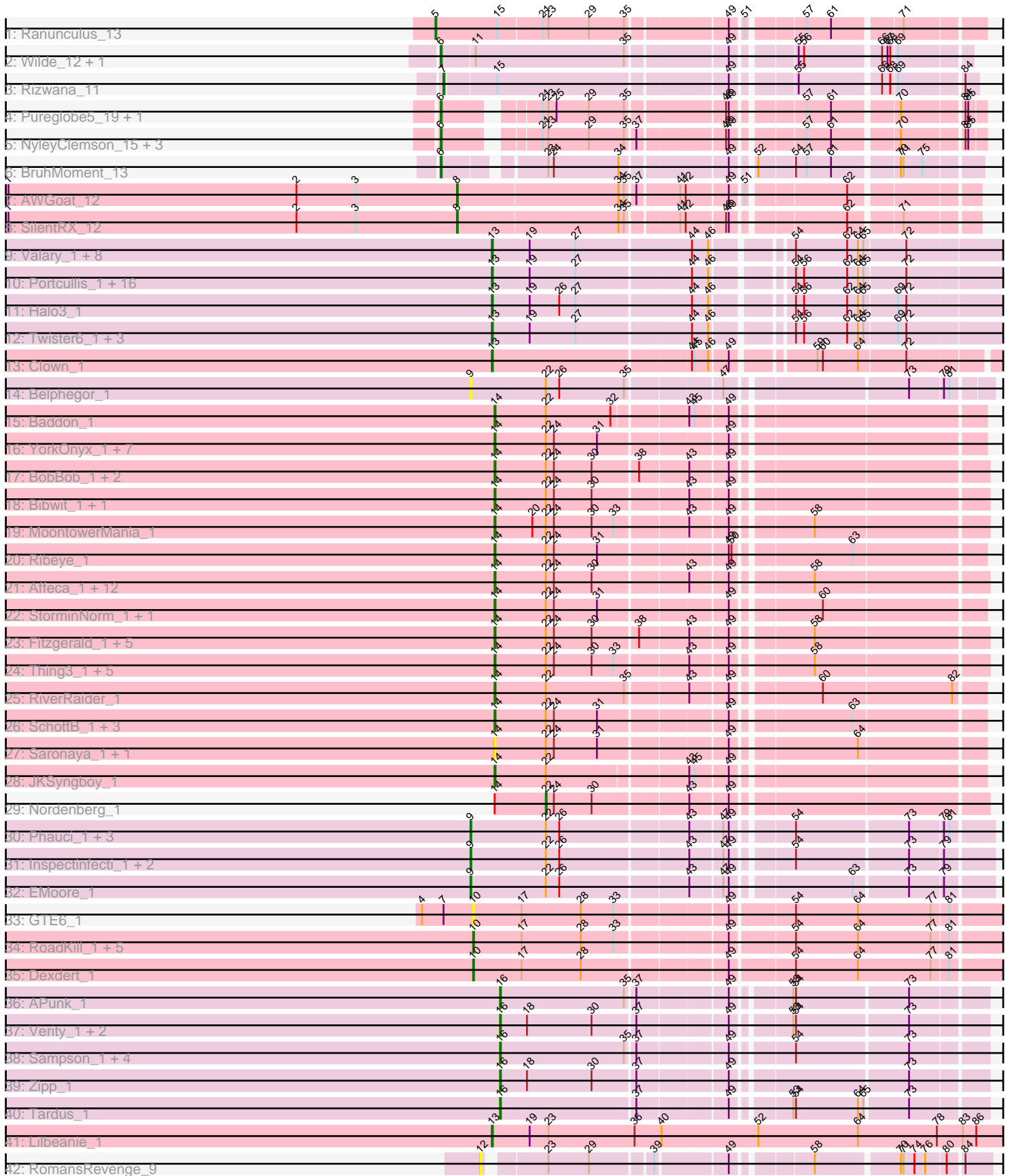


Pham 192409



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 192409 Report

This analysis was run 11/02/24 on database version 579.

Pham number 192409 has 127 members, 18 are drafts.

Phages represented in each track:

- Track 1 : Ranunculus\_13
- Track 2 : Wilde\_12, Tank\_12
- Track 3 : Rizwana\_11
- Track 4 : Pureglobe5\_19, Odyssey395\_19
- Track 5 : NyleyClemson\_15, MellowYellow\_15, Beagle\_18, Pointis\_17
- Track 6 : BruhMoment\_13
- Track 7 : AWGoat\_12
- Track 8 : SilentRX\_12
- Track 9 : Valary\_1, Fireball\_1, Arri\_1, Shinji\_1, KimmyK\_1, Gezellig\_1, Wizard\_1, PullumCavea\_1, Phlop\_1
- Track 10 : Portcullis\_1, Nubi\_1, Bakery\_1, Evamon\_1, Togo\_1, SmokingBunny\_1, PinkCoffee\_1, Salvador\_1, VanDeWege\_1, ClamChowder\_1, Fugax\_1, CoveyB\_1, Mutzi\_1, TillyBobJoe\_1, YungMoney\_1, Barb\_1, Danyall\_1
- Track 11 : Halo3\_1
- Track 12 : Twister6\_1, Savbucketdawg\_1, RogerDodger\_1, Jambalaya\_1
- Track 13 : Clown\_1
- Track 14 : Belphegor\_1
- Track 15 : Baddon\_1
- Track 16 : YorkOnyx\_1, Kroos\_1, Derg\_1, Bizzy\_1, Kwobi\_1, Ashertheman\_1, Tangerine\_1, Flatwoods\_1
- Track 17 : BobBob\_1, Brandonk123\_1, Angelicage\_1
- Track 18 : Bibwit\_1, Stultus\_1
- Track 19 : MoontowerMania\_1
- Track 20 : Ribeye\_1
- Track 21 : Affeca\_1, McKinley\_1, Jabberwocky\_1, Love\_1, Kewpiedoll\_1, Geodirt\_1, Charming\_1, Tangent\_1, Fosterous\_1, ChadMasterC\_1, Lennon\_1, Vivi2\_1, Sitar\_1
- Track 22 : StorminNorm\_1, Tycho\_1
- Track 23 : Fitzgerald\_1, Ailee\_1, Keitabear\_1, Shivanishola\_1, Sedona\_1, Sanjuju\_1
- Track 24 : Thing3\_1, Kamashten\_1, Barsten\_1, Rofo\_1, Galadriel\_1, Paries\_1
- Track 25 : RiverRaider\_1
- Track 26 : SchottB\_1, Baumdotcom\_1, LilHam\_1, Gaea\_1
- Track 27 : Saronaya\_1, Gustavo\_1
- Track 28 : JKSyngboy\_1
- Track 29 : Nordenberg\_1
- Track 30 : Phauci\_1, Leonard\_1, Hans\_1, Phinally\_1

- Track 31 : Inspectinfecti\_1, Ali17\_1, MelBins\_1
- Track 32 : EMOore\_1
- Track 33 : GTE6\_1
- Track 34 : RoadKill\_1, Twonlo\_1, Chickadee\_1, Kwekel\_1, EdmundFerry\_1, Tiamoceli\_1
- Track 35 : Dexdert\_1
- Track 36 : APunk\_1
- Track 37 : Verity\_1, DoctorFroggo\_1, Delrey21\_1
- Track 38 : Sampson\_1, Natkenzie\_1, Abblin\_1, Scioto\_1, ViaConlectus\_1
- Track 39 : Zipp\_1
- Track 40 : Tardus\_1
- Track 41 : Lilbeanie\_1
- Track 42 : RomansRevenge\_9

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

The start number called the most often in the published annotations is 14, it was called in 43 of the 109 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca\_1, Ailee\_1, Angelicage\_1, Ashertheman\_1, Baddon\_1, Barsten\_1, Baumdotcom\_1, Bibwit\_1, Bizzy\_1, BobBob\_1, Brandonk123\_1, ChadMasterC\_1, Charming\_1, Derg\_1, Fitzgerald\_1, Flatwoods\_1, Fosterous\_1, Gaea\_1, Galadriel\_1, Geodirt\_1, Gustavo\_1, JKSyngboy\_1, Jabberwocky\_1, Kamashten\_1, Keitabear\_1, Kewpiedoll\_1, Kroos\_1, Kwobi\_1, Lennon\_1, LilHam\_1, Love\_1, McKinley\_1, MoontowerMania\_1, Paries\_1, Ribeye\_1, RiverRaider\_1, Rofo\_1, Sanjuju\_1, Saronaya\_1, SchottB\_1, Sedona\_1, Shivanishola\_1, Sitar\_1, StorminNorm\_1, Stultus\_1, Tangent\_1, Tangerine\_1, Thing3\_1, Tycho\_1, Vivi2\_1, YorkOnyx\_1,

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

- Nordenberg\_1,

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

- APunk\_1, AWGoat\_12, Abblin\_1, Ali17\_1, Arri\_1, Bakery\_1, Barb\_1, Beagle\_18, Belphegor\_1, BruhMoment\_13, Chickadee\_1, ClamChowder\_1, Clown\_1, CoveyB\_1, Danyall\_1, Delrey21\_1, Dexdert\_1, DoctorFroggo\_1, EMOore\_1, EdmundFerry\_1, Evamon\_1, Fireball\_1, Fugax\_1, GTE6\_1, Gezellig\_1, Halo3\_1, Hans\_1, Inspectinfecti\_1, Jambalaya\_1, KimmyK\_1, Kwekel\_1, Leonard\_1, Lilbeanie\_1, MelBins\_1, MellowYellow\_15, Mutzi\_1, Natkenzie\_1, Nubi\_1, NyleyClemson\_15, Odyssey395\_19, Phauci\_1, Phinally\_1, Phlop\_1, PinkCoffee\_1, Pointis\_17, Portcullis\_1, PullumCavea\_1, Pureglobe5\_19, Ranunculus\_13, Rizwana\_11, RoadKill\_1, RogerDodger\_1, RomansRevenge\_9, Salvador\_1, Sampson\_1, Savbucketdawg\_1, Scioto\_1, Shinji\_1, SilentRX\_12, SmokingBunny\_1, Tank\_12, Tardus\_1, Tiamoceli\_1, TillyBobJoe\_1, Togo\_1, Twister6\_1, Twonlo\_1, Valary\_1, VanDeWege\_1, Verity\_1, ViaConlectus\_1, Wilde\_12, Wizard\_1, YungMoney\_1, Zipp\_1,

**Summary by start number:**

Start 5:

- Found in 1 of 127 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ranunculus\_13 (AP),

Start 6:

- Found in 9 of 127 ( 7.1% ) of genes in pham
- Manual Annotations of this start: 8 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Beagle\_18 (AP2), BruhMoment\_13 (AP3), MellowYellow\_15 (AP2), NyleyClemson\_15 (AP2), Odyssey395\_19 (AP2), Pointis\_17 (AP2), Pureglobe5\_19 (AP2), Tank\_12 (AP1), Wilde\_12 (AP1),

Start 7:

- Found in 2 of 127 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Rizwana\_11 (AP1),

Start 8:

- Found in 2 of 127 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AWGoat\_12 (AP4), SilentRX\_12 (AP4),

Start 9:

- Found in 9 of 127 ( 7.1% ) of genes in pham
- Manual Annotations of this start: 8 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ali17\_1 (DE2), Belphegor\_1 (DE), EMOore\_1 (DE2), Hans\_1 (DE2), Inspectinfecti\_1 (DE2), Leonard\_1 (DE2), MelBins\_1 (DE2), Phauci\_1 (DE2), Phinally\_1 (DE2),

Start 10:

- Found in 8 of 127 ( 6.3% ) of genes in pham
- Manual Annotations of this start: 7 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Chickadee\_1 (DE3), Dexdert\_1 (DE3), EdmundFerry\_1 (DE3), GTE6\_1 (DE3), Kwekel\_1 (DE3), RoadKill\_1 (DE3), Tiamoceli\_1 (DE3), Twonlo\_1 (DE3),

Start 12:

- Found in 1 of 127 ( 0.8% ) 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\_9 (singleton),

Start 13:

- Found in 33 of 127 ( 26.0% ) of genes in pham
- Manual Annotations of this start: 30 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Arri\_1 (DC1), Bakery\_1 (DC1), Barb\_1 (DC1), ClamChowder\_1 (DC1), Clown\_1 (DC2), CoveyB\_1 (DC1), Danyall\_1 (DC1),

Evamon\_1 (DC1), Fireball\_1 (DC1), Fugax\_1 (DC1), Gezellig\_1 (DC1), Halo3\_1 (DC1), Jambalaya\_1 (DC1), KimmyK\_1 (DC1), Lilbeanie\_1 (DE5), Mutzi\_1 (DC1), Nubi\_1 (DC1), Phlop\_1 (DC1), PinkCoffee\_1 (DC1), Portcullis\_1 (DC1), PullumCavea\_1 (DC1), RogerDodger\_1 (DC1), Salvador\_1 (DC1), Savbucketdawg\_1 (DC1), Shinji\_1 (DC1), SmokingBunny\_1 (DC1), TillyBobJoe\_1 (DC1), Togo\_1 (DC1), Twister6\_1 (DC1), Valary\_1 (DC1), VanDeWege\_1 (DC1), Wizard\_1 (DC1), YungMoney\_1 (DC1),

Start 14:

- Found in 52 of 127 ( 40.9% ) of genes in pham
- Manual Annotations of this start: 43 of 109
- Called 98.1% of time when present
- Phage (with cluster) where this start called: Affeca\_1 (DE1), Ailee\_1 (DE1), Angelicage\_1 (DE1), Ashertheman\_1 (DE1), Baddon\_1 (DE1), Barsten\_1 (DE1), Baumdotcom\_1 (DE1), Bibwit\_1 (DE1), Bizzy\_1 (DE1), BobBob\_1 (DE1), Brandonk123\_1 (DE1), ChadMasterC\_1 (DE1), Charming\_1 (DE1), Derg\_1 (DE1), Fitzgerald\_1 (DE1), Flatwoods\_1 (DE1), Fosterous\_1 (DE1), Gaea\_1 (DE1), Galadriel\_1 (DE1), Geodirt\_1 (DE1), Gustavo\_1 (DE1), JKSyngboy\_1 (DE1), Jabberwocky\_1 (DE1), Kamashten\_1 (DE1), Keitabear\_1 (DE1), Kewpiedoll\_1 (DE1), Kroos\_1 (DE1), Kwobi\_1 (DE1), Lennon\_1 (DE1), LilHam\_1 (DE1), Love\_1 (DE1), McKinley\_1 (DE1), MoontowerMania\_1 (DE1), Paries\_1 (DE1), Ribeye\_1 (DE1), RiverRaider\_1 (DE1), Rofo\_1 (DE1), Sanjuju\_1 (DE1), Saronaya\_1 (DE1), SchottB\_1 (DE1), Sedona\_1 (DE1), Shivanishola\_1 (DE1), Sitar\_1 (DE1), StorminNorm\_1 (DE1), Stultus\_1 (DE1), Tangent\_1 (DE1), Tangerine\_1 (DE1), Thing3\_1 (DE1), Tycho\_1 (DE1), Vivi2\_1 (DE1), YorkOnyx\_1 (DE1),

Start 16:

- Found in 11 of 127 ( 8.7% ) of genes in pham
- Manual Annotations of this start: 8 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: APunk\_1 (DE4), Abblin\_1 (DE4), Delrey21\_1 (DE4), DoctorFroggo\_1 (DE4), Natkenzie\_1 (DE4), Sampson\_1 (DE4), Scioto\_1 (DE4), Tardus\_1 (DE4), Verity\_1 (DE4), ViaConlectus\_1 (DE4), Zipp\_1 (DE4),

Start 22:

- Found in 61 of 127 ( 48.0% ) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 1.6% of time when present
- Phage (with cluster) where this start called: Nordenberg\_1 (DE1),

### Summary by clusters:

There are 14 clusters represented in this pham: singleton, AP1, AP2, DE1, DE2, DE3, DE4, DE5, AP4, DE, AP, AP3, DC2, DC1,

Info for manual annotations of cluster AP:

- Start number 5 was manually annotated 1 time for cluster AP.

Info for manual annotations of cluster AP1:

- Start number 6 was manually annotated 2 times for cluster AP1.
- Start number 7 was manually annotated 1 time for cluster AP1.

Info for manual annotations of cluster AP2:

- Start number 6 was manually annotated 5 times for cluster AP2.

Info for manual annotations of cluster AP3:

- Start number 6 was manually annotated 1 time for cluster AP3.

Info for manual annotations of cluster AP4:

- Start number 8 was manually annotated 2 times for cluster AP4.

Info for manual annotations of cluster DC1:

- Start number 13 was manually annotated 28 times for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 13 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DE1:

- Start number 14 was manually annotated 43 times for cluster DE1.
- Start number 22 was manually annotated 1 time for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 9 was manually annotated 8 times for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 10 was manually annotated 7 times for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 16 was manually annotated 8 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 13 was manually annotated 1 time for cluster DE5.

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

Gene: APunk\_1 Start: 1, Stop: 498, Start Num: 16

Candidate Starts for APunk\_1:

(Start: 16 @1 has 8 MA's), (35, 139), (37, 148), (49, 241), (53, 295), (54, 298), (73, 418),

Gene: AWGoat\_12 Start: 5020, Stop: 5541, Start Num: 8

Candidate Starts for AWGoat\_12:

(1, 4522), (2, 4843), (3, 4909), (Start: 8 @5020 has 2 MA's), (34, 5197), (35, 5203), (37, 5212), (41, 5254), (42, 5260), (49, 5302), (51, 5314), (62, 5413),

Gene: Abblin\_1 Start: 1, Stop: 498, Start Num: 16

Candidate Starts for Abblin\_1:

(Start: 16 @1 has 8 MA's), (35, 139), (37, 148), (49, 241), (54, 298), (73, 418),

Gene: Affeca\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Affeca\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: Ailee\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Ailee\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (38, 157), (43, 208), (49, 247), (58, 325),

Gene: Ali17\_1 Start: 1, Stop: 537, Start Num: 9

Candidate Starts for Ali17\_1:

(Start: 9 @1 has 8 MA's), (Start: 22 @85 has 1 MA's), (26, 100), (43, 235), (47, 268), (49, 274), (54, 331), (73, 451), (79, 487),

Gene: Angelicage\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Angelicage\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (38, 157), (43, 208), (49, 247),

Gene: Arri\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Arri\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Ashertheman\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Ashertheman\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247),

Gene: Baddon\_1 Start: 1, Stop: 504, Start Num: 14

Candidate Starts for Baddon\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (32, 130), (43, 205), (45, 211), (49, 244),

Gene: Bakery\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Bakery\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Barb\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Barb\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Barsten\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Barsten\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (33, 133), (43, 208), (49, 247), (58, 325),

Gene: Baumdotcom\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Baumdotcom\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247), (63, 367),

Gene: Beagle\_18 Start: 5586, Stop: 6104, Start Num: 6

Candidate Starts for Beagle\_18:

(Start: 6 @5586 has 8 MA's), (21, 5673), (23, 5679), (29, 5724), (35, 5763), (37, 5772), (48, 5859), (49, 5862), (57, 5928), (61, 5955), (70, 6021), (84, 6084), (85, 6087),

Gene: Belphegor\_1 Start: 1, Stop: 534, Start Num: 9

Candidate Starts for Belphegor\_1:

(Start: 9 @1 has 8 MA's), (Start: 22 @85 has 1 MA's), (26, 100), (35, 172), (47, 268), (73, 451), (79, 487), (81, 493),

Gene: Bibwit\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Bibwit\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247),

Gene: Bizzy\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Bizzy\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247),

Gene: BobBob\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for BobBob\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (38, 157), (43, 208), (49, 247),

Gene: Brandonk123\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Brandonk123\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (38, 157), (43, 208), (49, 247),

Gene: BruhMoment\_13 Start: 5305, Stop: 5826, Start Num: 6

Candidate Starts for BruhMoment\_13:

(Start: 6 @5305 has 8 MA's), (23, 5401), (24, 5407), (34, 5479), (49, 5584), (52, 5602), (54, 5638), (57, 5650), (61, 5677), (70, 5743), (71, 5746), (75, 5767),

Gene: ChadMasterC\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for ChadMasterC\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: Charming\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Charming\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: Chickadee\_1 Start: 1, Stop: 561, Start Num: 10

Candidate Starts for Chickadee\_1:

(Start: 10 @1 has 7 MA's), (17, 55), (28, 121), (33, 157), (49, 271), (54, 337), (64, 406), (77, 487), (81, 505),

Gene: ClamChowder\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for ClamChowder\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Clown\_1 Start: 1, Stop: 522, Start Num: 13

Candidate Starts for Clown\_1:

(Start: 13 @1 has 30 MA's), (44, 214), (45, 217), (46, 232), (49, 250), (59, 328), (60, 334), (64, 373), (72, 424),



Gene: CoveyB\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for CoveyB\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Danyall\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Danyall\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Delrey21\_1 Start: 1, Stop: 498, Start Num: 16

Candidate Starts for Delrey21\_1:

(Start: 16 @1 has 8 MA's), (18, 31), (30, 103), (37, 148), (49, 241), (53, 295), (54, 298), (73, 418),

Gene: Derg\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Derg\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247),

Gene: Dextert\_1 Start: 1, Stop: 561, Start Num: 10

Candidate Starts for Dextert\_1:

(Start: 10 @1 has 7 MA's), (17, 55), (28, 121), (49, 271), (54, 337), (64, 406), (77, 487), (81, 505),

Gene: DoctorFroggo\_1 Start: 1, Stop: 498, Start Num: 16

Candidate Starts for DoctorFroggo\_1:

(Start: 16 @1 has 8 MA's), (18, 31), (30, 103), (37, 148), (49, 241), (53, 295), (54, 298), (73, 418),

Gene: EMoore\_1 Start: 1, Stop: 537, Start Num: 9

Candidate Starts for EMoore\_1:

(Start: 9 @1 has 8 MA's), (Start: 22 @85 has 1 MA's), (26, 100), (43, 235), (47, 268), (49, 274), (63, 394), (73, 451), (79, 487),

Gene: EdmundFerry\_1 Start: 1, Stop: 561, Start Num: 10

Candidate Starts for EdmundFerry\_1:

(Start: 10 @1 has 7 MA's), (17, 55), (28, 121), (33, 157), (49, 271), (54, 337), (64, 406), (77, 487), (81, 505),

Gene: Evamon\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Evamon\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Fireball\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Fireball\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Fitzgerald\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Fitzgerald\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (38, 157), (43, 208), (49, 247), (58, 325),

Gene: Flatwoods\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Flatwoods\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247),

Gene: Fosterous\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Fosterous\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: Fugax\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Fugax\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: GTE6\_1 Start: 65, Stop: 625, Start Num: 10

Candidate Starts for GTE6\_1:

(4, 8), (Start: 7 @32 has 1 MA's), (Start: 10 @65 has 7 MA's), (17, 119), (28, 185), (33, 221), (49, 335), (54, 401), (64, 470), (77, 551), (81, 569),

Gene: Gaea\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Gaea\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247), (63, 367),

Gene: Galadriel\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Galadriel\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (33, 133), (43, 208), (49, 247), (58, 325),

Gene: Geodirt\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Geodirt\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: Gezellig\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Gezellig\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Gustavo\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Gustavo\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247), (64, 373),

Gene: Halo3\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Halo3\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (26, 76), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (69, 415), (72, 424),

Gene: Hans\_1 Start: 1, Stop: 537, Start Num: 9

Candidate Starts for Hans\_1:

(Start: 9 @1 has 8 MA's), (Start: 22 @85 has 1 MA's), (26, 100), (43, 235), (47, 268), (49, 274), (54, 331), (73, 451), (79, 487), (81, 493),

Gene: Inspectinfecti\_1 Start: 1, Stop: 537, Start Num: 9

Candidate Starts for Inspectinfecti\_1:

(Start: 9 @1 has 8 MA's), (Start: 22 @85 has 1 MA's), (26, 100), (43, 235), (47, 268), (49, 274), (54, 331), (73, 451), (79, 487),

Gene: JKSyngboy\_1 Start: 1, Stop: 504, Start Num: 14

Candidate Starts for JKSyngboy\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (43, 205), (45, 211), (49, 244),

Gene: Jabberwocky\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Jabberwocky\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: Jambalaya\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Jambalaya\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (69, 415), (72, 424),

Gene: Kamashten\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Kamashten\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (33, 133), (43, 208), (49, 247), (58, 325),

Gene: Keitabear\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Keitabear\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (38, 157), (43, 208), (49, 247), (58, 325),

Gene: Kewpiedoll\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Kewpiedoll\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: KimmyK\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for KimmyK\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Kroos\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Kroos\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247),

Gene: Kwekel\_1 Start: 1, Stop: 561, Start Num: 10

Candidate Starts for Kwekel\_1:

(Start: 10 @1 has 7 MA's), (17, 55), (28, 121), (33, 157), (49, 271), (54, 337), (64, 406), (77, 487), (81, 505),

Gene: Kwobi\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Kwobi\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247),

Gene: Lennon\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Lennon\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: Leonard\_1 Start: 1, Stop: 537, Start Num: 9

Candidate Starts for Leonard\_1:

(Start: 9 @1 has 8 MA's), (Start: 22 @85 has 1 MA's), (26, 100), (43, 235), (47, 268), (49, 274), (54, 331), (73, 451), (79, 487), (81, 493),

Gene: LilHam\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for LilHam\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247), (63, 367),

Gene: Lilbeanie\_1 Start: 1, Stop: 591, Start Num: 13

Candidate Starts for Lilbeanie\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (23, 64), (36, 160), (40, 190), (52, 298), (64, 409), (78, 496), (83, 523), (86, 538),

Gene: Love\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Love\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: McKinley\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for McKinley\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: MelBins\_1 Start: 1, Stop: 537, Start Num: 9

Candidate Starts for MelBins\_1:

(Start: 9 @1 has 8 MA's), (Start: 22 @85 has 1 MA's), (26, 100), (43, 235), (47, 268), (49, 274), (54, 331), (73, 451), (79, 487),

Gene: MellowYellow\_15 Start: 5043, Stop: 5561, Start Num: 6

Candidate Starts for MellowYellow\_15:

(Start: 6 @5043 has 8 MA's), (21, 5130), (23, 5136), (29, 5181), (35, 5220), (37, 5229), (48, 5316), (49, 5319), (57, 5385), (61, 5412), (70, 5478), (84, 5541), (85, 5544),

Gene: MoontowerMania\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for MoontowerMania\_1:

(Start: 14 @1 has 43 MA's), (20, 43), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (33, 133), (43, 208), (49, 247), (58, 325),

Gene: Mutzi\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Mutzi\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Natkenzie\_1 Start: 1, Stop: 498, Start Num: 16

Candidate Starts for Natkenzie\_1:

(Start: 16 @1 has 8 MA's), (35, 139), (37, 148), (49, 241), (54, 298), (73, 418),

Gene: Nordenberg\_1 Start: 58, Stop: 510, Start Num: 22

Candidate Starts for Nordenberg\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247),

Gene: Nubi\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Nubi\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: NyleyClemson\_15 Start: 4985, Stop: 5503, Start Num: 6

Candidate Starts for NyleyClemson\_15:

(Start: 6 @4985 has 8 MA's), (21, 5072), (23, 5078), (29, 5123), (35, 5162), (37, 5171), (48, 5258), (49, 5261), (57, 5327), (61, 5354), (70, 5420), (84, 5483), (85, 5486),

Gene: Odyssey395\_19 Start: 5787, Stop: 6305, Start Num: 6

Candidate Starts for Odyssey395\_19:

(Start: 6 @5787 has 8 MA's), (21, 5874), (23, 5880), (25, 5889), (29, 5925), (35, 5964), (48, 6060), (49, 6063), (57, 6129), (61, 6156), (70, 6222), (84, 6285), (85, 6288),

Gene: Paries\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Paries\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (33, 133), (43, 208), (49, 247), (58, 325),

Gene: Phauci\_1 Start: 1, Stop: 537, Start Num: 9

Candidate Starts for Phauci\_1:

(Start: 9 @1 has 8 MA's), (Start: 22 @85 has 1 MA's), (26, 100), (43, 235), (47, 268), (49, 274), (54, 331), (73, 451), (79, 487), (81, 493),

Gene: Phinally\_1 Start: 1, Stop: 537, Start Num: 9

Candidate Starts for Phinally\_1:

(Start: 9 @1 has 8 MA's), (Start: 22 @85 has 1 MA's), (26, 100), (43, 235), (47, 268), (49, 274), (54, 331), (73, 451), (79, 487), (81, 493),

Gene: Phlop\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Phlop\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: PinkCoffee\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for PinkCoffee\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Pointis\_17 Start: 5785, Stop: 6303, Start Num: 6

Candidate Starts for Pointis\_17:

(Start: 6 @5785 has 8 MA's), (21, 5872), (23, 5878), (29, 5923), (35, 5962), (37, 5971), (48, 6058), (49, 6061), (57, 6127), (61, 6154), (70, 6220), (84, 6283), (85, 6286),

Gene: Portcullis\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Portcullis\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: PullumCavea\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for PullumCavea\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Pureglobe5\_19 Start: 5801, Stop: 6319, Start Num: 6

Candidate Starts for Pureglobe5\_19:

(Start: 6 @5801 has 8 MA's), (21, 5888), (23, 5894), (25, 5903), (29, 5939), (35, 5978), (48, 6074), (49, 6077), (57, 6143), (61, 6170), (70, 6236), (84, 6299), (85, 6302),

Gene: Ranunculus\_13 Start: 5362, Stop: 5913, Start Num: 5

Candidate Starts for Ranunculus\_13:

(Start: 5 @5362 has 1 MA's), (15, 5431), (21, 5479), (23, 5485), (29, 5530), (35, 5569), (49, 5668), (51, 5680), (57, 5734), (61, 5761), (71, 5830),

Gene: Ribeye\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Ribeye\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247), (50, 250), (63, 367),

Gene: RiverRaider\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for RiverRaider\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (35, 145), (43, 208), (49, 247), (60, 334), (82, 475),

Gene: Rizwana\_11 Start: 5074, Stop: 5604, Start Num: 7

Candidate Starts for Rizwana\_11:

(Start: 7 @5074 has 1 MA's), (15, 5128), (49, 5368), (55, 5425), (66, 5509), (68, 5518), (69, 5524), (84, 5590),

Gene: RoadKill\_1 Start: 1, Stop: 561, Start Num: 10

Candidate Starts for RoadKill\_1:

(Start: 10 @1 has 7 MA's), (17, 55), (28, 121), (33, 157), (49, 271), (54, 337), (64, 406), (77, 487), (81, 505),

Gene: Rofo\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Rofo\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (33, 133), (43, 208), (49, 247), (58, 325),

Gene: RogerDodger\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for RogerDodger\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (69, 415), (72, 424),

Gene: RomansRevenge\_9 Start: 3610, Stop: 4101, Start Num: 12

Candidate Starts for RomansRevenge\_9:

(12, 3610), (23, 3667), (29, 3712), (39, 3775), (49, 3847), (58, 3922), (70, 4009), (71, 4012), (74, 4024), (76, 4036), (80, 4057), (84, 4072),

Gene: Salvador\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Salvador\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Sampson\_1 Start: 1, Stop: 498, Start Num: 16  
Candidate Starts for Sampson\_1:  
(Start: 16 @1 has 8 MA's), (35, 139), (37, 148), (49, 241), (54, 298), (73, 418),

Gene: Sanjuju\_1 Start: 1, Stop: 510, Start Num: 14  
Candidate Starts for Sanjuju\_1:  
(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (38, 157), (43, 208), (49, 247), (58, 325),

Gene: Saronaya\_1 Start: 1, Stop: 507, Start Num: 14  
Candidate Starts for Saronaya\_1:  
(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247), (64, 373),

Gene: Savbucketdawg\_1 Start: 1, Stop: 531, Start Num: 13  
Candidate Starts for Savbucketdawg\_1:  
(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (69, 415), (72, 424),

Gene: SchottB\_1 Start: 1, Stop: 507, Start Num: 14  
Candidate Starts for SchottB\_1:  
(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247), (63, 367),

Gene: Scioto\_1 Start: 1, Stop: 498, Start Num: 16  
Candidate Starts for Scioto\_1:  
(Start: 16 @1 has 8 MA's), (35, 139), (37, 148), (49, 241), (54, 298), (73, 418),

Gene: Sedona\_1 Start: 1, Stop: 510, Start Num: 14  
Candidate Starts for Sedona\_1:  
(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (38, 157), (43, 208), (49, 247), (58, 325),

Gene: Shinji\_1 Start: 1, Stop: 531, Start Num: 13  
Candidate Starts for Shinji\_1:  
(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Shivanishola\_1 Start: 1, Stop: 510, Start Num: 14  
Candidate Starts for Shivanishola\_1:  
(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (38, 157), (43, 208), (49, 247), (58, 325),

Gene: SilentRX\_12 Start: 4625, Stop: 5146, Start Num: 8  
Candidate Starts for SilentRX\_12:  
(1, 4127), (2, 4448), (3, 4514), (Start: 8 @4625 has 2 MA's), (34, 4802), (35, 4808), (41, 4859), (42, 4865), (48, 4904), (49, 4907), (62, 5018), (71, 5069),

Gene: Sitar\_1 Start: 1, Stop: 510, Start Num: 14  
Candidate Starts for Sitar\_1:  
(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: SmokingBunny\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for SmokingBunny\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: StorminNorm\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for StorminNorm\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247), (60, 334),

Gene: Stultus\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Stultus\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247),

Gene: Tangent\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Tangent\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: Tangerine\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Tangerine\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247),

Gene: Tank\_12 Start: 5089, Stop: 5619, Start Num: 6

Candidate Starts for Tank\_12:

(Start: 6 @5089 has 8 MA's), (11, 5125), (35, 5290), (49, 5389), (55, 5446), (56, 5452), (66, 5530), (67, 5536), (68, 5539), (69, 5545),

Gene: Tardus\_1 Start: 1, Stop: 498, Start Num: 16

Candidate Starts for Tardus\_1:

(Start: 16 @1 has 8 MA's), (37, 148), (49, 241), (53, 295), (54, 298), (64, 367), (65, 373), (73, 418),

Gene: Thing3\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Thing3\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (33, 133), (43, 208), (49, 247), (58, 325),

Gene: Tiamoceli\_1 Start: 1, Stop: 561, Start Num: 10

Candidate Starts for Tiamoceli\_1:

(Start: 10 @1 has 7 MA's), (17, 55), (28, 121), (33, 157), (49, 271), (54, 337), (64, 406), (77, 487), (81, 505),

Gene: TillyBobJoe\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for TillyBobJoe\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Togo\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Togo\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Twister6\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Twister6\_1:



(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (69, 415), (72, 424),

Gene: Twonlo\_1 Start: 1, Stop: 561, Start Num: 10

Candidate Starts for Twonlo\_1:

(Start: 10 @1 has 7 MA's), (17, 55), (28, 121), (33, 157), (49, 271), (54, 337), (64, 406), (77, 487), (81, 505),

Gene: Tycho\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for Tycho\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247), (60, 334),

Gene: Valary\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Valary\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: VanDeWege\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for VanDeWege\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Verity\_1 Start: 1, Stop: 498, Start Num: 16

Candidate Starts for Verity\_1:

(Start: 16 @1 has 8 MA's), (18, 31), (30, 103), (37, 148), (49, 241), (53, 295), (54, 298), (73, 418),

Gene: ViaConlectus\_1 Start: 1, Stop: 498, Start Num: 16

Candidate Starts for ViaConlectus\_1:

(Start: 16 @1 has 8 MA's), (35, 139), (37, 148), (49, 241), (54, 298), (73, 418),

Gene: Vivi2\_1 Start: 1, Stop: 510, Start Num: 14

Candidate Starts for Vivi2\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (30, 109), (43, 208), (49, 247), (58, 325),

Gene: Wilde\_12 Start: 5017, Stop: 5547, Start Num: 6

Candidate Starts for Wilde\_12:

(Start: 6 @5017 has 8 MA's), (11, 5053), (35, 5218), (49, 5317), (55, 5374), (56, 5380), (66, 5458), (67, 5464), (68, 5467), (69, 5473),

Gene: Wizard\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for Wizard\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: YorkOnyx\_1 Start: 1, Stop: 507, Start Num: 14

Candidate Starts for YorkOnyx\_1:

(Start: 14 @1 has 43 MA's), (Start: 22 @58 has 1 MA's), (24, 67), (31, 115), (49, 247),

Gene: YungMoney\_1 Start: 1, Stop: 531, Start Num: 13

Candidate Starts for YungMoney\_1:

(Start: 13 @1 has 30 MA's), (19, 43), (27, 94), (44, 214), (46, 232), (54, 304), (56, 313), (62, 361), (64, 373), (65, 379), (72, 424),

Gene: Zipp\_1 Start: 1, Stop: 498, Start Num: 16

Candidate Starts for Zipp\_1:

(Start: 16 @1 has 8 MA's), (18, 31), (30, 103), (37, 148), (49, 241), (73, 418),