_25:

(Start: 33 @19212 has 57 MA's), (56, 19287), (67, 19332), (68, 19338), (103, 19470), (139, 19596),

Gene: OrangeOswald\_26 Start: 19363, Stop: 19776, Start Num: 33

Candidate Starts for OrangeOswald\_26:

(Start: 33 @19363 has 57 MA's), (56, 19438), (67, 19483), (68, 19489), (103, 19621), (139, 19747),

Gene: PR\_19 Start: 18164, Stop: 18574, Start Num: 33

Candidate Starts for PR\_19:

(Start: 33 @18164 has 57 MA's), (57, 18239), (67, 18284), (68, 18290), (79, 18332), (89, 18356), (95, 18377), (121, 18479), (133, 18524),

Gene: Panchaali\_80 Start: 49870, Stop: 50250, Start Num: 38

Candidate Starts for Panchaali\_80:

(Start: 38 @49870 has 116 MA's), (41, 49879), (Start: 43 @49906 has 1 MA's), (44, 49909), (90, 50062), (99, 50092), (127, 50188),

Gene: Paries\_32 Start: 23819, Stop: 24253, Start Num: 38

Candidate Starts for Paries\_32:

(23, 23780), (Start: 38 @23819 has 116 MA's), (63, 23903), (83, 23978), (92, 24002), (112, 24080), (118, 24101), (136, 24173), (148, 24224),

Gene: Patbob\_86 Start: 53640, Stop: 54023, Start Num: 37

Candidate Starts for Patbob\_86:

(Start: 37 @53640 has 7 MA's), (Start: 43 @53679 has 1 MA's), (70, 53781), (77, 53805), (86, 53826), (97, 53856), (99, 53865), (116, 53919), (123, 53946), (125, 53958),

Gene: PauloDiaboli\_94 Start: 50046, Stop: 50456, Start Num: 26

Candidate Starts for PauloDiaboli\_94:

(Start: 26 @50046 has 3 MA's), (52, 50133), (54, 50136), (63, 50166), (123, 50376), (129, 50394),

Gene: Phauci\_21 Start: 17995, Stop: 18426, Start Num: 38

Candidate Starts for Phauci\_21:

(6, 17803), (Start: 27 @17968 has 2 MA's), (Start: 38 @17995 has 116 MA's), (63, 18079), (91, 18175), (112, 18256), (114, 18262), (117, 18274), (132, 18334), (140, 18358), (147, 18397), (148, 18400),

Gene: Phayeta\_26 Start: 19239, Stop: 19652, Start Num: 33

Candidate Starts for Phayeta\_26:

(Start: 33 @19239 has 57 MA's), (56, 19314), (67, 19359), (68, 19365), (103, 19497), (139, 19623),

Gene: Phendrix\_82 Start: 43488, Stop: 43901, Start Num: 25

Candidate Starts for Phendrix\_82:

(Start: 25 @43488 has 2 MA's), (40, 43521), (64, 43614), (68, 43638), (74, 43671), (87, 43698), (89, 43701), (110, 43773), (116, 43794), (125, 43833), (141, 43893),

Gene: Philly\_25 Start: 19229, Stop: 19642, Start Num: 33

Candidate Starts for Philly\_25:

(Start: 33 @19229 has 57 MA's), (56, 19304), (67, 19349), (68, 19355), (103, 19487), (139, 19613),

Gene: Phinally\_28 Start: 21403, Stop: 21834, Start Num: 38

Candidate Starts for Phinally\_28:

(3, 21175), (6, 21211), (Start: 27 @21376 has 2 MA's), (29, 21379), (Start: 38 @21403 has 116 MA's), (63, 21487), (91, 21583), (112, 21664), (114, 21670), (117, 21682), (132, 21742), (140, 21766), (147, 21805), (148, 21808),

Gene: Phlop\_26 Start: 17656, Stop: 18099, Start Num: 38

Candidate Starts for Phlop\_26:

(Start: 38 @17656 has 116 MA's), (112, 17917), (148, 18073),

Gene: Phlyer\_26 Start: 20098, Stop: 20511, Start Num: 33

Candidate Starts for Phlyer\_26:

(Start: 33 @20098 has 57 MA's), (67, 20218), (68, 20224), (82, 20272), (103, 20356), (139, 20482),

Gene: Phrampa\_79 Start: 50368, Stop: 50751, Start Num: 37

Candidate Starts for Phrampa\_79:

(Start: 37 @50368 has 7 MA's), (Start: 43 @50407 has 1 MA's), (67, 50488), (70, 50509), (77, 50533), (98, 50590), (99, 50593), (116, 50647), (123, 50674),

Gene: PinkCoffee\_28 Start: 18295, Stop: 18738, Start Num: 38

Candidate Starts for PinkCoffee\_28:

(Start: 38 @18295 has 116 MA's), (112, 18556), (148, 18712),

Gene: Pipefish\_26 Start: 20248, Stop: 20661, Start Num: 33

Candidate Starts for Pipefish\_26:

(Start: 33 @20248 has 57 MA's), (67, 20368), (68, 20374), (82, 20422), (103, 20506), (139, 20632),

Gene: Portcullis\_26 Start: 17599, Stop: 18042, Start Num: 38

Candidate Starts for Portcullis\_26:

(Start: 38 @17599 has 116 MA's), (112, 17860), (148, 18016),

Gene: PullumCavea\_26 Start: 17656, Stop: 18099, Start Num: 38

Candidate Starts for PullumCavea\_26:

(Start: 38 @17656 has 116 MA's), (112, 17917), (148, 18073),

Gene: Pumpernickel\_91 Start: 51418, Stop: 51831, Start Num: 24

Candidate Starts for Pumpernickel\_91:

(Start: 24 @51418 has 1 MA's), (52, 51508), (63, 51541), (67, 51565), (70, 51586), (99, 51670), (122, 51748), (127, 51766), (129, 51769),

Gene: Pumpkiney\_31 Start: 20284, Stop: 20715, Start Num: 38

Candidate Starts for Pumpkiney\_31:

(7, 20098), (16, 20158), (20, 20224), (Start: 27 @20257 has 2 MA's), (Start: 38 @20284 has 116 MA's), (70, 20413), (83, 20443), (112, 20545), (114, 20551), (118, 20566), (132, 20623), (136, 20638), (147, 20686), (148, 20689),

Gene: Racecar\_88 Start: 53421, Stop: 53804, Start Num: 37

Candidate Starts for Racecar\_88:

(Start: 37 @53421 has 7 MA's), (Start: 43 @53460 has 1 MA's), (44, 53463), (70, 53562), (77, 53586), (97, 53637), (99, 53646), (116, 53700), (123, 53727), (125, 53739),

Gene: RagingRooster\_26 Start: 19364, Stop: 19777, Start Num: 33

Candidate Starts for RagingRooster\_26:

(Start: 33 @19364 has 57 MA's), (56, 19439), (67, 19484), (68, 19490), (103, 19622), (139, 19748),

Gene: RainyPolka\_20 Start: 19600, Stop: 19980, Start Num: 46

Candidate Starts for RainyPolka\_20:

(5, 19327), (14, 19408), (Start: 46 @19600 has 8 MA's), (52, 19615), (65, 19657), (72, 19702), (90, 19744), (111, 19822), (126, 19873), (131, 19888), (134, 19915), (136, 19918),

Gene: Reccee\_25 Start: 19570, Stop: 19986, Start Num: 31

Candidate Starts for Reccee\_25:

(Start: 31 @19570 has 15 MA's), (48, 19630), (68, 19699), (101, 19804), (106, 19834), (145, 19981),

Gene: ReginaGlobina\_87 Start: 52911, Stop: 53291, Start Num: 38

Candidate Starts for ReginaGlobina\_87:

(Start: 38 @52911 has 116 MA's), (41, 52920), (Start: 43 @52947 has 1 MA's), (84, 53088), (99, 53133), (110, 53166), (127, 53229),

Gene: Ribeye\_30 Start: 23007, Stop: 23441, Start Num: 32

Candidate Starts for Ribeye\_30:

(Start: 32 @23007 has 8 MA's), (53, 23061), (63, 23091), (83, 23166), (112, 23268), (118, 23289), (136, 23361), (148, 23412),

Gene: Rich\_24 Start: 19142, Stop: 19558, Start Num: 31

Candidate Starts for Rich\_24:

(Start: 31 @19142 has 15 MA's), (66, 19259), (68, 19271), (89, 19334), (139, 19523), (145, 19553),

Gene: Rinkes\_28 Start: 21670, Stop: 22086, Start Num: 31

Candidate Starts for Rinkes\_28:

(Start: 31 @21670 has 15 MA's), (67, 21793), (68, 21799), (76, 21835), (101, 21904), (123, 21982), (127, 21997), (139, 22051), (141, 22054), (144, 22078),

Gene: Rita130\_25 Start: 19390, Stop: 19806, Start Num: 31

Candidate Starts for Rita130\_25:

(Start: 31 @19390 has 15 MA's), (48, 19450), (68, 19519), (101, 19624), (106, 19654), (145, 19801),

Gene: Rita1961\_26 Start: 19359, Stop: 19772, Start Num: 33

Candidate Starts for Rita1961\_26:

(Start: 33 @19359 has 57 MA's), (56, 19434), (67, 19479), (68, 19485), (103, 19617), (139, 19743),

Gene: RiverRaider\_30 Start: 21439, Stop: 21873, Start Num: 38

Candidate Starts for RiverRaider\_30:

(Start: 38 @21439 has 116 MA's), (63, 21523), (112, 21700), (118, 21721), (132, 21778), (136, 21793), (148, 21844),

Gene: RoadKill\_25 Start: 19107, Stop: 19538, Start Num: 38

Candidate Starts for RoadKill\_25:

(10, 18933), (15, 18984), (Start: 38 @19107 has 116 MA's), (63, 19191), (83, 19266), (117, 19386), (123, 19401), (136, 19461), (146, 19500), (147, 19509), (148, 19512),

Gene: Rockabye\_89 Start: 55651, Stop: 56040, Start Num: 38

Candidate Starts for Rockabye\_89:

(Start: 38 @55651 has 116 MA's), (52, 55711), (62, 55741), (68, 55774), (99, 55873), (116, 55927), (123, 55954), (125, 55966), (135, 56014),

Gene: Rofo\_30 Start: 23214, Stop: 23648, Start Num: 38

Candidate Starts for Rofo\_30:

(23, 23184), (Start: 38 @23214 has 116 MA's), (63, 23298), (83, 23373), (92, 23397), (112, 23475), (136, 23568), (148, 23619),

Gene: RogerDodger\_29 Start: 18449, Stop: 18892, Start Num: 38

Candidate Starts for RogerDodger\_29:

(Start: 38 @18449 has 116 MA's), (112, 18710), (148, 18866),

Gene: RomaT\_26 Start: 20149, Stop: 20562, Start Num: 33

Candidate Starts for RomaT\_26:

(Start: 33 @20149 has 57 MA's), (67, 20269), (68, 20275), (103, 20407), (139, 20533),

Gene: SJReid\_90 Start: 54733, Stop: 55122, Start Num: 38

Candidate Starts for SJReid\_90:

(Start: 38 @54733 has 116 MA's), (51, 54790), (77, 54895), (78, 54898), (99, 54955), (116, 55009), (123, 55036), (125, 55048), (135, 55096),

Gene: Salete\_19 Start: 19235, Stop: 19615, Start Num: 46

Candidate Starts for Salete\_19:

(1, 18785), (14, 19067), (Start: 46 @19235 has 8 MA's), (52, 19250), (65, 19292), (72, 19337), (102, 19427), (111, 19457), (126, 19508), (131, 19523), (134, 19550), (136, 19553),

Gene: Salvador\_26 Start: 17570, Stop: 18013, Start Num: 38

Candidate Starts for Salvador\_26:

(Start: 38 @17570 has 116 MA's), (112, 17831), (148, 17987),

Gene: Sampson\_30 Start: 22909, Stop: 23340, Start Num: 38

Candidate Starts for Sampson\_30:

(20, 22849), (Start: 27 @22882 has 2 MA's), (Start: 38 @22909 has 116 MA's), (70, 23038), (83, 23068), (112, 23170), (114, 23176), (118, 23191), (132, 23248), (136, 23263), (147, 23311), (148, 23314),

Gene: Sanjuju\_28 Start: 23395, Stop: 23829, Start Num: 38

Candidate Starts for Sanjuju\_28:

(23, 23365), (Start: 38 @23395 has 116 MA's), (63, 23479), (83, 23554), (92, 23578), (112, 23656), (118, 23677), (136, 23749), (148, 23800),

Gene: Saronaya\_29 Start: 21853, Stop: 22287, Start Num: 38

Candidate Starts for Saronaya\_29:

(Start: 33 @21844 has 57 MA's), (Start: 38 @21853 has 116 MA's), (63, 21937), (83, 22012), (112, 22114), (118, 22135), (132, 22192), (136, 22207), (148, 22258),

Gene: Savbucketdawg\_26 Start: 17351, Stop: 17794, Start Num: 38

Candidate Starts for Savbucketdawg\_26:

(Start: 38 @17351 has 116 MA's), (112, 17612), (148, 17768),

Gene: SchottB\_28 Start: 22865, Stop: 23299, Start Num: 38

Candidate Starts for SchottB\_28:

(Start: 33 @22856 has 57 MA's), (Start: 38 @22865 has 116 MA's), (63, 22949), (83, 23024), (112, 23126), (118, 23147), (132, 23204), (136, 23219), (148, 23270),

Gene: Scioto\_30 Start: 22964, Stop: 23395, Start Num: 38

Candidate Starts for Scioto\_30:

(20, 22904), (Start: 27 @22937 has 2 MA's), (Start: 38 @22964 has 116 MA's), (70, 23093), (83, 23123), (112, 23225), (114, 23231), (118, 23246), (132, 23303), (136, 23318), (147, 23366), (148, 23369),

Gene: Sedona\_30 Start: 24320, Stop: 24754, Start Num: 38

Candidate Starts for Sedona\_30:

(Start: 38 @24320 has 116 MA's), (63, 24404), (83, 24479), (92, 24503), (112, 24581), (118, 24602), (132, 24659), (136, 24674), (148, 24725),

Gene: Sejanus\_22 Start: 17555, Stop: 17959, Start Num: 31

Candidate Starts for Sejanus\_22:

(Start: 31 @17555 has 15 MA's), (57, 17633), (67, 17678), (68, 17684), (81, 17729), (89, 17750), (101, 17792), (103, 17816), (115, 17843), (119, 17855), (137, 17933),

Gene: Sendy\_27 Start: 17805, Stop: 18248, Start Num: 38

Candidate Starts for Sendy\_27:

(4, 17589), (8, 17631), (Start: 38 @17805 has 116 MA's), (112, 18066), (148, 18222),

Gene: SharkTale\_26 Start: 18370, Stop: 18813, Start Num: 38

Candidate Starts for SharkTale\_26:

(Start: 38 @18370 has 116 MA's), (148, 18787),

Gene: Shenandoah\_26 Start: 19342, Stop: 19755, Start Num: 33

Candidate Starts for Shenandoah\_26:

(Start: 33 @19342 has 57 MA's), (56, 19417), (67, 19462), (68, 19468), (103, 19600), (139, 19726),

Gene: Shenyu\_25 Start: 19342, Stop: 19758, Start Num: 31

Candidate Starts for Shenyu\_25:

(Start: 31 @19342 has 15 MA's), (89, 19534), (101, 19576), (115, 19627), (145, 19753),

Gene: Shinji\_26 Start: 17540, Stop: 17983, Start Num: 38

Candidate Starts for Shinji\_26:

(Start: 38 @17540 has 116 MA's), (112, 17801), (148, 17957),

Gene: Shivanishola\_31 Start: 23294, Stop: 23728, Start Num: 38

Candidate Starts for Shivanishola\_31:

(23, 23264), (Start: 38 @23294 has 116 MA's), (63, 23378), (83, 23453), (92, 23477), (112, 23555), (118, 23576), (136, 23648), (148, 23699),

Gene: SirJeffery\_25 Start: 19385, Stop: 19801, Start Num: 31

Candidate Starts for SirJeffery\_25:

(Start: 31 @19385 has 15 MA's), (48, 19445), (68, 19514), (101, 19619), (106, 19649), (145, 19796),

Gene: Sitar\_30 Start: 24387, Stop: 24821, Start Num: 38

Candidate Starts for Sitar\_30:

(23, 24357), (Start: 38 @24387 has 116 MA's), (63, 24471), (83, 24546), (112, 24648), (118, 24669), (136, 24741), (148, 24792),

Gene: Sixama\_94 Start: 51509, Stop: 51916, Start Num: 38

Candidate Starts for Sixama\_94:

(Start: 37 @51506 has 7 MA's), (Start: 38 @51509 has 116 MA's), (Start: 43 @51545 has 1 MA's), (63, 51602), (104, 51776), (108, 51785), (120, 51821), (121, 51833), (127, 51854), (133, 51887), (135, 51899), (139, 51908),

Gene: Sixsevenium\_27 Start: 17507, Stop: 17950, Start Num: 38

Candidate Starts for Sixsevenium\_27:

(Start: 38 @17507 has 116 MA's), (148, 17924),

Gene: SlippinJimmy\_26 Start: 20128, Stop: 20541, Start Num: 33

Candidate Starts for SlippinJimmy\_26:

(Start: 33 @20128 has 57 MA's), (67, 20248), (68, 20254), (82, 20302), (103, 20386), (139, 20512),

Gene: SmokingBunny\_26 Start: 17570, Stop: 18013, Start Num: 38

Candidate Starts for SmokingBunny\_26:

(Start: 38 @17570 has 116 MA's), (112, 17831), (148, 17987),

Gene: Stewart25555\_78 Start: 49328, Stop: 49672, Start Num: 43

Candidate Starts for Stewart25555\_78:

(Start: 38 @49292 has 116 MA's), (41, 49301), (Start: 43 @49328 has 1 MA's), (99, 49514), (127, 49610),

Gene: Stichling\_27 Start: 21367, Stop: 21801, Start Num: 38  
Candidate Starts for Stichling\_27:  
(Start: 38 @21367 has 116 MA's), (63, 21451), (68, 21481), (112, 21628), (118, 21649), (132, 21706),  
(136, 21721), (148, 21772),

Gene: StinkyVeggy\_27 Start: 19514, Stop: 19930, Start Num: 31  
Candidate Starts for StinkyVeggy\_27:  
(Start: 31 @19514 has 15 MA's), (89, 19706), (115, 19799), (145, 19925),

Gene: StorminNorm\_29 Start: 21732, Stop: 22166, Start Num: 38  
Candidate Starts for StorminNorm\_29:  
(Start: 33 @21723 has 57 MA's), (Start: 38 @21732 has 116 MA's), (63, 21816), (83, 21891), (112,  
21993), (118, 22014), (132, 22071), (136, 22086), (148, 22137),

Gene: Stultus\_28 Start: 22302, Stop: 22736, Start Num: 38  
Candidate Starts for Stultus\_28:  
(23, 22272), (Start: 38 @22302 has 116 MA's), (63, 22386), (83, 22461), (92, 22485), (112, 22563),  
(118, 22584), (136, 22656), (148, 22707),

Gene: Suigeneris\_25 Start: 19394, Stop: 19810, Start Num: 31  
Candidate Starts for Suigeneris\_25:  
(Start: 31 @19394 has 15 MA's), (48, 19454), (68, 19523), (101, 19628), (106, 19658), (145, 19805),

Gene: SwainyDoc\_26 Start: 19361, Stop: 19774, Start Num: 33  
Candidate Starts for SwainyDoc\_26:  
(Start: 33 @19361 has 57 MA's), (56, 19436), (67, 19481), (68, 19487), (103, 19619), (139, 19745),

Gene: SynergyX\_26 Start: 19364, Stop: 19777, Start Num: 33  
Candidate Starts for SynergyX\_26:  
(Start: 33 @19364 has 57 MA's), (56, 19439), (67, 19484), (68, 19490), (103, 19622), (139, 19748),

Gene: TP1604\_19 Start: 19235, Stop: 19615, Start Num: 46  
Candidate Starts for TP1604\_19:  
(1, 18785), (14, 19067), (Start: 46 @19235 has 8 MA's), (52, 19250), (65, 19292), (72, 19337), (102,  
19427), (111, 19457), (126, 19508), (131, 19523), (134, 19550), (136, 19553),

Gene: Talia1610\_87 Start: 52786, Stop: 53169, Start Num: 37  
Candidate Starts for Talia1610\_87:  
(Start: 37 @52786 has 7 MA's), (Start: 43 @52825 has 1 MA's), (70, 52927), (77, 52951), (86, 52972),  
(97, 53002), (99, 53011), (116, 53065), (123, 53092), (125, 53104),

Gene: Tangent\_30 Start: 22736, Stop: 23170, Start Num: 38  
Candidate Starts for Tangent\_30:  
(23, 22706), (Start: 38 @22736 has 116 MA's), (63, 22820), (83, 22895), (92, 22919), (112, 22997),  
(136, 23090), (148, 23141),

Gene: Tangerine\_29 Start: 21738, Stop: 22172, Start Num: 38  
Candidate Starts for Tangerine\_29:  
(Start: 33 @21729 has 57 MA's), (Start: 38 @21738 has 116 MA's), (63, 21822), (83, 21897), (112,  
21999), (118, 22020), (132, 22077), (136, 22092), (148, 22143),

Gene: Taptic\_19 Start: 18137, Stop: 18547, Start Num: 33

Candidate Starts for Taptic\_19:

(Start: 33 @18137 has 57 MA's), (57, 18212), (67, 18257), (68, 18263), (79, 18305), (89, 18329), (95, 18350), (121, 18452), (133, 18497),

Gene: Tardus\_31 Start: 22245, Stop: 22676, Start Num: 38

Candidate Starts for Tardus\_31:

(Start: 27 @22218 has 2 MA's), (Start: 38 @22245 has 116 MA's), (63, 22329), (70, 22374), (83, 22404), (112, 22506), (114, 22512), (118, 22527), (132, 22584), (136, 22599), (147, 22647), (148, 22650),

Gene: Thing3\_29 Start: 23229, Stop: 23663, Start Num: 38

Candidate Starts for Thing3\_29:

(23, 23199), (Start: 38 @23229 has 116 MA's), (63, 23313), (83, 23388), (92, 23412), (112, 23490), (118, 23511), (136, 23583), (148, 23634),

Gene: Tiamoceli\_28 Start: 20458, Stop: 20889, Start Num: 38

Candidate Starts for Tiamoceli\_28:

(12, 20290), (Start: 38 @20458 has 116 MA's), (63, 20542), (83, 20617), (117, 20737), (123, 20752), (136, 20812), (140, 20821), (147, 20860), (148, 20863),

Gene: TillyBobJoe\_26 Start: 17354, Stop: 17797, Start Num: 38

Candidate Starts for TillyBobJoe\_26:

(Start: 38 @17354 has 116 MA's), (112, 17615), (148, 17771),

Gene: TinyTerror\_26 Start: 19361, Stop: 19774, Start Num: 33

Candidate Starts for TinyTerror\_26:

(Start: 33 @19361 has 57 MA's), (67, 19481), (68, 19487), (82, 19535), (103, 19619), (139, 19745),

Gene: Togo\_26 Start: 17570, Stop: 18013, Start Num: 38

Candidate Starts for Togo\_26:

(Start: 38 @17570 has 116 MA's), (112, 17831), (148, 17987),

Gene: Tonitrus\_40 Start: 27403, Stop: 27783, Start Num: 45

Candidate Starts for Tonitrus\_40:

(30, 27346), (Start: 45 @27403 has 1 MA's), (57, 27433), (68, 27484), (81, 27529), (82, 27532), (89, 27547), (94, 27559), (113, 27637), (121, 27667), (123, 27670), (130, 27691),

Gene: TurkishDelight\_25 Start: 21435, Stop: 21812, Start Num: 47

Candidate Starts for TurkishDelight\_25:

(14, 21273), (21, 21360), (39, 21411), (Start: 47 @21435 has 4 MA's), (50, 21441), (52, 21447), (55, 21453), (72, 21534), (87, 21570), (92, 21582), (95, 21594), (107, 21648), (132, 21735), (134, 21747), (143, 21783),

Gene: Twister6\_28 Start: 17997, Stop: 18440, Start Num: 38

Candidate Starts for Twister6\_28:

(Start: 38 @17997 has 116 MA's), (112, 18258), (148, 18414),

Gene: Twonlo\_25 Start: 19076, Stop: 19507, Start Num: 38

Candidate Starts for Twonlo\_25:

(Start: 38 @19076 has 116 MA's), (63, 19160), (83, 19235), (117, 19355), (123, 19370), (136, 19430), (140, 19439), (147, 19478), (148, 19481),

Gene: Tycho\_29 Start: 21827, Stop: 22261, Start Num: 38

Candidate Starts for Tycho\_29:

(Start: 33 @21818 has 57 MA's), (Start: 38 @21827 has 116 MA's), (63, 21911), (83, 21986), (112, 22088), (118, 22109), (132, 22166), (136, 22181), (148, 22232),

Gene: Tydolla\_26 Start: 20101, Stop: 20514, Start Num: 33

Candidate Starts for Tydolla\_26:

(Start: 33 @20101 has 57 MA's), (67, 20221), (68, 20227), (82, 20275), (103, 20359), (139, 20485),

Gene: Valary\_29 Start: 18503, Stop: 18946, Start Num: 38

Candidate Starts for Valary\_29:

(Start: 38 @18503 has 116 MA's), (112, 18764), (148, 18920),

Gene: VanDeWege\_29 Start: 18378, Stop: 18821, Start Num: 38

Candidate Starts for VanDeWege\_29:

(Start: 38 @18378 has 116 MA's), (112, 18639), (148, 18795),

Gene: Verity\_29 Start: 23097, Stop: 23528, Start Num: 38

Candidate Starts for Verity\_29:

(Start: 27 @23070 has 2 MA's), (Start: 38 @23097 has 116 MA's), (63, 23181), (68, 23211), (70, 23226), (83, 23256), (91, 23277), (112, 23358), (114, 23364), (123, 23391), (132, 23436), (136, 23451), (147, 23499), (148, 23502),

Gene: ViaConlectus\_30 Start: 21588, Stop: 22019, Start Num: 38

Candidate Starts for ViaConlectus\_30:

(20, 21528), (Start: 27 @21561 has 2 MA's), (Start: 38 @21588 has 116 MA's), (70, 21717), (83, 21747), (112, 21849), (114, 21855), (118, 21870), (132, 21927), (136, 21942), (147, 21990), (148, 21993),

Gene: Vivi2\_32 Start: 23909, Stop: 24343, Start Num: 38

Candidate Starts for Vivi2\_32:

(23, 23879), (Start: 38 @23909 has 116 MA's), (63, 23993), (83, 24068), (92, 24092), (112, 24170), (118, 24191), (136, 24263), (148, 24314),

Gene: WaddleDee\_75 Start: 48766, Stop: 49110, Start Num: 43

Candidate Starts for WaddleDee\_75:

(Start: 38 @48730 has 116 MA's), (Start: 43 @48766 has 1 MA's), (68, 48853), (88, 48916), (97, 48943), (99, 48952), (127, 49048),

Gene: Wizard\_26 Start: 17704, Stop: 18147, Start Num: 38

Candidate Starts for Wizard\_26:

(Start: 38 @17704 has 116 MA's), (112, 17965), (148, 18121),

Gene: Xkcd426\_25 Start: 26648, Stop: 27025, Start Num: 47

Candidate Starts for Xkcd426\_25:

(34, 26606), (Start: 47 @26648 has 4 MA's), (52, 26660), (72, 26747), (96, 26807), (111, 26867), (126, 26918), (134, 26960), (143, 26996),

Gene: YDN12\_20 Start: 19174, Stop: 19551, Start Num: 47

Candidate Starts for YDN12\_20:

(14, 19003), (Start: 47 @19174 has 4 MA's), (52, 19186), (59, 19207), (65, 19228), (72, 19273), (102, 19363), (111, 19393), (126, 19444), (131, 19459), (134, 19486), (136, 19489),

Gene: Yahalom\_26 Start: 19376, Stop: 19789, Start Num: 33

Candidate Starts for Yahalom\_26:

(Start: 33 @19376 has 57 MA's), (67, 19496), (68, 19502), (82, 19550), (103, 19634), (139, 19760),

Gene: Yinz\_26 Start: 19402, Stop: 19815, Start Num: 33

Candidate Starts for Yinz\_26:

(Start: 33 @19402 has 57 MA's), (56, 19477), (67, 19522), (68, 19528), (103, 19660), (139, 19786),

Gene: YorkOnyx\_30 Start: 22083, Stop: 22517, Start Num: 32

Candidate Starts for YorkOnyx\_30:

(Start: 32 @22083 has 8 MA's), (53, 22137), (63, 22167), (89, 22257), (91, 22263), (112, 22344), (118, 22365), (136, 22437), (148, 22488),

Gene: YungMoney\_28 Start: 19070, Stop: 19513, Start Num: 38

Candidate Starts for YungMoney\_28:

(Start: 38 @19070 has 116 MA's), (148, 19487),

Gene: Zipp\_29 Start: 22994, Stop: 23425, Start Num: 38

Candidate Starts for Zipp\_29:

(Start: 27 @22967 has 2 MA's), (Start: 38 @22994 has 116 MA's), (68, 23108), (70, 23123), (83, 23153), (91, 23174), (112, 23255), (114, 23261), (123, 23288), (132, 23333), (136, 23348), (147, 23396), (148, 23399),

Gene: Zitch\_31 Start: 20868, Stop: 21299, Start Num: 38

Candidate Starts for Zitch\_31:

(Start: 27 @20841 has 2 MA's), (Start: 38 @20868 has 116 MA's), (63, 20952), (70, 20997), (83, 21027), (91, 21048), (112, 21129), (114, 21135), (118, 21150), (132, 21207), (136, 21222), (147, 21270), (148, 21273),

Gene: Zooman\_79 Start: 48365, Stop: 48775, Start Num: 27

Candidate Starts for Zooman\_79:

(Start: 27 @48365 has 2 MA's), (36, 48386), (Start: 43 @48425 has 1 MA's), (54, 48452), (57, 48461), (62, 48479), (77, 48551), (122, 48692), (129, 48713),

Gene: Zuko\_15 Start: 11717, Stop: 12112, Start Num: 49

Candidate Starts for Zuko\_15:

(Start: 49 @11717 has 2 MA's), (60, 11747), (69, 11795), (71, 11804), (119, 11963), (149, 12098),

Gene: phiAsp2\_21 Start: 13673, Stop: 14086, Start Num: 33

Candidate Starts for phiAsp2\_21:

(Start: 33 @13673 has 57 MA's), (Start: 45 @13724 has 1 MA's), (57, 13754), (68, 13796), (75, 13832), (85, 13856), (89, 13859), (94, 13871), (119, 13964), (127, 13994),