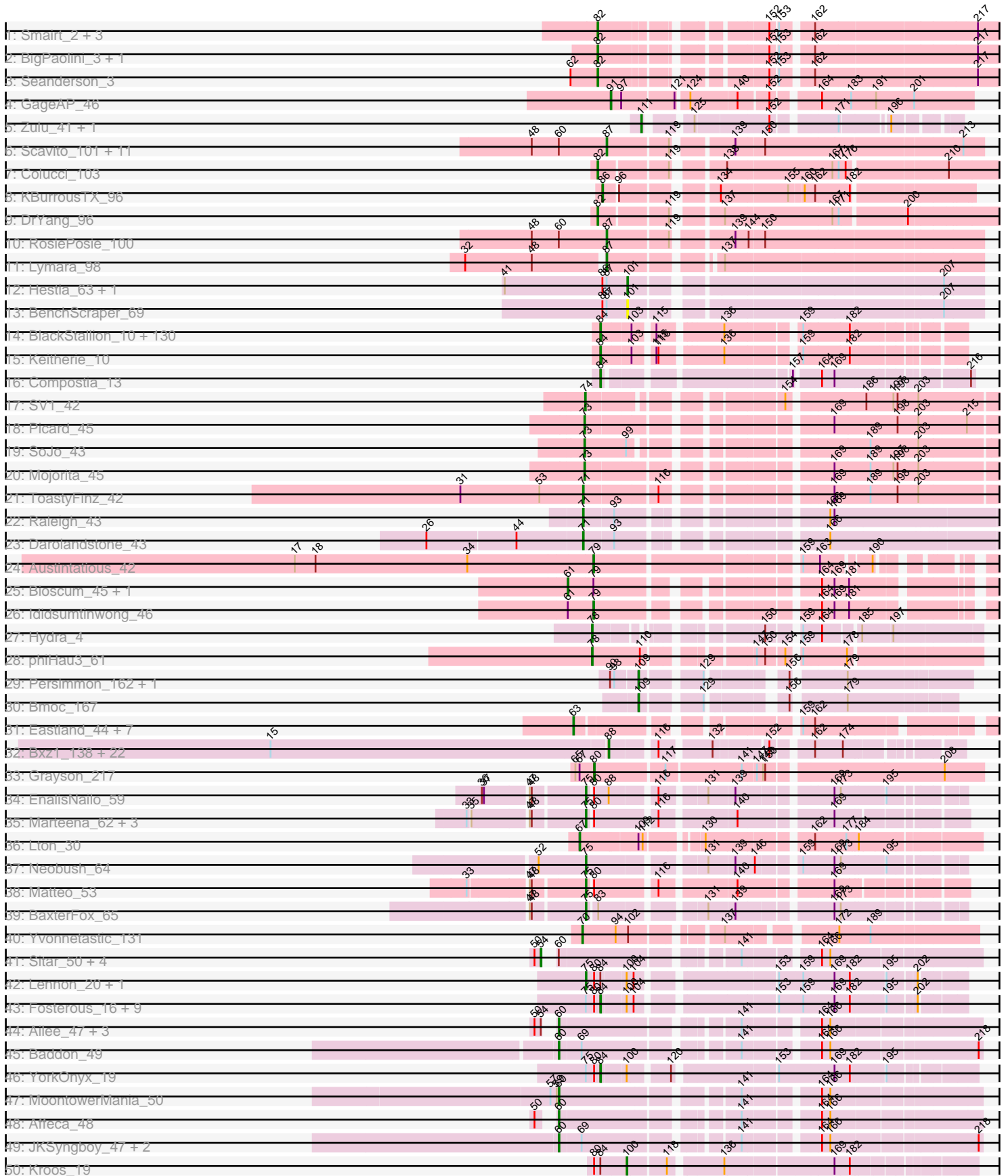
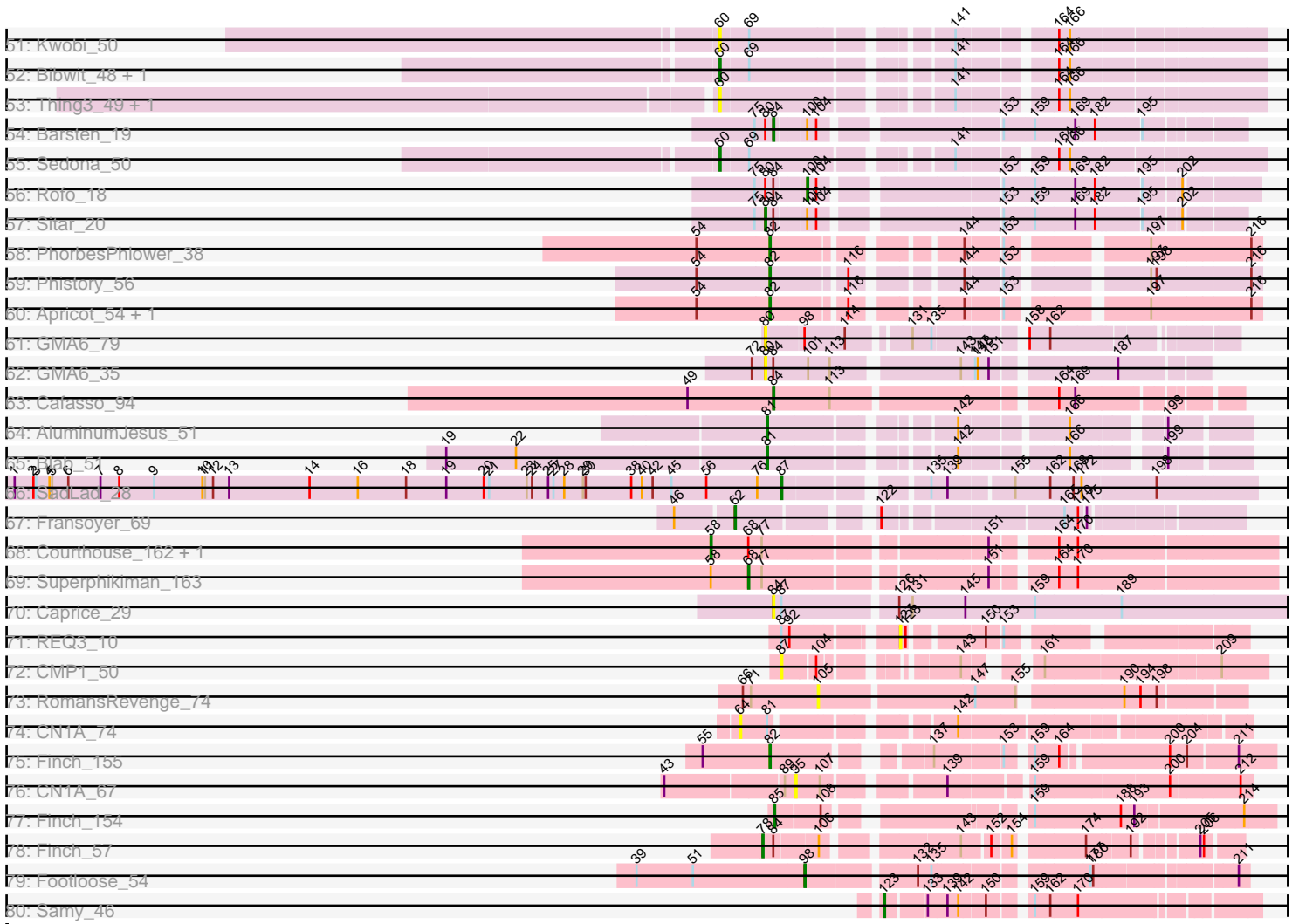


# Pham 163301



Pham 163301



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 163301 Report

This analysis was run 04/28/24 on database version 559.

WARNING: Pham size does not match number of genes in report. Either unphamerated genes have been added (by you) or starterator has removed genes due to invalid start codon.

Pham number 163301 has 284 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Smairt\_2, Gyzlar\_3, Dexes\_3, Smeagol\_2
- Track 2 : BigPaolini\_3, Licorice\_4
- Track 3 : Seanderson\_3
- Track 4 : GageAP\_46
- Track 5 : Zulu\_41, Tucker\_41
- Track 6 : Scavito\_101, PrincessTrina\_101, Chocolat\_100, HumptyDumpty\_100, Mordred\_100, JaNo\_99, Linus\_100, Chubster\_100, Tophat\_101, Kabreeze\_100, EdgarPoe\_100, Chipper1996\_1010
- Track 7 : Colucci\_103
- Track 8 : KBurroustX\_96
- Track 9 : DrYang\_96
- Track 10 : RosiePosie\_100
- Track 11 : Lymara\_98
- Track 12 : Hestia\_63, Faja\_72
- Track 13 : BenchScraper\_69
- Track 14 : BlackStallion\_10, Pops\_10, Puhltonio\_10, Durga\_10, Sigman\_10, Chunky\_10, Riggan\_10, Inchworm\_10, HSavage\_10, SDcharge11\_10, Lego3393\_10, Zaider\_11, Olive\_10, Swish\_10, Dingo\_10, Thora\_10, Fringe\_10, Haimas\_10, TomBombadil\_10, Oosterbaan\_10, Numberten\_10, DirtJuice\_10, QueenBeane\_10, Anderson\_10, Roliet\_10, JacAttac\_10, Phipps\_10, Harvey\_10, Pherdinand\_10, Craff\_10, Phamished\_10, OliverWalter\_10, Tomlarah\_10, Phunky\_10, Waterdiva\_10, FluffyNinja\_10, PhrodoBaggins\_105, JangoPhett\_10, Surely\_10, Nicole21\_10, Chah\_10, Sheila\_10, LeeLot\_10, Hetaeria\_10, Inverness\_10, Etaye\_10, Basato\_11, Hertubise\_10, AltPhacts\_10, Vivaldi\_10, Boehler\_10, UAch1\_10, Plmatters\_10, Buckeye\_10, EmpTee\_10, Melc17\_10, Mesh1\_10, Newman\_10, Kikipoo\_10, Badfish\_10, Podrick\_10, CamL\_10, Scoot17C\_10, Adriana\_10, Nacho\_0010, Lasso\_10, Valjean\_10, CheetO\_10, Soto\_10, Spartan300\_10, Virapocalypse\_10, ShiVal\_10, Pipsqueak\_10, Samaymay\_10, Frankicide\_10, GeneCoco\_10, Eremos\_10, Roscoe\_11, Tooj\_10, Fang\_10, Weher20\_10, Serpentine\_0010, ABU\_10, KlimbOn\_10, Zelda\_10, BlueHusk\_10, Hamish\_10, Prickles\_10, Suffolk\_10, Iridoclysis\_10, Mikota\_10, Orion\_10, MiniBoss\_10, OSmaximus\_10, Lulwa\_10, Colbert\_10, Kailash\_10, Trypo\_10, Vista\_10, Katniss\_10, Gophee\_10, Slatt\_10, Daka\_10, ThreeOh3D2\_10,

Charles1\_10, Horchata\_10, KLucky39\_10, Emiris\_10, ProfessorX\_10, PG1\_10, Skippy\_10, Usavi\_10, Magic8\_10, PhatLouie\_10, Morty\_10, Omniscient\_10, Gyrad\_0010, Zonia\_10, Yoshand\_10, YouGoGlencoco\_10, PhatCats2014\_10, Murdoc\_10, KingVeVeVe\_10, IsaacEli\_10, DoesntMatter\_10, Kloppinator\_10, Cannibal\_10, Megatron\_10, FriarPreacher\_10, Cobra\_10, Serendipity\_10

- Track 15 : Keitherie\_10
- Track 16 : Compostia\_13
- Track 17 : SV1\_42
- Track 18 : Picard\_45
- Track 19 : SoJo\_43
- Track 20 : Mojorita\_45
- Track 21 : ToastyFinz\_42
- Track 22 : Raleigh\_43
- Track 23 : Darolandstone\_43
- Track 24 : Austintatious\_42
- Track 25 : Bioscum\_45, PapayaSalad\_44
- Track 26 : Ididsumtinwong\_46
- Track 27 : Hydra\_4
- Track 28 : phiHau3\_61
- Track 29 : Persimmon\_162, WhereRU\_166
- Track 30 : Bmoc\_167
- Track 31 : Eastland\_44, Piccadilly\_44, Ignacio\_44, Eklok\_44, HFrancette\_45, AxeJC\_43, Vondra\_43, Cumberbatch\_45
- Track 32 : Bxz1\_138, Mangeria\_141, LRRHood\_134, Cane17\_133, Lukilu\_131, Pio\_145, Jessibeth14\_140, Rabinovish\_140, Shaqnato\_134, Fludd\_142, Breeniome\_140, Shelob\_143, MikeLiesIn\_142, Phox\_138, Teardrop\_140, LolaVinca\_141, HyRo\_132, ChickenPhender\_137, Cali\_136, CharlieB\_138, Koguma\_138, Shifa\_130, Burrough\_141
- Track 33 : Grayson\_217
- Track 34 : EnalisNailo\_59
- Track 35 : Marteena\_62, EMSquaredA\_63, Pollux\_66, Floral\_64
- Track 36 : Lton\_30
- Track 37 : Neobush\_64
- Track 38 : Matteo\_53
- Track 39 : BaxterFox\_65
- Track 40 : Yvonnetastic\_131
- Track 41 : Sitar\_50, Vivi2\_54, Keitabear\_50, Lennon\_50, Angelicage\_48
- Track 42 : Lennon\_20, Vivi2\_18
- Track 43 : Fosterous\_16, Love\_20, Paries\_19, Charming\_16, BobBob\_16, Galadriel\_20, Bibwit\_19, Tangent\_16, Keitabear\_20, Nordenberg\_13
- Track 44 : Ailee\_47, Love\_55, Kewpiedoll\_51, Shivanishola\_50
- Track 45 : Baddon\_49
- Track 46 : YorkOnyx\_19
- Track 47 : MoontowerMania\_50
- Track 48 : Affeca\_48
- Track 49 : JKSyngboy\_47, Saronaya\_49, Gustavo\_49
- Track 50 : Kroos\_19
- Track 51 : Kwobi\_50
- Track 52 : Bibwit\_48, YorkOnyx\_50
- Track 53 : Thing3\_49, Kamashten\_49
- Track 54 : Barsten\_19
- Track 55 : Sedona\_50
- Track 56 : Rofo\_18

- Track 57 : Sitar\_20
- Track 58 : PhorbesPhlower\_38
- Track 59 : Phistory\_56
- Track 60 : Apricot\_54, Crater\_54
- Track 61 : GMA6\_79
- Track 62 : GMA6\_35
- Track 63 : Cafasso\_94
- Track 64 : AluminumJesus\_51
- Track 65 : Blab\_51
- Track 66 : SadLad\_28
- Track 67 : Fransoyer\_69
- Track 68 : Courthouse\_162, Ariel\_165
- Track 69 : Superphikiman\_163
- Track 70 : Caprice\_29
- Track 71 : REQ3\_10
- Track 72 : CMP1\_50
- Track 73 : RomansRevenge\_74
- Track 74 : CN1A\_74
- Track 75 : Finch\_155
- Track 76 : CN1A\_67
- Track 77 : Finch\_154
- Track 78 : Finch\_57
- Track 79 : Footloose\_54
- Track 80 : Samy\_46

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

The start number called the most often in the published annotations is 84, it was called in 146 of the 268 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- ABU\_10, Adriana\_10, AltPhacts\_10, Anderson\_10, Badfish\_10, Barsten\_19, Basato\_11, Bibwit\_19, BlackStallion\_10, BlueHusk\_10, BobBob\_16, Boehler\_10, Buckeye\_10, Cafasso\_94, CamL\_10, Cannibal\_10, Caprice\_29, Chah\_10, Charles1\_10, Charming\_16, CheetO\_10, Chunky\_10, Cobra\_10, Colbert\_10, Compostia\_13, Craff\_10, Daka\_10, Dingo\_10, DirtJuice\_10, DoesntMatter\_10, Durga\_10, Emiris\_10, EmpTee\_10, Eremos\_10, Etaye\_10, Fang\_10, FluffyNinja\_10, Fosterous\_16, Frankicide\_10, FriarPreacher\_10, Fringe\_10, Galadriel\_20, GeneCoco\_10, Gophee\_10, Gyarad\_0010, HSavage\_10, Haimas\_10, Hamish\_10, Harvey\_10, Hertubise\_10, Hetaeria\_10, Horchata\_10, Inchworm\_10, Inverness\_10, Iridoclysis\_10, IsaacEli\_10, JacAttac\_10, JangoPhett\_10, KLucky39\_10, Kailash\_10, Katniss\_10, Keitabear\_20, Keitherie\_10, Kikipoo\_10, KingVeVeVe\_10, KlimbOn\_10, Kloppinator\_10, Lasso\_10, LeeLot\_10, Lego3393\_10, Love\_20, Lulwa\_10, Magic8\_10, Megatron\_10, Melc17\_10, Mesh1\_10, Mikota\_10, MiniBoss\_10, Morty\_10, Murdoc\_10, Nacho\_0010, Newman\_10, Nicole21\_10, Nordenberg\_13, Numberten\_10, OSmaximus\_10, Olive\_10, OliverWalter\_10, Omniscient\_10, Oosterbaan\_10, Orion\_10, PG1\_10, Paries\_19, Phamished\_10, PhatCats2014\_10, PhatLouie\_10, Pherdinand\_10, Phipps\_10, PhrodoBaggins\_105, Phunky\_10, Pipsqueak\_10, Plmatters\_10, Podrick\_10, Pops\_10, Prickles\_10, ProfessorX\_10, Puhltonio\_10, QueenBeane\_10, Riggan\_10, Roliet\_10, Roscoe\_11, SDcharge11\_10,

Samaymay\_10, Scoot17C\_10, Serendipity\_10, Serpentine\_0010, Sheila\_10, ShiVal\_10, Sigman\_10, Skippy\_10, Slatt\_10, Soto\_10, Spartan300\_10, Suffolk\_10, Surely\_10, Swish\_10, Tangent\_16, Thora\_10, ThreeOh3D2\_10, TomBombadil\_10, Tomlarah\_10, Tooj\_10, Trypo\_10, UAch1\_10, Usavi\_10, Valjean\_10, Virapocalypse\_10, Vista\_10, Vivaldi\_10, Waterdiva\_10, Weher20\_10, YorkOnyx\_19, Yoshand\_10, YouGoGlencoco\_10, Zaider\_11, Zelda\_10, Zonia\_10,

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

- Finch\_57, GMA6\_35, Kroos\_19, Lennon\_20, Rofo\_18, Sitar\_20, Vivi2\_18,

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

- Affeca\_48, Ailee\_47, AluminumJesus\_51, Angelicage\_48, Apricot\_54, Ariel\_165, Austintatious\_42, AxeJC\_43, Baddon\_49, BaxterFox\_65, BenchScraper\_69, Bibwit\_48, BigPaolini\_3, Bioscum\_45, Blab\_51, Bmoc\_167, Breeniome\_140, Burrough\_141, Bxz1\_138, CMP1\_50, CN1A\_67, CN1A\_74, Cali\_136, Cane17\_133, CharlieB\_138, ChickenPhender\_137, Chipper1996\_1010, Chocolat\_100, Chubster\_100, Colucci\_103, Courthouse\_162, Crater\_54, Cumberbatch\_45, Darolandstone\_43, Dexes\_3, DrYang\_96, EMSquaredA\_63, Eastland\_44, EdgarPoe\_100, Eklok\_44, EnalisNailo\_59, Faja\_72, Finch\_154, Finch\_155, Floral\_64, Fludd\_142, Footloose\_54, Fransoyer\_69, GMA6\_79, GageAP\_46, Grayson\_217, Gustavo\_49, Gyzlar\_3, HFrancette\_45, Hestia\_63, HumptyDumpty\_100, HyRo\_132, Hydra\_4, Ididsumtinwong\_46, Ignacio\_44, JKSyngboy\_47, JaNo\_99, Jessibeth14\_140, KBurrousTX\_96, Kabreeze\_100, Kamashten\_49, Keitabear\_50, Kewpiedoll\_51, Koguma\_138, Kwobi\_50, LRRHood\_134, Lennon\_50, Licorice\_4, Linus\_100, LolaVinca\_141, Love\_55, Lton\_30, Lukilu\_131, Lymara\_98, Mangeria\_141, Marteena\_62, Matteo\_53, MikeLiesIn\_142, Mojorita\_45, MoontowerMania\_50, Mordred\_100, Neobush\_64, PapayaSalad\_44, Persimmon\_162, Phistory\_56, PhorbesPhlower\_38, Phox\_138, Picard\_45, Piccadilly\_44, Pio\_145, Pollux\_66, PrincessTrina\_101, REQ3\_10, Rabinovish\_140, Raleigh\_43, RomansRevenge\_74, RosiePosie\_100, SV1\_42, SadLad\_28, Samy\_46, Saronaya\_49, Scavito\_101, Seanderson\_3, Sedona\_50, Shaqnato\_134, Shelob\_143, Shifa\_130, Shivanishola\_50, Sitar\_50, Smairt\_2, Smeagol\_2, SoJo\_43, Superphikiman\_163, Teardrop\_140, Thing3\_49, ToastyFinz\_42, Tophat\_101, Tucker\_41, Vivi2\_54, Vondra\_43, WhereRU\_166, YorkOnyx\_50, Yvonnetastic\_131, Zulu\_41, phiHau3\_61,

### Summary by start number:

Start 54:

- Found in 13 of 284 ( 4.6% ) of genes in pham
- Manual Annotations of this start: 5 of 268
- Called 38.5% of time when present
- Phage (with cluster) where this start called: Angelicage\_48 (DE1), Keitabear\_50 (DE1), Lennon\_50 (DE1), Sitar\_50 (DE1), Vivi2\_54 (DE1),

Start 58:

- Found in 3 of 284 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 268
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Ariel\_165 (J), Courthouse\_162 (J),

Start 60:

- Found in 34 of 284 ( 12.0% ) of genes in pham

- Manual Annotations of this start: 11 of 268
- Called 47.1% of time when present
- Phage (with cluster) where this start called: Affeca\_48 (DE1), Ailee\_47 (DE1), Baddon\_49 (DE1), Bibwit\_48 (DE1), Gustavo\_49 (DE1), JKSyngboy\_47 (DE1), Kamashten\_49 (DE1), Kewpiedoll\_51 (DE1), Kwobi\_50 (DE1), Love\_55 (DE1), MoontowerMania\_50 (DE1), Saronaya\_49 (DE1), Sedona\_50 (DE1), Shivanishola\_50 (DE1), Thing3\_49 (DE1), YorkOnyx\_50 (DE1),

#### Start 61:

- Found in 3 of 284 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 268
- Called 66.7% of time when present
- Phage (with cluster) where this start called: Bioscum\_45 (BC3), PapayaSalad\_44 (BC3),

#### Start 62:

- Found in 2 of 284 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 268
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Fransoyer\_69 (EG),

#### Start 63:

- Found in 8 of 284 ( 2.8% ) of genes in pham
- Manual Annotations of this start: 8 of 268
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AxeJC\_43 (BP), Cumberbatch\_45 (BP), Eastland\_44 (BP), Eklok\_44 (BP), HFrancette\_45 (BP), Ignacio\_44 (BP), Piccadilly\_44 (BP), Vondra\_43 (BP),

#### Start 64:

- Found in 1 of 284 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CN1A\_74 (singleton),

#### Start 67:

- Found in 2 of 284 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 268
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Lton\_30 (CZ),

#### Start 68:

- Found in 3 of 284 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 1 of 268
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Superphikiman\_163 (J),

#### Start 70:

- Found in 1 of 284 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 268
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Yvonnestic\_131 (DD),

Start 71:

- Found in 4 of 284 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 3 of 268
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Darolandstone\_43 (BC2), Raleigh\_43 (BC2), ToastyFinz\_42 (BC1),

Start 73:

- Found in 3 of 284 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 3 of 268
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Mojorita\_45 (BC1), Picard\_45 (BC1), SoJo\_43 (BC1),

Start 74:

- Found in 1 of 284 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 268
- Called 100.0% of time when present
- Phage (with cluster) where this start called: SV1\_42 (BC1),

Start 75:

- Found in 24 of 284 ( 8.5% ) of genes in pham
- Manual Annotations of this start: 10 of 268
- Called 41.7% of time when present
- Phage (with cluster) where this start called: BaxterFox\_65 (CZ3), EMsquaredA\_63 (CY1), EnalisNailo\_59 (CY1), Floral\_64 (CY1), Lennon\_20 (DE1), Marteena\_62 (CY1), Matteo\_53 (CZ2), Neobush\_64 (CZ1), Pollux\_66 (CY1), Vivi2\_18 (DE1),

Start 78:

- Found in 3 of 284 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 3 of 268
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Finch\_57 (singleton), Hydra\_4 (BD1), phiHau3\_61 (BD4),

Start 79:

- Found in 4 of 284 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 268
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Austintatious\_42 (BC3), Ididsumtinwong\_46 (BC3),

Start 80:

- Found in 26 of 284 ( 9.2% ) of genes in pham
- Manual Annotations of this start: 2 of 268
- Called 15.4% of time when present
- Phage (with cluster) where this start called: GMA6\_35 (DQ), GMA6\_79 (DQ), Grayson\_217 (CB), Sitar\_20 (DE1),

Start 81:

- Found in 3 of 284 ( 1.1% ) of genes in pham
- Manual Annotations of this start: 2 of 268
- Called 66.7% of time when present



- Phage (with cluster) where this start called: AluminumJesus\_51 (EG), Blab\_51 (EG),

#### Start 82:

- Found in 14 of 284 ( 4.9% ) of genes in pham
- Manual Annotations of this start: 14 of 268
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Apricot\_54 (DN3), BigPaolini\_3 (A1), Colucci\_103 (AR), Crater\_54 (DN3), Dexes\_3 (A1), DrYang\_96 (AR), Finch\_155 (singleton), Gyzlar\_3 (A1), Licorice\_4 (A1), Phistory\_56 (DN1), PhorbesPhlower\_38 (DH), Seanderson\_3 (A1), Smairt\_2 (A1), Smeagol\_2 (A1),

#### Start 84:

- Found in 154 of 284 ( 54.2% ) of genes in pham
- Manual Annotations of this start: 146 of 268
- Called 95.5% of time when present
- Phage (with cluster) where this start called: ABU\_10 (B1), Adriana\_10 (B1), AltPhacts\_10 (B1), Anderson\_10 (B1), Badfish\_10 (B1), Barsten\_19 (DE1), Basato\_11 (B1), Bibwit\_19 (DE1), BlackStallion\_10 (B1), BlueHusk\_10 (B1), BobBob\_16 (DE1), Boehler\_10 (B1), Buckeye\_10 (B1), Cafasso\_94 (DZ), CamL\_10 (B1), Cannibal\_10 (B1), Caprice\_29 (S), Chah\_10 (B1), Charles1\_10 (B1), Charming\_16 (DE1), CheetO\_10 (B1), Chunky\_10 (B1), Cobra\_10 (B1), Colbert\_10 (B1), Compostia\_13 (B3), Craff\_10 (B1), Daka\_10 (B1), Dingo\_10 (B1), DirtJuice\_10 (B1), DoesntMatter\_10 (B1), Durga\_10 (B1), Emiris\_10 (B1), EmpTee\_10 (B1), Eremos\_10 (B1), Etaye\_10 (B1), Fang\_10 (B1), FluffyNinja\_10 (B1), Fosterous\_16 (DE1), Frankicide\_10 (B1), FriarPreacher\_10 (B1), Fringe\_10 (B1), Galadriel\_20 (DE1), GeneCoco\_10 (B1), Gophee\_10 (B1), Gyarad\_0010 (B1), HSavage\_10 (B1), Haimas\_10 (B1), Hamish\_10 (B1), Harvey\_10 (B1), Hertubise\_10 (B1), Hetaeria\_10 (B1), Horchata\_10 (B1), Inchworm\_10 (B1), Inverness\_10 (B1), Iridoclysis\_10 (B1), IsaacEli\_10 (B1), JacAttac\_10 (B1), JangoPhett\_10 (B1), KLucky39\_10 (B1), Kailash\_10 (B1), Katniss\_10 (B1), Keitabear\_20 (DE1), Keitherie\_10 (B1), Kikipoo\_10 (B1), KingVeVeVe\_10 (B1), KlimbOn\_10 (B1), Kloppinator\_10 (B1), Lasso\_10 (B1), LeeLot\_10 (B1), Lego3393\_10 (B1), Love\_20 (DE1), Lulwa\_10 (B1), Magic8\_10 (B1), Megatron\_10 (B1), Melc17\_10 (B1), Mesh1\_10 (B1), Mikota\_10 (B1), MiniBoss\_10 (B1), Morty\_10 (B1), Murdoc\_10 (B1), Nacho\_0010 (B1), Newman\_10 (B1), Nicole21\_10 (B1), Nordenberg\_13 (DE1), Numberten\_10 (B1), OSmaximus\_10 (B1), Olive\_10 (B1), OliverWalter\_10 (B1), Omniscient\_10 (B1), Oosterbaan\_10 (B1), Orion\_10 (B1), PG1\_10 (B1), Paries\_19 (DE1), Phamished\_10 (B1), PhatCats2014\_10 (B1), PhatLouie\_10 (B1), Pherdinand\_10 (B1), Phipps\_10 (B1), PhrodoBaggins\_105 (B1), Phunky\_10 (B1), Pipsqueak\_10 (B1), Plmatters\_10 (B1), Podrick\_10 (B1), Pops\_10 (B1), Prickles\_10 (B1), ProfessorX\_10 (B1), Puhltonio\_10 (B1), QueenBeane\_10 (B1), Riggan\_10 (B1), Roliet\_10 (B1), Roscoe\_11 (B1), SDcharge11\_10 (B1), Samaymay\_10 (B1), Scoot17C\_10 (B1), Serendipity\_10 (B1), Serpentine\_0010 (B1), Sheila\_10 (B1), ShiVal\_10 (B1), Sigman\_10 (B1), Skippy\_10 (B1), Slatt\_10 (B1), Soto\_10 (B1), Spartan300\_10 (B1), Suffolk\_10 (B1), Surely\_10 (B1), Swish\_10 (B1), Tangent\_16 (DE1), Thora\_10 (B1), ThreeOh3D2\_10 (B1), TomBombadil\_10 (B1), Tomlarah\_10 (B1), Tooj\_10 (B1), Trypo\_10 (B1), UAch1\_10 (B1), Usavi\_10 (B1), Valjean\_10 (B1), Virapocalypse\_10 (B1), Vista\_10 (B1), Vivaldi\_10 (B1), Waterdiva\_10 (B1), Weher20\_10 (B1), YorkOnyx\_19 (DE1), Yoshand\_10 (B1), YouGoGlencoco\_10 (B1), Zaider\_11 (B1), Zelda\_10 (B1), Zonia\_10 (B1),

#### Start 85:

- Found in 1 of 284 ( 0.4% ) of genes in pham

- Manual Annotations of this start: 1 of 268
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Finch\_154 (singleton),

#### Start 86:

- Found in 4 of 284 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 1 of 268
- Called 25.0% of time when present
- Phage (with cluster) where this start called: KBurrousTX\_96 (AR),

#### Start 87:

- Found in 21 of 284 ( 7.4% ) of genes in pham
- Manual Annotations of this start: 14 of 268
- Called 76.2% of time when present
- Phage (with cluster) where this start called: CMP1\_50 (singleton), Chipper1996\_1010 (AR), Chocolat\_100 (AR), Chubster\_100 (AR), EdgarPoe\_100 (AR), HumptyDumpty\_100 (AR), JaNo\_99 (AR), Kabreeze\_100 (AR), Linus\_100 (AR), Lymara\_98 (AR), Mordred\_100 (AR), PrincessTrina\_101 (AR), RosiePosie\_100 (AR), SadLad\_28 (EG), Scavito\_101 (AR), Tophat\_101 (AR),

#### Start 88:

- Found in 24 of 284 ( 8.5% ) of genes in pham
- Manual Annotations of this start: 23 of 268
- Called 95.8% of time when present
- Phage (with cluster) where this start called: Breeniome\_140 (C1), Burrough\_141 (C1), Bxz1\_138 (C1), Cali\_136 (C1), Cane17\_133 (C1), CharlieB\_138 (C1), ChickenPhender\_137 (C1), Fludd\_142 (C1), HyRo\_132 (C1), Jessibeth14\_140 (C1), Koguma\_138 (C1), LRRHood\_134 (C1), LolaVinca\_141 (C1), Lukilu\_131 (C1), Mangeria\_141 (C1), MikeLiesIn\_142 (C1), Phox\_138 (C1), Pio\_145 (C1), Rabinovish\_140 (C1), Shaqnato\_134 (C1), Shelob\_143 (C1), Shifa\_130 (C1), Teardrop\_140 (C1),

#### Start 91:

- Found in 1 of 284 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 268
- Called 100.0% of time when present
- Phage (with cluster) where this start called: GageAP\_46 (A1),

#### Start 95:

- Found in 1 of 284 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: CN1A\_67 (singleton),

#### Start 98:

- Found in 2 of 284 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 268
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Footloose\_54 (singleton),

#### Start 100:

- Found in 17 of 284 ( 6.0% ) of genes in pham
- Manual Annotations of this start: 2 of 268

- Called 11.8% of time when present
- Phage (with cluster) where this start called: Kroos\_19 (DE1), Rofo\_18 (DE1),

Start 101:

- Found in 4 of 284 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 268
- Called 75.0% of time when present
- Phage (with cluster) where this start called: BenchScraper\_69 (AY), Faja\_72 (AY), Hestia\_63 (AY),

Start 105:

- Found in 1 of 284 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: RomansRevenge\_74 (singleton),

Start 109:

- Found in 4 of 284 ( 1.4% ) of genes in pham
- Manual Annotations of this start: 2 of 268
- Called 75.0% of time when present
- Phage (with cluster) where this start called: Bmoc\_167 (BE1), Persimmon\_162 (BE1), WhereRU\_166 (BE1),

Start 111:

- Found in 2 of 284 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 2 of 268
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Tucker\_41 (A6), Zulu\_41 (A6),

Start 123:

- Found in 1 of 284 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 268
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Samy\_46 (singleton),

Start 127:

- Found in 1 of 284 ( 0.4% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: REQ3\_10 (singleton),

### **Summary by clusters:**

There are 31 clusters represented in this pham: singleton, DH, CZ2, CZ3, DD, CZ1, BP, DQ, A1, BD4, DN1, DN3, A6, BD1, C1, CY1, CB, EG, J, CZ, S, AR, AY, DE1, B1, B3, DZ, BE1, BC1, BC2, BC3,

Info for manual annotations of cluster A1:

- Start number 82 was manually annotated 7 times for cluster A1.
- Start number 91 was manually annotated 1 time for cluster A1.

Info for manual annotations of cluster A6:

- Start number 111 was manually annotated 2 times for cluster A6.

Info for manual annotations of cluster AR:

- Start number 82 was manually annotated 2 times for cluster AR.
- Start number 86 was manually annotated 1 time for cluster AR.
- Start number 87 was manually annotated 13 times for cluster AR.

Info for manual annotations of cluster AY:

- Start number 101 was manually annotated 2 times for cluster AY.

Info for manual annotations of cluster B1:

- Start number 84 was manually annotated 132 times for cluster B1.

Info for manual annotations of cluster B3:

- Start number 84 was manually annotated 1 time for cluster B3.

Info for manual annotations of cluster BC1:

- Start number 71 was manually annotated 1 time for cluster BC1.
- Start number 73 was manually annotated 3 times for cluster BC1.
- Start number 74 was manually annotated 1 time for cluster BC1.

Info for manual annotations of cluster BC2:

- Start number 71 was manually annotated 2 times for cluster BC2.

Info for manual annotations of cluster BC3:

- Start number 61 was manually annotated 2 times for cluster BC3.
- Start number 79 was manually annotated 2 times for cluster BC3.

Info for manual annotations of cluster BD1:

- Start number 78 was manually annotated 1 time for cluster BD1.

Info for manual annotations of cluster BD4:

- Start number 78 was manually annotated 1 time for cluster BD4.

Info for manual annotations of cluster BE1:

- Start number 109 was manually annotated 2 times for cluster BE1.

Info for manual annotations of cluster BP:

- Start number 63 was manually annotated 8 times for cluster BP.

Info for manual annotations of cluster C1:

- Start number 88 was manually annotated 23 times for cluster C1.

Info for manual annotations of cluster CB:

- Start number 80 was manually annotated 1 time for cluster CB.

Info for manual annotations of cluster CY1:

- Start number 75 was manually annotated 5 times for cluster CY1.

Info for manual annotations of cluster CZ:

- Start number 67 was manually annotated 1 time for cluster CZ.

Info for manual annotations of cluster CZ1:

- Start number 75 was manually annotated 1 time for cluster CZ1.

Info for manual annotations of cluster CZ2:

- Start number 75 was manually annotated 1 time for cluster CZ2.

Info for manual annotations of cluster CZ3:

- Start number 75 was manually annotated 1 time for cluster CZ3.

Info for manual annotations of cluster DD:

- Start number 70 was manually annotated 1 time for cluster DD.

Info for manual annotations of cluster DE1:

- Start number 54 was manually annotated 5 times for cluster DE1.
- Start number 60 was manually annotated 11 times for cluster DE1.
- Start number 75 was manually annotated 2 times for cluster DE1.
- Start number 80 was manually annotated 1 time for cluster DE1.
- Start number 84 was manually annotated 12 times for cluster DE1.
- Start number 100 was manually annotated 2 times for cluster DE1.

Info for manual annotations of cluster DH:

- Start number 82 was manually annotated 1 time for cluster DH.

Info for manual annotations of cluster DN1:

- Start number 82 was manually annotated 1 time for cluster DN1.

Info for manual annotations of cluster DN3:

- Start number 82 was manually annotated 2 times for cluster DN3.

Info for manual annotations of cluster DZ:

- Start number 84 was manually annotated 1 time for cluster DZ.

Info for manual annotations of cluster EG:

- Start number 62 was manually annotated 1 time for cluster EG.
- Start number 81 was manually annotated 2 times for cluster EG.
- Start number 87 was manually annotated 1 time for cluster EG.

Info for manual annotations of cluster J:

- Start number 58 was manually annotated 2 times for cluster J.
- Start number 68 was manually annotated 1 time for cluster J.

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

Gene: ABU\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for ABU\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Adriana\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Adriana\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Affeca\_48 Start: 42397, Stop: 42915, Start Num: 60  
Candidate Starts for Affeca\_48:  
(50, 42385), (Start: 60 @42397 has 11 MA's), (141, 42613), (164, 42703), (166, 42715),

Gene: Ailee\_47 Start: 42002, Stop: 42520, Start Num: 60  
Candidate Starts for Ailee\_47:  
(50, 41990), (Start: 54 @41999 has 5 MA's), (Start: 60 @42002 has 11 MA's), (141, 42218), (164, 42308), (166, 42320),

Gene: AltPhacts\_10 Start: 8944, Stop: 9378, Start Num: 84  
Candidate Starts for AltPhacts\_10:  
(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: AluminumJesus\_51 Start: 40979, Stop: 40554, Start Num: 81  
Candidate Starts for AluminumJesus\_51:  
(Start: 81 @40979 has 2 MA's), (142, 40811), (166, 40709), (199, 40625),

Gene: Anderson\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Anderson\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Angelicage\_48 Start: 42812, Stop: 43333, Start Num: 54  
Candidate Starts for Angelicage\_48:  
(50, 42803), (Start: 54 @42812 has 5 MA's), (Start: 60 @42815 has 11 MA's), (141, 43031), (164, 43121), (166, 43133),

Gene: Apricot\_54 Start: 35119, Stop: 35568, Start Num: 82  
Candidate Starts for Apricot\_54:  
(Start: 54 @35038 has 5 MA's), (Start: 82 @35119 has 14 MA's), (116, 35191), (144, 35287), (153, 35323), (197, 35452), (216, 35557),

Gene: Ariel\_165 Start: 84168, Stop: 84737, Start Num: 58  
Candidate Starts for Ariel\_165:  
(Start: 58 @84168 has 2 MA's), (Start: 68 @84210 has 1 MA's), (77, 84225), (151, 84447), (164, 84504), (170, 84525),

Gene: Austintatious\_42 Start: 27716, Stop: 28177, Start Num: 79  
Candidate Starts for Austintatious\_42:  
(17, 27290), (18, 27320), (34, 27539), (Start: 79 @27716 has 2 MA's), (159, 27980), (163, 28001), (190, 28064),

Gene: AxeJC\_43 Start: 29903, Stop: 30394, Start Num: 63  
Candidate Starts for AxeJC\_43:  
(Start: 63 @29903 has 8 MA's), (159, 30155), (162, 30170),

Gene: Baddon\_49 Start: 43084, Stop: 43602, Start Num: 60  
Candidate Starts for Baddon\_49:  
(Start: 60 @43084 has 11 MA's), (69, 43114), (141, 43300), (164, 43390), (166, 43402), (218, 43597),

Gene: Badfish\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Badfish\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Barsten\_19 Start: 14612, Stop: 15058, Start Num: 84

Candidate Starts for Barsten\_19:

(Start: 75 @14591 has 10 MA's), (Start: 80 @14603 has 2 MA's), (Start: 84 @14612 has 146 MA's), (Start: 100 @14642 has 2 MA's), (104, 14651), (153, 14822), (159, 14855), (169, 14897), (182, 14918), (195, 14963),

Gene: Basato\_11 Start: 9177, Stop: 9611, Start Num: 84

Candidate Starts for Basato\_11:

(Start: 84 @9177 has 146 MA's), (103, 9216), (115, 9240), (136, 9321), (159, 9411), (182, 9474),

Gene: BaxterFox\_65 Start: 44276, Stop: 44731, Start Num: 75

Candidate Starts for BaxterFox\_65:

(47, 44204), (48, 44207), (Start: 75 @44276 has 10 MA's), (83, 44288), (131, 44417), (139, 44453), (169, 44570), (173, 44579),

Gene: BenchScraper\_69 Start: 37083, Stop: 37535, Start Num: 101

Candidate Starts for BenchScraper\_69:

(Start: 86 @37047 has 1 MA's), (Start: 87 @37053 has 14 MA's), (Start: 101 @37083 has 2 MA's), (207, 37479),

Gene: Bibwit\_48 Start: 41643, Stop: 42161, Start Num: 60

Candidate Starts for Bibwit\_48:

(Start: 60 @41643 has 11 MA's), (69, 41673), (141, 41859), (164, 41949), (166, 41961),

Gene: Bibwit\_19 Start: 14856, Stop: 15302, Start Num: 84

Candidate Starts for Bibwit\_19:

(Start: 75 @14835 has 10 MA's), (Start: 80 @14847 has 2 MA's), (Start: 84 @14856 has 146 MA's), (Start: 100 @14886 has 2 MA's), (104, 14895), (153, 15066), (159, 15099), (169, 15141), (182, 15162), (195, 15207), (202, 15243),

Gene: BigPaolini\_3 Start: 1128, Stop: 1637, Start Num: 82

Candidate Starts for BigPaolini\_3:

(Start: 82 @1128 has 14 MA's), (152, 1323), (153, 1332), (162, 1368), (217, 1590),

Gene: Bioscum\_45 Start: 29978, Stop: 30484, Start Num: 61

Candidate Starts for Bioscum\_45:

(Start: 61 @29978 has 2 MA's), (Start: 79 @30014 has 2 MA's), (164, 30272), (169, 30290), (181, 30311),

Gene: Blab\_51 Start: 40826, Stop: 40401, Start Num: 81

Candidate Starts for Blab\_51:

(19, 41177), (22, 41099), (Start: 81 @40826 has 2 MA's), (142, 40658), (166, 40556), (199, 40472),

Gene: BlackStallion\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for BlackStallion\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: BlueHusk\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for BlueHusk\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Bmoc\_167 Start: 91666, Stop: 92031, Start Num: 109

Candidate Starts for Bmoc\_167:

(Start: 109 @91666 has 2 MA's), (129, 91735), (156, 91822), (179, 91888),

Gene: BobBob\_16 Start: 13466, Stop: 13912, Start Num: 84

Candidate Starts for BobBob\_16:

(Start: 75 @13445 has 10 MA's), (Start: 80 @13457 has 2 MA's), (Start: 84 @13466 has 146 MA's), (Start: 100 @13496 has 2 MA's), (104, 13505), (153, 13676), (159, 13709), (169, 13751), (182, 13772), (195, 13817), (202, 13853),

Gene: Boehler\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Boehler\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Breeniome\_140 Start: 81159, Stop: 81575, Start Num: 88

Candidate Starts for Breeniome\_140:

(15, 80682), (Start: 88 @81159 has 23 MA's), (116, 81216), (132, 81279), (152, 81348), (162, 81393), (174, 81432),

Gene: Buckeye\_10 Start: 8945, Stop: 9379, Start Num: 84

Candidate Starts for Buckeye\_10:

(Start: 84 @8945 has 146 MA's), (103, 8984), (115, 9008), (136, 9089), (159, 9179), (182, 9242),

Gene: Burrough\_141 Start: 83310, Stop: 83726, Start Num: 88

Candidate Starts for Burrough\_141:

(15, 82833), (Start: 88 @83310 has 23 MA's), (116, 83367), (132, 83430), (152, 83499), (162, 83544), (174, 83583),

Gene: Bxz1\_138 Start: 84513, Stop: 84929, Start Num: 88

Candidate Starts for Bxz1\_138:

(15, 84036), (Start: 88 @84513 has 23 MA's), (116, 84570), (132, 84633), (152, 84702), (162, 84747), (174, 84786),

Gene: CMP1\_50 Start: 47245, Stop: 46814, Start Num: 87

Candidate Starts for CMP1\_50:

(Start: 87 @47245 has 14 MA's), (104, 47212), (143, 47098), (161, 47044), (209, 46864),

Gene: CN1A\_74 Start: 54320, Stop: 53856, Start Num: 64

Candidate Starts for CN1A\_74:

(64, 54320), (Start: 81 @54290 has 2 MA's), (142, 54131),

Gene: CN1A\_67 Start: 52198, Stop: 51770, Start Num: 95

Candidate Starts for CN1A\_67:

(43, 52336), (89, 52210), (95, 52198), (107, 52174), (139, 52066), (159, 51991), (200, 51853), (212, 51781),

Gene: Cafasso\_94 Start: 55360, Stop: 55818, Start Num: 84

Candidate Starts for Cafasso\_94:

(49, 55264), (Start: 84 @55360 has 146 MA's), (113, 55423), (164, 55645), (169, 55663),

Gene: Cali\_136 Start: 83312, Stop: 83728, Start Num: 88

Candidate Starts for Cali\_136:

(15, 82835), (Start: 88 @83312 has 23 MA's), (116, 83369), (132, 83432), (152, 83501), (162, 83546), (174, 83585),



Gene: CamL\_10 Start: 8940, Stop: 9374, Start Num: 84  
Candidate Starts for CamL\_10:  
(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Cane17\_133 Start: 84174, Stop: 84590, Start Num: 88  
Candidate Starts for Cane17\_133:  
(15, 83697), (Start: 88 @84174 has 23 MA's), (116, 84231), (132, 84294), (152, 84363), (162, 84408),  
(174, 84447),

Gene: Cannibal\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Cannibal\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Caprice\_29 Start: 9273, Stop: 9845, Start Num: 84  
Candidate Starts for Caprice\_29:  
(Start: 84 @9273 has 146 MA's), (Start: 87 @9282 has 14 MA's), (126, 9402), (131, 9417), (145, 9474), (159, 9552), (189, 9645),

Gene: Chah\_10 Start: 8941, Stop: 9375, Start Num: 84  
Candidate Starts for Chah\_10:  
(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Charles1\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Charles1\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: CharlieB\_138 Start: 82195, Stop: 82611, Start Num: 88  
Candidate Starts for CharlieB\_138:  
(15, 81718), (Start: 88 @82195 has 23 MA's), (116, 82252), (132, 82315), (152, 82384), (162, 82429),  
(174, 82468),

Gene: Charming\_16 Start: 13468, Stop: 13914, Start Num: 84  
Candidate Starts for Charming\_16:  
(Start: 75 @13447 has 10 MA's), (Start: 80 @13459 has 2 MA's), (Start: 84 @13468 has 146 MA's),  
(Start: 100 @13498 has 2 MA's), (104, 13507), (153, 13678), (159, 13711), (169, 13753), (182, 13774), (195, 13819), (202, 13855),

Gene: CheetO\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for CheetO\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: ChickenPhender\_137 Start: 81501, Stop: 81917, Start Num: 88  
Candidate Starts for ChickenPhender\_137:  
(15, 81024), (Start: 88 @81501 has 23 MA's), (116, 81558), (132, 81621), (152, 81690), (162, 81735),  
(174, 81774),

Gene: Chipper1996\_1010 Start: 63867, Stop: 64361, Start Num: 87  
Candidate Starts for Chipper1996\_1010:  
(48, 63759), (Start: 60 @63798 has 11 MA's), (Start: 87 @63867 has 14 MA's), (119, 63951), (139, 64023), (150, 64062), (213, 64332),

Gene: Chocolat\_100 Start: 63574, Stop: 64068, Start Num: 87  
Candidate Starts for Chocolat\_100:

(48, 63466), (Start: 60 @63505 has 11 MA's), (Start: 87 @63574 has 14 MA's), (119, 63658), (139, 63730), (150, 63769), (213, 64039),

Gene: Chubster\_100 Start: 63814, Stop: 64308, Start Num: 87

Candidate Starts for Chubster\_100:

(48, 63706), (Start: 60 @63745 has 11 MA's), (Start: 87 @63814 has 14 MA's), (119, 63898), (139, 63970), (150, 64009), (213, 64279),

Gene: Chunky\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Chunky\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Cobra\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Cobra\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Colbert\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Colbert\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Colucci\_103 Start: 64172, Stop: 64684, Start Num: 82

Candidate Starts for Colucci\_103:

(Start: 82 @64172 has 14 MA's), (119, 64262), (138, 64316), (167, 64463), (171, 64472), (176, 64481), (210, 64610),

Gene: Compostia\_13 Start: 10667, Stop: 11107, Start Num: 84

Candidate Starts for Compostia\_13:

(Start: 84 @10667 has 146 MA's), (157, 10889), (164, 10919), (169, 10937), (216, 11102),

Gene: Courthouse\_162 Start: 84612, Stop: 85181, Start Num: 58

Candidate Starts for Courthouse\_162:

(Start: 58 @84612 has 2 MA's), (Start: 68 @84654 has 1 MA's), (77, 84669), (151, 84891), (164, 84948), (170, 84969),

Gene: Craff\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Craff\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Crater\_54 Start: 35514, Stop: 35963, Start Num: 82

Candidate Starts for Crater\_54:

(Start: 54 @35433 has 5 MA's), (Start: 82 @35514 has 14 MA's), (116, 35586), (144, 35682), (153, 35718), (197, 35847), (216, 35952),

Gene: Cumberbatch\_45 Start: 30201, Stop: 30692, Start Num: 63

Candidate Starts for Cumberbatch\_45:

(Start: 63 @30201 has 8 MA's), (159, 30453), (162, 30468),

Gene: Daka\_10 Start: 8946, Stop: 9380, Start Num: 84

Candidate Starts for Daka\_10:

(Start: 84 @8946 has 146 MA's), (103, 8985), (115, 9009), (136, 9090), (159, 9180), (182, 9243),

Gene: Darolandstone\_43 Start: 33080, Stop: 33595, Start Num: 71

Candidate Starts for Darolandstone\_43:

(26, 32861), (44, 32987), (Start: 71 @33080 has 3 MA's), (93, 33119), (166, 33359),

Gene: Dexes\_3 Start: 1113, Stop: 1622, Start Num: 82

Candidate Starts for Dexes\_3:

(Start: 82 @1113 has 14 MA's), (152, 1308), (153, 1317), (162, 1353), (217, 1575),

Gene: Dingo\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Dingo\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: DirtJuice\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for DirtJuice\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: DoesntMatter\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for DoesntMatter\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: DrYang\_96 Start: 63051, Stop: 63563, Start Num: 82

Candidate Starts for DrYang\_96:

(Start: 82 @63051 has 14 MA's), (119, 63141), (137, 63192), (167, 63342), (171, 63351), (200, 63438),

Gene: Durga\_10 Start: 8957, Stop: 9391, Start Num: 84

Candidate Starts for Durga\_10:

(Start: 84 @8957 has 146 MA's), (103, 8996), (115, 9020), (136, 9101), (159, 9191), (182, 9254),

Gene: EMSquaredA\_63 Start: 42816, Stop: 43277, Start Num: 75

Candidate Starts for EMSquaredA\_63:

(33, 42666), (35, 42669), (47, 42744), (48, 42747), (Start: 75 @42816 has 10 MA's), (Start: 80 @42822 has 2 MA's), (116, 42903), (140, 42999), (169, 43116),

Gene: Eastland\_44 Start: 30161, Stop: 30652, Start Num: 63

Candidate Starts for Eastland\_44:

(Start: 63 @30161 has 8 MA's), (159, 30413), (162, 30428),

Gene: EdgarPoe\_100 Start: 63731, Stop: 64225, Start Num: 87

Candidate Starts for EdgarPoe\_100:

(48, 63623), (Start: 60 @63662 has 11 MA's), (Start: 87 @63731 has 14 MA's), (119, 63815), (139, 63887), (150, 63926), (213, 64196),

Gene: Eklok\_44 Start: 29960, Stop: 30451, Start Num: 63

Candidate Starts for Eklok\_44:

(Start: 63 @29960 has 8 MA's), (159, 30212), (162, 30227),

Gene: Emiris\_10 Start: 8944, Stop: 9378, Start Num: 84

Candidate Starts for Emiris\_10:

(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: EmpTee\_10 Start: 8944, Stop: 9378, Start Num: 84

Candidate Starts for EmpTee\_10:

(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: EnalisNailo\_59 Start: 42622, Stop: 43077, Start Num: 75

Candidate Starts for EnalisNailo\_59:

(36, 42490), (37, 42493), (47, 42550), (48, 42553), (Start: 75 @42622 has 10 MA's), (Start: 80 @42628 has 2 MA's), (Start: 88 @42649 has 23 MA's), (116, 42706), (131, 42763), (139, 42799), (169, 42916), (173, 42925), (195, 42985),

Gene: Eremos\_10 Start: 8937, Stop: 9371, Start Num: 84

Candidate Starts for Eremos\_10:

(Start: 84 @8937 has 146 MA's), (103, 8976), (115, 9000), (136, 9081), (159, 9171), (182, 9234),

Gene: Etaye\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Etaye\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Faja\_72 Start: 38688, Stop: 39140, Start Num: 101

Candidate Starts for Faja\_72:

(41, 38511), (Start: 86 @38652 has 1 MA's), (Start: 87 @38658 has 14 MA's), (Start: 101 @38688 has 2 MA's), (207, 39084),

Gene: Fang\_10 Start: 8944, Stop: 9378, Start Num: 84

Candidate Starts for Fang\_10:

(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: Finch\_155 Start: 99620, Stop: 100087, Start Num: 82

Candidate Starts for Finch\_155:

(55, 99545), (Start: 82 @99620 has 14 MA's), (137, 99755), (153, 99824), (159, 99845), (164, 99869), (200, 99977), (204, 99995), (211, 100046),

Gene: Finch\_154 Start: 99144, Stop: 99620, Start Num: 85

Candidate Starts for Finch\_154:

(Start: 85 @99144 has 1 MA's), (108, 99192), (159, 99372), (188, 99462), (193, 99477), (214, 99588),

Gene: Finch\_57 Start: 47485, Stop: 47922, Start Num: 78

Candidate Starts for Finch\_57:

(Start: 78 @47485 has 3 MA's), (Start: 84 @47497 has 146 MA's), (106, 47542), (143, 47668), (152, 47695), (154, 47713), (174, 47779), (192, 47824), (205, 47881), (206, 47884),

Gene: Floral\_64 Start: 44701, Stop: 45162, Start Num: 75

Candidate Starts for Floral\_64:

(33, 44551), (35, 44554), (47, 44629), (48, 44632), (Start: 75 @44701 has 10 MA's), (Start: 80 @44707 has 2 MA's), (116, 44788), (140, 44884), (169, 45001),

Gene: Fludd\_142 Start: 82309, Stop: 82725, Start Num: 88

Candidate Starts for Fludd\_142:

(15, 81832), (Start: 88 @82309 has 23 MA's), (116, 82366), (132, 82429), (152, 82498), (162, 82543), (174, 82582),

Gene: FluffyNinja\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for FluffyNinja\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Footloose\_54 Start: 31404, Stop: 31829, Start Num: 98

Candidate Starts for Footloose\_54:

(39, 31218), (51, 31281), (Start: 98 @31404 has 1 MA's), (132, 31515), (135, 31530), (177, 31677), (180, 31680), (211, 31818),

Gene: Fosterous\_16 Start: 14357, Stop: 14803, Start Num: 84

Candidate Starts for Fosterous\_16:

(Start: 75 @14336 has 10 MA's), (Start: 80 @14348 has 2 MA's), (Start: 84 @14357 has 146 MA's), (Start: 100 @14387 has 2 MA's), (104, 14396), (153, 14567), (159, 14600), (169, 14642), (182, 14663), (195, 14708), (202, 14744),

Gene: Frankicide\_10 Start: 8945, Stop: 9379, Start Num: 84

Candidate Starts for Frankicide\_10:

(Start: 84 @8945 has 146 MA's), (103, 8984), (115, 9008), (136, 9089), (159, 9179), (182, 9242),

Gene: Fransoyer\_69 Start: 49557, Stop: 49093, Start Num: 62

Candidate Starts for Fransoyer\_69:

(46, 49611), (Start: 62 @49557 has 1 MA's), (122, 49434), (165, 49263), (170, 49248), (175, 49242),

Gene: FriarPreacher\_10 Start: 8946, Stop: 9380, Start Num: 84

Candidate Starts for FriarPreacher\_10:

(Start: 84 @8946 has 146 MA's), (103, 8985), (115, 9009), (136, 9090), (159, 9180), (182, 9243),

Gene: Fringe\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for Fringe\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: GMA6\_79 Start: 60811, Stop: 61245, Start Num: 80

Candidate Starts for GMA6\_79:

(Start: 80 @60811 has 2 MA's), (Start: 98 @60850 has 1 MA's), (114, 60892), (131, 60946), (135, 60967), (158, 61051), (162, 61072),

Gene: GMA6\_35 Start: 29073, Stop: 29516, Start Num: 80

Candidate Starts for GMA6\_35:

(72, 29058), (Start: 80 @29073 has 2 MA's), (Start: 84 @29082 has 146 MA's), (Start: 101 @29121 has 2 MA's), (113, 29145), (143, 29274), (147, 29286), (148, 29289), (151, 29301), (187, 29424),

Gene: GageAP\_46 Start: 34874, Stop: 34401, Start Num: 91

Candidate Starts for GageAP\_46:

(Start: 91 @34874 has 1 MA's), (97, 34859), (121, 34787), (124, 34772), (140, 34709), (152, 34670), (164, 34616), (183, 34574), (191, 34538), (201, 34484),

Gene: Galadriel\_20 Start: 14216, Stop: 14662, Start Num: 84

Candidate Starts for Galadriel\_20:

(Start: 75 @14195 has 10 MA's), (Start: 80 @14207 has 2 MA's), (Start: 84 @14216 has 146 MA's), (Start: 100 @14246 has 2 MA's), (104, 14255), (153, 14426), (159, 14459), (169, 14501), (182, 14522), (195, 14567), (202, 14603),

Gene: GeneCoco\_10 Start: 8949, Stop: 9383, Start Num: 84

Candidate Starts for GeneCoco\_10:

(Start: 84 @8949 has 146 MA's), (103, 8988), (115, 9012), (136, 9093), (159, 9183), (182, 9246),

Gene: Gophee\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Gophee\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Grayson\_217 Start: 108140, Stop: 108661, Start Num: 80

Candidate Starts for Grayson\_217:

(65, 108113), (Start: 67 @108119 has 1 MA's), (Start: 80 @108140 has 2 MA's), (117, 108236), (141, 108338), (147, 108356), (149, 108365), (150, 108368), (208, 108605),

Gene: Gustavo\_49 Start: 42016, Stop: 42534, Start Num: 60

Candidate Starts for Gustavo\_49:

(Start: 60 @42016 has 11 MA's), (69, 42046), (141, 42232), (164, 42322), (166, 42334), (218, 42529),

Gene: Gyarad\_0010 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Gyarad\_0010:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Gyzlar\_3 Start: 1073, Stop: 1582, Start Num: 82

Candidate Starts for Gyzlar\_3:

(Start: 82 @1073 has 14 MA's), (152, 1268), (153, 1277), (162, 1313), (217, 1535),

Gene: HFrancette\_45 Start: 30939, Stop: 31430, Start Num: 63

Candidate Starts for HFrancette\_45:

(Start: 63 @30939 has 8 MA's), (159, 31191), (162, 31206),

Gene: HSavage\_10 Start: 8945, Stop: 9379, Start Num: 84

Candidate Starts for HSavage\_10:

(Start: 84 @8945 has 146 MA's), (103, 8984), (115, 9008), (136, 9089), (159, 9179), (182, 9242),

Gene: Haimas\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Haimas\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Hamish\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Hamish\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Harvey\_10 Start: 8944, Stop: 9378, Start Num: 84

Candidate Starts for Harvey\_10:

(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: Hertubise\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Hertubise\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Hestia\_63 Start: 34911, Stop: 35363, Start Num: 101

Candidate Starts for Hestia\_63:

(41, 34734), (Start: 86 @34875 has 1 MA's), (Start: 87 @34881 has 14 MA's), (Start: 101 @34911 has 2 MA's), (207, 35307),

Gene: Hetaeria\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Hetaeria\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Horchata\_10 Start: 8942, Stop: 9376, Start Num: 84

Candidate Starts for Horchata\_10:

(Start: 84 @8942 has 146 MA's), (103, 8981), (115, 9005), (136, 9086), (159, 9176), (182, 9239),

Gene: HumptyDumpty\_100 Start: 63534, Stop: 64028, Start Num: 87

Candidate Starts for HumptyDumpty\_100:

(48, 63426), (Start: 60 @63465 has 11 MA's), (Start: 87 @63534 has 14 MA's), (119, 63618), (139, 63690), (150, 63729), (213, 63999),

Gene: HyRo\_132 Start: 82234, Stop: 82650, Start Num: 88

Candidate Starts for HyRo\_132:

(15, 81757), (Start: 88 @82234 has 23 MA's), (116, 82291), (132, 82354), (152, 82423), (162, 82468), (174, 82507),

Gene: Hydra\_4 Start: 1342, Stop: 1785, Start Num: 78

Candidate Starts for Hydra\_4:

(Start: 78 @1342 has 3 MA's), (150, 1525), (159, 1561), (164, 1585), (185, 1630), (197, 1672),

Gene: Ididsumtinwong\_46 Start: 30014, Stop: 30484, Start Num: 79

Candidate Starts for Ididsumtinwong\_46:

(Start: 61 @29978 has 2 MA's), (Start: 79 @30014 has 2 MA's), (164, 30272), (169, 30290), (181, 30311),

Gene: Ignacio\_44 Start: 30842, Stop: 31333, Start Num: 63

Candidate Starts for Ignacio\_44:

(Start: 63 @30842 has 8 MA's), (159, 31094), (162, 31109),

Gene: Inchworm\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Inchworm\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Inverness\_10 Start: 8945, Stop: 9379, Start Num: 84

Candidate Starts for Inverness\_10:

(Start: 84 @8945 has 146 MA's), (103, 8984), (115, 9008), (136, 9089), (159, 9179), (182, 9242),

Gene: Iridoclysis\_10 Start: 8947, Stop: 9381, Start Num: 84

Candidate Starts for Iridoclysis\_10:

(Start: 84 @8947 has 146 MA's), (103, 8986), (115, 9010), (136, 9091), (159, 9181), (182, 9244),

Gene: IsaacEli\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for IsaacEli\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: JKSyngboy\_47 Start: 42615, Stop: 43133, Start Num: 60

Candidate Starts for JKSyngboy\_47:

(Start: 60 @42615 has 11 MA's), (69, 42645), (141, 42831), (164, 42921), (166, 42933), (218, 43128),

Gene: JaNo\_99 Start: 63505, Stop: 63999, Start Num: 87

Candidate Starts for JaNo\_99:

(48, 63397), (Start: 60 @63436 has 11 MA's), (Start: 87 @63505 has 14 MA's), (119, 63589), (139, 63661), (150, 63700), (213, 63970),

Gene: JacAttac\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for JacAttac\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: JangoPhett\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for JangoPhett\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Jessibeth14\_140 Start: 83080, Stop: 83496, Start Num: 88

Candidate Starts for Jessibeth14\_140:

(15, 82603), (Start: 88 @83080 has 23 MA's), (116, 83137), (132, 83200), (152, 83269), (162, 83314), (174, 83353),

Gene: KBurrousTX\_96 Start: 64281, Stop: 64742, Start Num: 86

Candidate Starts for KBurrousTX\_96:

(Start: 86 @64281 has 1 MA's), (96, 64299), (134, 64410), (155, 64503), (160, 64521), (162, 64536), (182, 64584),

Gene: KLucky39\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for KLucky39\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Kabreeze\_100 Start: 63591, Stop: 64085, Start Num: 87

Candidate Starts for Kabreeze\_100:

(48, 63483), (Start: 60 @63522 has 11 MA's), (Start: 87 @63591 has 14 MA's), (119, 63675), (139, 63747), (150, 63786), (213, 64056),

Gene: Kailash\_10 Start: 8952, Stop: 9386, Start Num: 84

Candidate Starts for Kailash\_10:

(Start: 84 @8952 has 146 MA's), (103, 8991), (115, 9015), (136, 9096), (159, 9186), (182, 9249),

Gene: Kamashten\_49 Start: 42108, Stop: 42626, Start Num: 60

Candidate Starts for Kamashten\_49:

(Start: 60 @42108 has 11 MA's), (141, 42324), (164, 42414), (166, 42426),

Gene: Katniss\_10 Start: 8944, Stop: 9378, Start Num: 84

Candidate Starts for Katniss\_10:

(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: Keitabear\_50 Start: 43627, Stop: 44148, Start Num: 54

Candidate Starts for Keitabear\_50:

(50, 43618), (Start: 54 @43627 has 5 MA's), (Start: 60 @43630 has 11 MA's), (141, 43846), (164, 43936), (166, 43948),

Gene: Keitabear\_20 Start: 16560, Stop: 17006, Start Num: 84

Candidate Starts for Keitabear\_20:

(Start: 75 @16539 has 10 MA's), (Start: 80 @16551 has 2 MA's), (Start: 84 @16560 has 146 MA's), (Start: 100 @16590 has 2 MA's), (104, 16599), (153, 16770), (159, 16803), (169, 16845), (182, 16866), (195, 16911), (202, 16947),

Gene: Keitherie\_10 Start: 8957, Stop: 9391, Start Num: 84

Candidate Starts for Keitherie\_10:

(Start: 84 @8957 has 146 MA's), (103, 8996), (115, 9020), (116, 9023), (136, 9101), (159, 9191), (182, 9254),

Gene: Kewpiedoll\_51 Start: 43059, Stop: 43577, Start Num: 60



Candidate Starts for Kewpiedoll\_51:

(50, 43047), (Start: 54 @43056 has 5 MA's), (Start: 60 @43059 has 11 MA's), (141, 43275), (164, 43365), (166, 43377),

Gene: Kikipoo\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Kikipoo\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: KingVeVeVe\_10 Start: 8944, Stop: 9378, Start Num: 84

Candidate Starts for KingVeVeVe\_10:

(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: KlimbOn\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for KlimbOn\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Kloppinator\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for Kloppinator\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Koguma\_138 Start: 80718, Stop: 81134, Start Num: 88

Candidate Starts for Koguma\_138:

(15, 80241), (Start: 88 @80718 has 23 MA's), (116, 80775), (132, 80838), (152, 80907), (162, 80952), (174, 80991),

Gene: Kroos\_19 Start: 14665, Stop: 15102, Start Num: 100

Candidate Starts for Kroos\_19:

(Start: 80 @14620 has 2 MA's), (Start: 84 @14629 has 146 MA's), (Start: 100 @14665 has 2 MA's), (118, 14716), (136, 14782), (169, 14926), (182, 14947),

Gene: Kwobi\_50 Start: 42725, Stop: 43243, Start Num: 60

Candidate Starts for Kwobi\_50:

(Start: 60 @42725 has 11 MA's), (69, 42755), (141, 42941), (164, 43031), (166, 43043),

Gene: LRRHood\_134 Start: 82526, Stop: 82942, Start Num: 88

Candidate Starts for LRRHood\_134:

(15, 82049), (Start: 88 @82526 has 23 MA's), (116, 82583), (132, 82646), (152, 82715), (162, 82760), (174, 82799),

Gene: Lasso\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Lasso\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: LeeLot\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for LeeLot\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Lego3393\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for Lego3393\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Lennon\_20 Start: 15643, Stop: 16110, Start Num: 75

Candidate Starts for Lennon\_20:

(Start: 75 @15643 has 10 MA's), (Start: 80 @15655 has 2 MA's), (Start: 84 @15664 has 146 MA's), (Start: 100 @15694 has 2 MA's), (104, 15703), (153, 15874), (159, 15907), (169, 15949), (182, 15970), (195, 16015), (202, 16051),

Gene: Lennon\_50 Start: 43707, Stop: 44228, Start Num: 54

Candidate Starts for Lennon\_50:

(50, 43698), (Start: 54 @43707 has 5 MA's), (Start: 60 @43710 has 11 MA's), (141, 43926), (164, 44016), (166, 44028),

Gene: Licorice\_4 Start: 1283, Stop: 1792, Start Num: 82

Candidate Starts for Licorice\_4:

(Start: 82 @1283 has 14 MA's), (152, 1478), (153, 1487), (162, 1523), (217, 1745),

Gene: Linus\_100 Start: 64039, Stop: 64533, Start Num: 87

Candidate Starts for Linus\_100:

(48, 63931), (Start: 60 @63970 has 11 MA's), (Start: 87 @64039 has 14 MA's), (119, 64123), (139, 64195), (150, 64234), (213, 64504),

Gene: LolaVince\_141 Start: 83494, Stop: 83910, Start Num: 88

Candidate Starts for LolaVince\_141:

(15, 83017), (Start: 88 @83494 has 23 MA's), (116, 83551), (132, 83614), (152, 83683), (162, 83728), (174, 83767),

Gene: Love\_20 Start: 14527, Stop: 14973, Start Num: 84

Candidate Starts for Love\_20:

(Start: 75 @14506 has 10 MA's), (Start: 80 @14518 has 2 MA's), (Start: 84 @14527 has 146 MA's), (Start: 100 @14557 has 2 MA's), (104, 14566), (153, 14737), (159, 14770), (169, 14812), (182, 14833), (195, 14878), (202, 14914),

Gene: Love\_55 Start: 44334, Stop: 44852, Start Num: 60

Candidate Starts for Love\_55:

(50, 44322), (Start: 54 @44331 has 5 MA's), (Start: 60 @44334 has 11 MA's), (141, 44550), (164, 44640), (166, 44652),

Gene: Lton\_30 Start: 23640, Stop: 24134, Start Num: 67

Candidate Starts for Lton\_30:

(Start: 67 @23640 has 1 MA's), (Start: 109 @23715 has 2 MA's), (112, 23721), (130, 23784), (162, 23916), (177, 23958), (184, 23973),

Gene: Lukilu\_131 Start: 83536, Stop: 83952, Start Num: 88

Candidate Starts for Lukilu\_131:

(15, 83059), (Start: 88 @83536 has 23 MA's), (116, 83593), (132, 83656), (152, 83725), (162, 83770), (174, 83809),

Gene: Lulwa\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Lulwa\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Lymara\_98 Start: 62394, Stop: 62876, Start Num: 87

Candidate Starts for Lymara\_98:

(32, 62202), (48, 62298), (Start: 87 @62394 has 14 MA's), (137, 62526),

Gene: Magic8\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Magic8\_10:  
(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Mangeria\_141 Start: 83337, Stop: 83753, Start Num: 88  
Candidate Starts for Mangeria\_141:  
(15, 82860), (Start: 88 @83337 has 23 MA's), (116, 83394), (132, 83457), (152, 83526), (162, 83571),  
(174, 83610),

Gene: Marteena\_62 Start: 42816, Stop: 43277, Start Num: 75  
Candidate Starts for Marteena\_62:  
(33, 42666), (35, 42669), (47, 42744), (48, 42747), (Start: 75 @42816 has 10 MA's), (Start: 80  
@42822 has 2 MA's), (116, 42903), (140, 42999), (169, 43116),

Gene: Matteo\_53 Start: 35852, Stop: 36313, Start Num: 75  
Candidate Starts for Matteo\_53:  
(33, 35702), (47, 35780), (48, 35783), (Start: 75 @35852 has 10 MA's), (Start: 80 @35858 has 2  
MA's), (116, 35939), (140, 36035), (169, 36152),

Gene: Megatron\_10 Start: 8940, Stop: 9374, Start Num: 84  
Candidate Starts for Megatron\_10:  
(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Melc17\_10 Start: 8940, Stop: 9374, Start Num: 84  
Candidate Starts for Melc17\_10:  
(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Mesh1\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Mesh1\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: MikeLiesIn\_142 Start: 83297, Stop: 83713, Start Num: 88  
Candidate Starts for MikeLiesIn\_142:  
(15, 82820), (Start: 88 @83297 has 23 MA's), (116, 83354), (132, 83417), (152, 83486), (162, 83531),  
(174, 83570),

Gene: Mikota\_10 Start: 8941, Stop: 9375, Start Num: 84  
Candidate Starts for Mikota\_10:  
(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: MiniBoss\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for MiniBoss\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Mojorita\_45 Start: 30760, Stop: 31281, Start Num: 73  
Candidate Starts for Mojorita\_45:  
(Start: 73 @30760 has 3 MA's), (169, 31048), (189, 31099), (197, 31132), (198, 31138), (203, 31168),

Gene: MoontowerMania\_50 Start: 43336, Stop: 43860, Start Num: 60  
Candidate Starts for MoontowerMania\_50:  
(57, 43324), (59, 43333), (Start: 60 @43336 has 11 MA's), (141, 43558), (164, 43648), (166, 43660),

Gene: Mordred\_100 Start: 63630, Stop: 64124, Start Num: 87  
Candidate Starts for Mordred\_100:

(48, 63522), (Start: 60 @63561 has 11 MA's), (Start: 87 @63630 has 14 MA's), (119, 63714), (139, 63786), (150, 63825), (213, 64095),

Gene: Morty\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Morty\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Murdoc\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Murdoc\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Nacho\_0010 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Nacho\_0010:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Neobush\_64 Start: 42273, Stop: 42734, Start Num: 75

Candidate Starts for Neobush\_64:

(52, 42207), (Start: 75 @42273 has 10 MA's), (131, 42420), (139, 42456), (146, 42483), (159, 42531), (169, 42573), (173, 42582), (195, 42642),

Gene: Newman\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Newman\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Nicole21\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for Nicole21\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Nordenberg\_13 Start: 12847, Stop: 13293, Start Num: 84

Candidate Starts for Nordenberg\_13:

(Start: 75 @12826 has 10 MA's), (Start: 80 @12838 has 2 MA's), (Start: 84 @12847 has 146 MA's), (Start: 100 @12877 has 2 MA's), (104, 12886), (153, 13057), (159, 13090), (169, 13132), (182, 13153), (195, 13198), (202, 13234),

Gene: Numberten\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Numberten\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: OSmaximus\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for OSmaximus\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Olive\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Olive\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: OliverWalter\_10 Start: 8939, Stop: 9373, Start Num: 84

Candidate Starts for OliverWalter\_10:

(Start: 84 @8939 has 146 MA's), (103, 8978), (115, 9002), (136, 9083), (159, 9173), (182, 9236),

Gene: Omniscient\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Omniscient\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Oosterbaan\_10 Start: 8944, Stop: 9378, Start Num: 84

Candidate Starts for Oosterbaan\_10:

(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: Orion\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for Orion\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: PG1\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for PG1\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: PapayaSalad\_44 Start: 30268, Stop: 30774, Start Num: 61

Candidate Starts for PapayaSalad\_44:

(Start: 61 @30268 has 2 MA's), (Start: 79 @30304 has 2 MA's), (164, 30562), (169, 30580), (181, 30601),

Gene: Paries\_19 Start: 14215, Stop: 14661, Start Num: 84

Candidate Starts for Paries\_19:

(Start: 75 @14194 has 10 MA's), (Start: 80 @14206 has 2 MA's), (Start: 84 @14215 has 146 MA's), (Start: 100 @14245 has 2 MA's), (104, 14254), (153, 14425), (159, 14458), (169, 14500), (182, 14521), (195, 14566), (202, 14602),

Gene: Persimmon\_162 Start: 90873, Stop: 91259, Start Num: 109

Candidate Starts for Persimmon\_162:

(90, 90837), (93, 90843), (Start: 109 @90873 has 2 MA's), (129, 90942), (156, 91029), (179, 91095),

Gene: Phamished\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Phamished\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: PhatCats2014\_10 Start: 8944, Stop: 9378, Start Num: 84

Candidate Starts for PhatCats2014\_10:

(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: PhatLouie\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for PhatLouie\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Pherdinand\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for Pherdinand\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Phipps\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Phipps\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Phistory\_56 Start: 36066, Stop: 36515, Start Num: 82

Candidate Starts for Phistory\_56:

(Start: 54 @35985 has 5 MA's), (Start: 82 @36066 has 14 MA's), (116, 36138), (144, 36234), (153, 36270), (197, 36399), (198, 36405), (216, 36504),

Gene: PhorbesPhlower\_38 Start: 28562, Stop: 29011, Start Num: 82  
Candidate Starts for PhorbesPhlower\_38:  
(Start: 54 @28481 has 5 MA's), (Start: 82 @28562 has 14 MA's), (144, 28730), (153, 28766), (197, 28895), (216, 29000),

Gene: Phox\_138 Start: 83560, Stop: 83976, Start Num: 88  
Candidate Starts for Phox\_138:  
(15, 83083), (Start: 88 @83560 has 23 MA's), (116, 83617), (132, 83680), (152, 83749), (162, 83794), (174, 83833),

Gene: PhrodoBaggins\_105 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for PhrodoBaggins\_105:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Phunky\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Phunky\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Picard\_45 Start: 30958, Stop: 31479, Start Num: 73  
Candidate Starts for Picard\_45:  
(Start: 73 @30958 has 3 MA's), (169, 31246), (198, 31336), (203, 31366), (215, 31432),

Gene: Piccadilly\_44 Start: 30160, Stop: 30651, Start Num: 63  
Candidate Starts for Piccadilly\_44:  
(Start: 63 @30160 has 8 MA's), (159, 30412), (162, 30427),

Gene: Pio\_145 Start: 85169, Stop: 85585, Start Num: 88  
Candidate Starts for Pio\_145:  
(15, 84692), (Start: 88 @85169 has 23 MA's), (116, 85226), (132, 85289), (152, 85358), (162, 85403), (174, 85442),

Gene: Pipsqueak\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Pipsqueak\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Plmatters\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Plmatters\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Podrick\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Podrick\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Pollux\_66 Start: 44701, Stop: 45162, Start Num: 75  
Candidate Starts for Pollux\_66:  
(33, 44551), (35, 44554), (47, 44629), (48, 44632), (Start: 75 @44701 has 10 MA's), (Start: 80 @44707 has 2 MA's), (116, 44788), (140, 44884), (169, 45001),

Gene: Pops\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Pops\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Prickles\_10 Start: 8949, Stop: 9383, Start Num: 84

Candidate Starts for Prickles\_10:

(Start: 84 @8949 has 146 MA's), (103, 8988), (115, 9012), (136, 9093), (159, 9183), (182, 9246),

Gene: PrincessTrina\_101 Start: 63821, Stop: 64315, Start Num: 87

Candidate Starts for PrincessTrina\_101:

(48, 63713), (Start: 60 @63752 has 11 MA's), (Start: 87 @63821 has 14 MA's), (119, 63905), (139, 63977), (150, 64016), (213, 64286),

Gene: ProfessorX\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for ProfessorX\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Puhltonio\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Puhltonio\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: QueenBeane\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for QueenBeane\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: REQ3\_10 Start: 4829, Stop: 5143, Start Num: 127

Candidate Starts for REQ3\_10:

(Start: 87 @4724 has 14 MA's), (92, 4733), (127, 4829), (128, 4835), (150, 4904), (153, 4919),

Gene: Rabinovish\_140 Start: 83892, Stop: 84308, Start Num: 88

Candidate Starts for Rabinovish\_140:

(15, 83415), (Start: 88 @83892 has 23 MA's), (116, 83949), (132, 84012), (152, 84081), (162, 84126), (174, 84165),

Gene: Raleigh\_43 Start: 33449, Stop: 33964, Start Num: 71

Candidate Starts for Raleigh\_43:

(Start: 71 @33449 has 3 MA's), (93, 33488), (166, 33728), (169, 33734),

Gene: Riggan\_10 Start: 8947, Stop: 9381, Start Num: 84

Candidate Starts for Riggan\_10:

(Start: 84 @8947 has 146 MA's), (103, 8986), (115, 9010), (136, 9091), (159, 9181), (182, 9244),

Gene: Rofo\_18 Start: 14497, Stop: 14928, Start Num: 100

Candidate Starts for Rofo\_18:

(Start: 75 @14446 has 10 MA's), (Start: 80 @14458 has 2 MA's), (Start: 84 @14467 has 146 MA's), (Start: 100 @14497 has 2 MA's), (104, 14506), (153, 14677), (159, 14710), (169, 14752), (182, 14773), (195, 14818), (202, 14854),

Gene: Roliet\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Roliet\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: RomansRevenge\_74 Start: 50908, Stop: 50471, Start Num: 105

Candidate Starts for RomansRevenge\_74:

(66, 50992), (Start: 71 @50983 has 3 MA's), (105, 50908), (147, 50743), (155, 50698), (190, 50596), (194, 50578), (198, 50560),

Gene: Roscoe\_11 Start: 9178, Stop: 9612, Start Num: 84

Candidate Starts for Roscoe\_11:

(Start: 84 @9178 has 146 MA's), (103, 9217), (115, 9241), (136, 9322), (159, 9412), (182, 9475),

Gene: RosiePosie\_100 Start: 63686, Stop: 64180, Start Num: 87

Candidate Starts for RosiePosie\_100:

(48, 63578), (Start: 60 @63617 has 11 MA's), (Start: 87 @63686 has 14 MA's), (119, 63770), (139, 63842), (144, 63860), (150, 63881),

Gene: SDcharge11\_10 Start: 8936, Stop: 9370, Start Num: 84

Candidate Starts for SDcharge11\_10:

(Start: 84 @8936 has 146 MA's), (103, 8975), (115, 8999), (136, 9080), (159, 9170), (182, 9233),

Gene: SV1\_42 Start: 29657, Stop: 30169, Start Num: 74

Candidate Starts for SV1\_42:

(Start: 74 @29657 has 1 MA's), (154, 29882), (186, 29981), (197, 30020), (198, 30026), (203, 30056),

Gene: SadLad\_28 Start: 14537, Stop: 14064, Start Num: 87

Candidate Starts for SadLad\_28:

(1, 15395), (2, 15374), (3, 15371), (4, 15356), (5, 15353), (6, 15335), (7, 15299), (8, 15278), (9, 15239), (10, 15185), (11, 15182), (12, 15173), (13, 15155), (14, 15065), (16, 15011), (18, 14957), (19, 14912), (20, 14870), (21, 14864), (23, 14822), (24, 14816), (25, 14798), (27, 14792), (28, 14780), (29, 14759), (30, 14756), (38, 14705), (40, 14693), (42, 14681), (45, 14660), (56, 14621), (76, 14564), (Start: 87 @14537 has 14 MA's), (135, 14405), (139, 14387), (155, 14321), (162, 14282), (168, 14258), (172, 14249), (198, 14168),

Gene: Samaymay\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Samaymay\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Samy\_46 Start: 31456, Stop: 31815, Start Num: 123

Candidate Starts for Samy\_46:

(Start: 123 @31456 has 1 MA's), (133, 31495), (139, 31516), (142, 31528), (150, 31555), (159, 31591), (162, 31606), (170, 31636),

Gene: Saronaya\_49 Start: 42016, Stop: 42534, Start Num: 60

Candidate Starts for Saronaya\_49:

(Start: 60 @42016 has 11 MA's), (69, 42046), (141, 42232), (164, 42322), (166, 42334), (218, 42529),

Gene: Scavito\_101 Start: 63679, Stop: 64173, Start Num: 87

Candidate Starts for Scavito\_101:

(48, 63571), (Start: 60 @63610 has 11 MA's), (Start: 87 @63679 has 14 MA's), (119, 63763), (139, 63835), (150, 63874), (213, 64144),

Gene: Scoot17C\_10 Start: 8944, Stop: 9378, Start Num: 84

Candidate Starts for Scoot17C\_10:

(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: Seanderson\_3 Start: 1096, Stop: 1605, Start Num: 82

Candidate Starts for Seanderson\_3:

(Start: 62 @1057 has 1 MA's), (Start: 82 @1096 has 14 MA's), (152, 1291), (153, 1300), (162, 1336), (217, 1558),

Gene: Sedona\_50 Start: 43310, Stop: 43828, Start Num: 60



Candidate Starts for Sedona\_50:

(Start: 60 @43310 has 11 MA's), (69, 43340), (141, 43526), (164, 43616), (166, 43628),

Gene: Serendipity\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Serendipity\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Serpentine\_0010 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Serpentine\_0010:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Shaqnato\_134 Start: 81274, Stop: 81690, Start Num: 88

Candidate Starts for Shaqnato\_134:

(15, 80797), (Start: 88 @81274 has 23 MA's), (116, 81331), (132, 81394), (152, 81463), (162, 81508), (174, 81547),

Gene: Sheila\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for Sheila\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Shelob\_143 Start: 84076, Stop: 84492, Start Num: 88

Candidate Starts for Shelob\_143:

(15, 83599), (Start: 88 @84076 has 23 MA's), (116, 84133), (132, 84196), (152, 84265), (162, 84310), (174, 84349),

Gene: ShiVal\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for ShiVal\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Shifa\_130 Start: 81500, Stop: 81916, Start Num: 88

Candidate Starts for Shifa\_130:

(15, 81023), (Start: 88 @81500 has 23 MA's), (116, 81557), (132, 81620), (152, 81689), (162, 81734), (174, 81773),

Gene: Shivanishola\_50 Start: 42031, Stop: 42549, Start Num: 60

Candidate Starts for Shivanishola\_50:

(50, 42019), (Start: 54 @42028 has 5 MA's), (Start: 60 @42031 has 11 MA's), (141, 42247), (164, 42337), (166, 42349),

Gene: Sigman\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Sigman\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Sitar\_50 Start: 43707, Stop: 44228, Start Num: 54

Candidate Starts for Sitar\_50:

(50, 43698), (Start: 54 @43707 has 5 MA's), (Start: 60 @43710 has 11 MA's), (141, 43926), (164, 44016), (166, 44028),

Gene: Sitar\_20 Start: 15655, Stop: 16110, Start Num: 80

Candidate Starts for Sitar\_20:

(Start: 75 @15643 has 10 MA's), (Start: 80 @15655 has 2 MA's), (Start: 84 @15664 has 146 MA's), (Start: 100 @15694 has 2 MA's), (104, 15703), (153, 15874), (159, 15907), (169, 15949), (182, 15970), (195, 16015), (202, 16051),

Gene: Skippy\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Skippy\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Slatt\_10 Start: 8945, Stop: 9379, Start Num: 84  
Candidate Starts for Slatt\_10:  
(Start: 84 @8945 has 146 MA's), (103, 8984), (115, 9008), (136, 9089), (159, 9179), (182, 9242),

Gene: Smairt\_2 Start: 926, Stop: 1435, Start Num: 82  
Candidate Starts for Smairt\_2:  
(Start: 82 @926 has 14 MA's), (152, 1121), (153, 1130), (162, 1166), (217, 1388),

Gene: Smeagol\_2 Start: 927, Stop: 1436, Start Num: 82  
Candidate Starts for Smeagol\_2:  
(Start: 82 @927 has 14 MA's), (152, 1122), (153, 1131), (162, 1167), (217, 1389),

Gene: SoJo\_43 Start: 31466, Stop: 31978, Start Num: 73  
Candidate Starts for SoJo\_43:  
(Start: 73 @31466 has 3 MA's), (99, 31523), (189, 31799), (203, 31868),

Gene: Soto\_10 Start: 8940, Stop: 9374, Start Num: 84  
Candidate Starts for Soto\_10:  
(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Spartan300\_10 Start: 8940, Stop: 9374, Start Num: 84  
Candidate Starts for Spartan300\_10:  
(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Suffolk\_10 Start: 8942, Stop: 9376, Start Num: 84  
Candidate Starts for Suffolk\_10:  
(Start: 84 @8942 has 146 MA's), (103, 8981), (115, 9005), (136, 9086), (159, 9176), (182, 9239),

Gene: Superphikiman\_163 Start: 84350, Stop: 84877, Start Num: 68  
Candidate Starts for Superphikiman\_163:  
(Start: 58 @84308 has 2 MA's), (Start: 68 @84350 has 1 MA's), (77, 84365), (151, 84587), (164, 84644), (170, 84665),

Gene: Surely\_10 Start: 8943, Stop: 9377, Start Num: 84  
Candidate Starts for Surely\_10:  
(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Swish\_10 Start: 8944, Stop: 9378, Start Num: 84  
Candidate Starts for Swish\_10:  
(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: Tangent\_16 Start: 13468, Stop: 13914, Start Num: 84  
Candidate Starts for Tangent\_16:  
(Start: 75 @13447 has 10 MA's), (Start: 80 @13459 has 2 MA's), (Start: 84 @13468 has 146 MA's),  
(Start: 100 @13498 has 2 MA's), (104, 13507), (153, 13678), (159, 13711), (169, 13753), (182, 13774), (195, 13819), (202, 13855),

Gene: Teardrop\_140 Start: 81782, Stop: 82198, Start Num: 88

Candidate Starts for Teardrop\_140:

(15, 81305), (Start: 88 @81782 has 23 MA's), (116, 81839), (132, 81902), (152, 81971), (162, 82016), (174, 82055),

Gene: Thing3\_49 Start: 42108, Stop: 42626, Start Num: 60

Candidate Starts for Thing3\_49:

(Start: 60 @42108 has 11 MA's), (141, 42324), (164, 42414), (166, 42426),

Gene: Thora\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Thora\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: ThreeOh3D2\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for ThreeOh3D2\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: ToastyFinz\_42 Start: 32290, Stop: 32811, Start Num: 71

Candidate Starts for ToastyFinz\_42:

(31, 32113), (53, 32227), (Start: 71 @32290 has 3 MA's), (116, 32383), (169, 32578), (189, 32629), (198, 32668), (203, 32698),

Gene: TomBombadil\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for TomBombadil\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Tomlarah\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Tomlarah\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Tooj\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for Tooj\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Tophat\_101 Start: 63868, Stop: 64362, Start Num: 87

Candidate Starts for Tophat\_101:

(48, 63760), (Start: 60 @63799 has 11 MA's), (Start: 87 @63868 has 14 MA's), (119, 63952), (139, 64024), (150, 64063), (213, 64333),

Gene: Trypo\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Trypo\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Tucker\_41 Start: 26756, Stop: 26394, Start Num: 111

Candidate Starts for Tucker\_41:

(Start: 111 @26756 has 2 MA's), (125, 26708), (152, 26609), (171, 26531), (196, 26471),

Gene: UAch1\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for UAch1\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Usavi\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Usavi\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Valjean\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Valjean\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Virapocalypse\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for Virapocalypse\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Vista\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Vista\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Vivaldi\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for Vivaldi\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: Vivi2\_18 Start: 14618, Stop: 15085, Start Num: 75

Candidate Starts for Vivi2\_18:

(Start: 75 @14618 has 10 MA's), (Start: 80 @14630 has 2 MA's), (Start: 84 @14639 has 146 MA's),  
(Start: 100 @14669 has 2 MA's), (104, 14678), (153, 14849), (159, 14882), (169, 14924), (182,  
14945), (195, 14990), (202, 15026),

Gene: Vivi2\_54 Start: 43935, Stop: 44456, Start Num: 54

Candidate Starts for Vivi2\_54:

(50, 43926), (Start: 54 @43935 has 5 MA's), (Start: 60 @43938 has 11 MA's), (141, 44154), (164,  
44244), (166, 44256),

Gene: Vondra\_43 Start: 30012, Stop: 30503, Start Num: 63

Candidate Starts for Vondra\_43:

(Start: 63 @30012 has 8 MA's), (159, 30264), (162, 30279),

Gene: Waterdiva\_10 Start: 8944, Stop: 9378, Start Num: 84

Candidate Starts for Waterdiva\_10:

(Start: 84 @8944 has 146 MA's), (103, 8983), (115, 9007), (136, 9088), (159, 9178), (182, 9241),

Gene: Weher20\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for Weher20\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: WhereRU\_166 Start: 91625, Stop: 92011, Start Num: 109

Candidate Starts for WhereRU\_166:

(90, 91589), (93, 91595), (Start: 109 @91625 has 2 MA's), (129, 91694), (156, 91781), (179, 91847),

Gene: YorkOnyx\_19 Start: 14161, Stop: 14622, Start Num: 84

Candidate Starts for YorkOnyx\_19:

(Start: 75 @14140 has 10 MA's), (Start: 80 @14152 has 2 MA's), (Start: 84 @14161 has 146 MA's),  
(Start: 100 @14191 has 2 MA's), (120, 14242), (153, 14371), (169, 14446), (182, 14467), (195,  
14512),

Gene: YorkOnyx\_50 Start: 42214, Stop: 42732, Start Num: 60

Candidate Starts for YorkOnyx\_50:

(Start: 60 @42214 has 11 MA's), (69, 42244), (141, 42430), (164, 42520), (166, 42532),

Gene: Yoshand\_10 Start: 8941, Stop: 9375, Start Num: 84

Candidate Starts for Yoshand\_10:

(Start: 84 @8941 has 146 MA's), (103, 8980), (115, 9004), (136, 9085), (159, 9175), (182, 9238),

Gene: YouGoGlencoco\_10 Start: 8940, Stop: 9374, Start Num: 84

Candidate Starts for YouGoGlencoco\_10:

(Start: 84 @8940 has 146 MA's), (103, 8979), (115, 9003), (136, 9084), (159, 9174), (182, 9237),

Gene: Yvonnetastic\_131 Start: 74014, Stop: 74502, Start Num: 70

Candidate Starts for Yvonnetastic\_131:

(Start: 70 @74014 has 1 MA's), (94, 74062), (102, 74080), (137, 74179), (172, 74311), (189, 74356),

Gene: Zaider\_11 Start: 9173, Stop: 9607, Start Num: 84

Candidate Starts for Zaider\_11:

(Start: 84 @9173 has 146 MA's), (103, 9212), (115, 9236), (136, 9317), (159, 9407), (182, 9470),

Gene: Zelda\_10 Start: 8943, Stop: 9377, Start Num: 84

Candidate Starts for Zelda\_10:

(Start: 84 @8943 has 146 MA's), (103, 8982), (115, 9006), (136, 9087), (159, 9177), (182, 9240),

Gene: Zonia\_10 Start: 8957, Stop: 9391, Start Num: 84

Candidate Starts for Zonia\_10:

(Start: 84 @8957 has 146 MA's), (103, 8996), (115, 9020), (136, 9101), (159, 9191), (182, 9254),

Gene: Zulu\_41 Start: 26737, Stop: 26375, Start Num: 111

Candidate Starts for Zulu\_41:

(Start: 111 @26737 has 2 MA's), (125, 26689), (152, 26590), (171, 26512), (196, 26452),

Gene: phiHau3\_61 Start: 41644, Stop: 41168, Start Num: 78

Candidate Starts for phiHau3\_61:

(Start: 78 @41644 has 3 MA's), (110, 41575), (147, 41452), (150, 41440), (154, 41416), (159, 41404), (178, 41344),