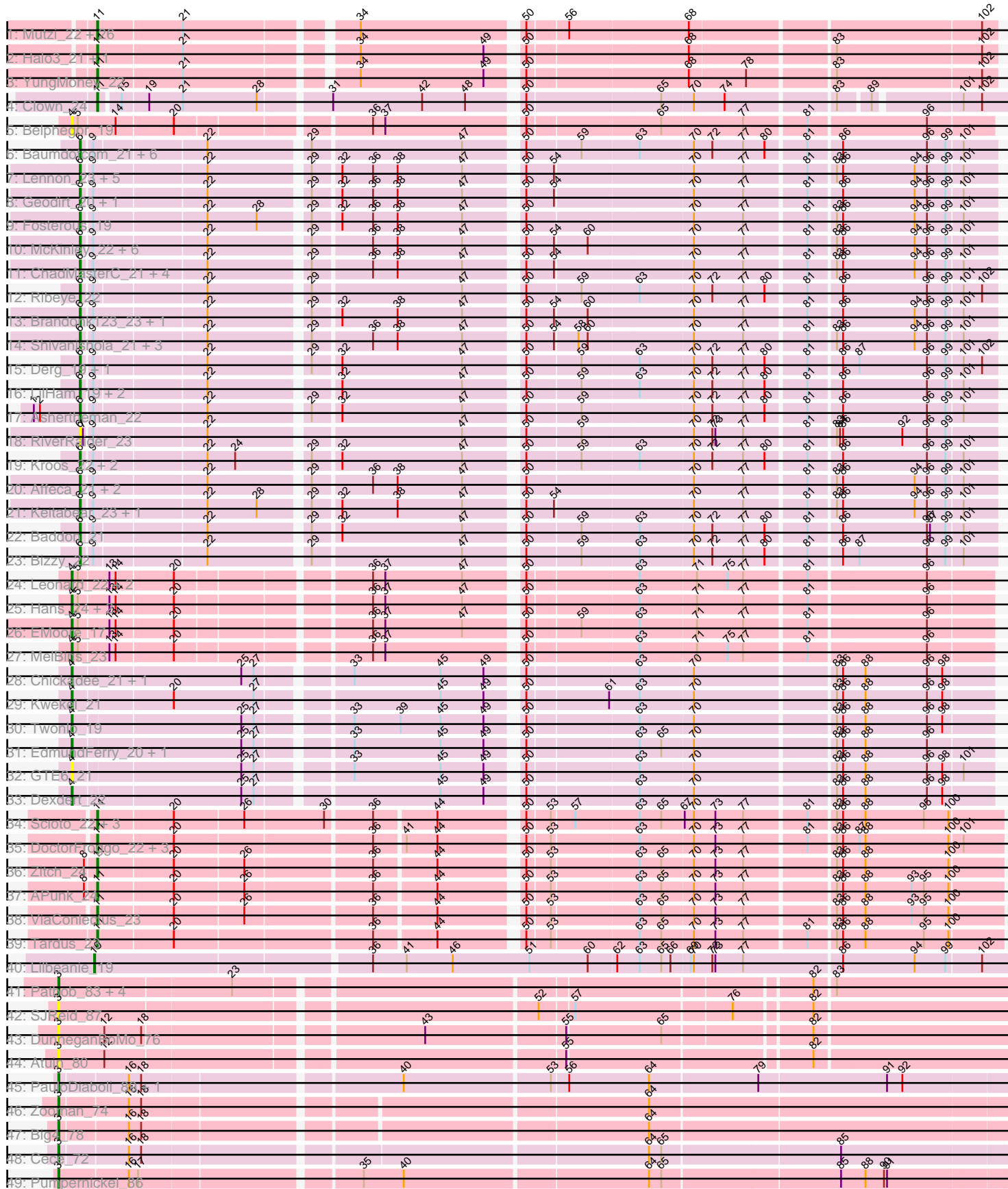


Pham 157698



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 157698 Report

This analysis was run 04/13/24 on database version 558.

Pham number 157698 has 127 members, 26 are drafts.

Phages represented in each track:

- Track 1 : Mutzi\_22, Savbucketdawg\_20, Danyall\_22, Togo\_20, Wizard\_20, Jambalaya\_20, Nubi\_20, Phlop\_20, TillyBobJoe\_20, Gezellig\_21, KimmyK\_22, PullumCavea\_20, PinkCoffee\_22, ClamChowder\_22, RogerDodger\_23, Fugax\_22, Shinji\_20, Salvador\_20, Fireball\_21, Twister6\_22, Portcullis\_20, Evamon\_20, Arri\_23, Barb\_22, VanDeWege\_23, Valary\_23, SmokingBunny\_20
- Track 2 : Halo3\_21, Bakery\_21
- Track 3 : YungMoney\_22
- Track 4 : Clown\_24
- Track 5 : Belphegor\_19
- Track 6 : Baumdotcom\_21, Gaea\_21, Tycho\_21, Saronaya\_21, Kwobi\_22, YorkOnyx\_22, Gustavo\_21
- Track 7 : Lennon\_23, Bibwit\_22, Stultus\_21, Sedona\_23, Barsten\_22, Sitar\_23
- Track 8 : Geodirt\_20, Kewpiedoll\_22
- Track 9 : Fosterous\_19
- Track 10 : McKinley\_22, Love\_23, Galadriel\_23, Vivi2\_21, Rofo\_21, MoontowerMania\_20, Nordenberg\_16
- Track 11 : ChadMasterC\_21, Sanjuju\_19, Thing3\_22, Kamashten\_22, Jabberwocky\_19
- Track 12 : Ribeye\_22
- Track 13 : Brandonk123\_23, Paries\_22
- Track 14 : Shivanishola\_21, BobBob\_19, Charming\_19, Tangent\_19
- Track 15 : Derg\_19, Flatwoods\_22
- Track 16 : LilHam\_19, SchottB\_20, JKSyngboy\_20
- Track 17 : Ashertheman\_22
- Track 18 : RiverRaider\_23
- Track 19 : Kroos\_22, StorminNorm\_21, Tangerine\_21
- Track 20 : Affeca\_21, Angelicage\_21, Fitzgerald\_19
- Track 21 : Keitabear\_23, Ailee\_21
- Track 22 : Baddon\_21
- Track 23 : Bizzy\_22
- Track 24 : Leonard\_22, Ali17\_20, Phinally\_22
- Track 25 : Hans\_24, Phauci\_15, Inspectinfecti\_23
- Track 26 : EMoore\_17
- Track 27 : MelBins\_23
- Track 28 : Chickadee\_21, Tiamoceli\_22
- Track 29 : Kwekel\_21
- Track 30 : Twonlo\_19

- Track 31 : EdmundFerry\_20, RoadKill\_19
- Track 32 : GTE6\_21
- Track 33 : Dxdert\_22
- Track 34 : Scioto\_22, Natkenzie\_22, Sampson\_22, Abblin\_22
- Track 35 : DoctorFroggo\_22, Zipp\_22, Delrey21\_22, Verity\_22
- Track 36 : Zitch\_24
- Track 37 : APunk\_24
- Track 38 : ViaConlectus\_23
- Track 39 : Tardus\_23
- Track 40 : Lilbeanie\_19
- Track 41 : Patbob\_83, Bloom\_86, Racecar\_83, Mimi\_89, Talia1610\_86
- Track 42 : SJReid\_87
- Track 43 : DunneganBoMo\_76
- Track 44 : Atuin\_80
- Track 45 : PauloDiaboli\_89, A3Wally\_89
- Track 46 : Zooman\_74
- Track 47 : Big4\_78
- Track 48 : Cece\_72
- Track 49 : Pumpernickel\_86

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

The start number called the most often in the published annotations is 6, it was called in 42 of the 101 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca\_21, Ailee\_21, Angelicage\_21, Ashertheman\_22, Baddon\_21, Barsten\_22, Baumdotcom\_21, Bibwit\_22, Bizzy\_22, BobBob\_19, Brandonk123\_23, ChadMasterC\_21, Charming\_19, Derg\_19, Fitzgerald\_19, Flatwoods\_22, Fosterous\_19, Gaea\_21, Galadriel\_23, Geodirt\_20, Gustavo\_21, JKSyngboy\_20, Jabberwocky\_19, Kamashten\_22, Keitabear\_23, Kewpiedoll\_22, Kroos\_22, Kwobi\_22, Lennon\_23, LilHam\_19, Love\_23, McKinley\_22, MoontowerMania\_20, Nordenberg\_16, Paries\_22, Ribeye\_22, RiverRaider\_23, Rofo\_21, Sanjuju\_19, Saronaya\_21, SchottB\_20, Sedona\_23, Shivanishola\_21, Sitar\_23, StorminNorm\_21, Stultus\_21, Tangent\_19, Tangerine\_21, Thing3\_22, Tycho\_21, Vivi2\_21, YorkOnyx\_22,

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

- 

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

- A3Wally\_89, APunk\_24, Abblin\_22, Ali17\_20, Arri\_23, Atuin\_80, Bakery\_21, Barb\_22, Belphegor\_19, Big4\_78, Bloom\_86, Cece\_72, Chickadee\_21, ClamChowder\_22, Clown\_24, Danyall\_22, Delrey21\_22, Dxdert\_22, DoctorFroggo\_22, DunneganBoMo\_76, EMOore\_17, EdmundFerry\_20, Evamon\_20, Fireball\_21, Fugax\_22, GTE6\_21, Gezellig\_21, Halo3\_21, Hans\_24, Inspectinfecti\_23, Jambalaya\_20, KimmyK\_22, Kwekel\_21, Leonard\_22, Lilbeanie\_19, MelBins\_23, Mimi\_89, Mutzi\_22, Natkenzie\_22, Nubi\_20, Patbob\_83, PauloDiaboli\_89, Phauci\_15, Phinally\_22, Phlop\_20, PinkCoffee\_22, Portcullis\_20, PullumCavea\_20, Pumpernickel\_86, Racecar\_83, RoadKill\_19, RogerDodger\_23,

SJReid\_87, Salvador\_20, Sampson\_22, Savbucketdawg\_20, Scioto\_22, Shinji\_20, SmokingBunny\_20, Talia1610\_86, Tardus\_23, Tiamoceli\_22, TillyBobJoe\_20, Togo\_20, Twister6\_22, Twonlo\_19, Valary\_23, VanDeWege\_23, Verity\_22, ViaConlectus\_23, Wizard\_20, YungMoney\_22, Zipp\_22, Zitch\_24, Zooman\_74,

### Summary by start number:

#### Start 3:

- Found in 14 of 127 ( 11.0% ) of genes in pham
- Manual Annotations of this start: 7 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally\_89 (GD1), Atuin\_80 (FC), Big4\_78 (GD2), Bloom\_86 (FC), Cece\_72 (GD3), DunneganBoMo\_76 (FC), Mimi\_89 (FC), Patbob\_83 (FC), PauloDiaboli\_89 (GD1), Pumpernickel\_86 (GD4), Racecar\_83 (FC), SJReid\_87 (FC), Talia1610\_86 (FC), Zooman\_74 (GD2),

#### Start 4:

- Found in 17 of 127 ( 13.4% ) of genes in pham
- Manual Annotations of this start: 13 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ali17\_20 (DE2), Belphegor\_19 (DE), Chickadee\_21 (DE3), Dextert\_22 (DE3), EMoore\_17 (DE2), EdmundFerry\_20 (DE3), GTE6\_21 (DE3), Hans\_24 (DE2), Inspectinfecti\_23 (DE2), Kwekel\_21 (DE3), Leonard\_22 (DE2), MelBins\_23 (DE2), Phauci\_15 (DE2), Phinally\_22 (DE2), RoadKill\_19 (DE3), Tiamoceli\_22 (DE3), Twonlo\_19 (DE3),

#### Start 6:

- Found in 52 of 127 ( 40.9% ) of genes in pham
- Manual Annotations of this start: 42 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Affeca\_21 (DE1), Ailee\_21 (DE1), Angelicage\_21 (DE1), Ashertheman\_22 (DE1), Baddon\_21 (DE1), Barsten\_22 (DE1), Baumdotcom\_21 (DE1), Bibwit\_22 (DE1), Bizzy\_22 (DE1), BobBob\_19 (DE1), Brandonk123\_23 (DE1), ChadMasterC\_21 (DE1), Charming\_19 (DE1), Derg\_19 (DE1), Fitzgerald\_19 (DE1), Flatwoods\_22 (DE1), Fosterous\_19 (DE1), Gaea\_21 (DE1), Galadriel\_23 (DE1), Geodirt\_20 (DE1), Gustavo\_21 (DE1), JKSyngboy\_20 (DE1), Jabberwocky\_19 (DE1), Kamashten\_22 (DE1), Keitabear\_23 (DE1), Kewpiedoll\_22 (DE1), Kroos\_22 (DE1), Kwobi\_22 (DE1), Lennon\_23 (DE1), LilHam\_19 (DE1), Love\_23 (DE1), McKinley\_22 (DE1), MoontowerMania\_20 (DE1), Nordenberg\_16 (DE1), Paries\_22 (DE1), Ribeye\_22 (DE1), RiverRaider\_23 (DE1), Rofo\_21 (DE1), Sanjuju\_19 (DE1), Saronaya\_21 (DE1), SchottB\_20 (DE1), Sedona\_23 (DE1), Shivanishola\_21 (DE1), Sitar\_23 (DE1), StorminNorm\_21 (DE1), Stultus\_21 (DE1), Tangent\_19 (DE1), Tangerine\_21 (DE1), Thing3\_22 (DE1), Tycho\_21 (DE1), Vivi2\_21 (DE1), YorkOnyx\_22 (DE1),

#### Start 10:

- Found in 1 of 127 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilbeanie\_19 (DE5),

#### Start 11:

- Found in 43 of 127 ( 33.9% ) of genes in pham

- Manual Annotations of this start: 38 of 101
- Called 100.0% of time when present
- Phage (with cluster) where this start called: APunk\_24 (DE4), Abblin\_22 (DE4), Arri\_23 (DC1), Bakery\_21 (DC1), Barb\_22 (DC1), ClamChowder\_22 (DC1), Clown\_24 (DC2), Danyall\_22 (DC1), Delrey21\_22 (DE4), DoctorFroggo\_22 (DE4), Evamon\_20 (DC1), Fireball\_21 (DC1), Fugax\_22 (DC1), Gezellig\_21 (DC1), Halo3\_21 (DC1), Jambalaya\_20 (DC1), KimmyK\_22 (DC1), Mutzi\_22 (DC1), Natkenzie\_22 (DE4), Nubi\_20 (DC1), Phlop\_20 (DC1), PinkCoffee\_22 (DC1), Portcullis\_20 (DC1), PullumCavea\_20 (DC1), RogerDodger\_23 (DC1), Salvador\_20 (DC1), Sampson\_22 (DE4), Savbucketdawg\_20 (DC1), Scioto\_22 (DE4), Shinji\_20 (DC1), SmokingBunny\_20 (DC1), Tardus\_23 (DE4), TillyBobJoe\_20 (DC1), Togo\_20 (DC1), Twister6\_22 (DC1), Valary\_23 (DC1), VanDeWege\_23 (DC1), Verity\_22 (DE4), ViaConlectus\_23 (DE4), Wizard\_20 (DC1), YungMoney\_22 (DC1), Zipp\_22 (DE4), Zitch\_24 (DE4),

### Summary by clusters:

There are 13 clusters represented in this pham: GD1, GD2, DE, GD4, DE1, DE2, DE3, DE4, DE5, FC, GD3, DC2, DC1,

Info for manual annotations of cluster DC1:

- Start number 11 was manually annotated 28 times for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 11 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DE1:

- Start number 6 was manually annotated 42 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 4 was manually annotated 7 times for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 4 was manually annotated 6 times for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 11 was manually annotated 9 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 10 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster FC:

- Start number 3 was manually annotated 1 time for cluster FC.

Info for manual annotations of cluster GD1:

- Start number 3 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 3 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 3 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

•Start number 3 was manually annotated 1 time for cluster GD4.

**Gene Information:**

Gene: A3Wally\_89 Start: 46992, Stop: 47873, Start Num: 3

Candidate Starts for A3Wally\_89:

(Start: 3 @46992 has 7 MA's), (16, 47055), (18, 47067), (40, 47304), (53, 47442), (56, 47457), (64, 47535), (79, 47637), (91, 47760), (92, 47775),

Gene: APunk\_24 Start: 18327, Stop: 19151, Start Num: 11

Candidate Starts for APunk\_24:

(8, 18318), (Start: 11 @18327 has 38 MA's), (20, 18399), (26, 18465), (36, 18582), (44, 18639), (50, 18711), (53, 18732), (63, 18813), (65, 18834), (70, 18864), (73, 18885), (77, 18912), (83, 18993), (86, 18999), (88, 19020), (93, 19065), (95, 19077), (100, 19101),

Gene: Abblin\_22 Start: 17540, Stop: 18364, Start Num: 11

Candidate Starts for Abblin\_22:

(Start: 11 @17540 has 38 MA's), (20, 17612), (26, 17678), (30, 17753), (36, 17795), (44, 17852), (50, 17924), (53, 17945), (57, 17966), (63, 18026), (65, 18047), (67, 18068), (70, 18077), (73, 18098), (77, 18125), (81, 18182), (83, 18206), (86, 18212), (88, 18233), (95, 18290), (100, 18314),

Gene: Affeca\_21 Start: 17356, Stop: 18186, Start Num: 6

Candidate Starts for Affeca\_21:

(Start: 6 @17356 has 42 MA's), (9, 17365), (22, 17470), (29, 17560), (36, 17614), (38, 17638), (47, 17701), (50, 17749), (70, 17905), (77, 17953), (81, 18010), (83, 18034), (86, 18040), (94, 18109), (96, 18121), (99, 18139), (101, 18154),

Gene: Ailee\_21 Start: 17270, Stop: 18100, Start Num: 6

Candidate Starts for Ailee\_21:

(Start: 6 @17270 has 42 MA's), (9, 17279), (22, 17384), (28, 17432), (29, 17474), (32, 17498), (38, 17552), (47, 17615), (50, 17663), (54, 17690), (70, 17819), (77, 17867), (81, 17924), (83, 17948), (86, 17954), (94, 18023), (96, 18035), (99, 18053), (101, 18068),

Gene: Ali17\_20 Start: 16677, Stop: 17507, Start Num: 4

Candidate Starts for Ali17\_20:

(Start: 4 @16677 has 13 MA's), (5, 16683), (13, 16710), (14, 16716), (20, 16770), (36, 16941), (37, 16953), (47, 17028), (50, 17076), (63, 17178), (71, 17232), (75, 17262), (77, 17277), (81, 17334), (96, 17445),

Gene: Angelicage\_21 Start: 17779, Stop: 18609, Start Num: 6

Candidate Starts for Angelicage\_21:

(Start: 6 @17779 has 42 MA's), (9, 17788), (22, 17893), (29, 17983), (36, 18037), (38, 18061), (47, 18124), (50, 18172), (70, 18328), (77, 18376), (81, 18433), (83, 18457), (86, 18463), (94, 18532), (96, 18544), (99, 18562), (101, 18577),

Gene: Arri\_23 Start: 14513, Stop: 15325, Start Num: 11

Candidate Starts for Arri\_23:

(Start: 11 @14513 has 38 MA's), (21, 14594), (34, 14744), (50, 14891), (56, 14927), (68, 15041), (102, 15311),

Gene: Ashertheman\_22 Start: 16864, Stop: 17691, Start Num: 6

Candidate Starts for Ashertheman\_22:

(1, 16819), (2, 16825), (Start: 6 @16864 has 42 MA's), (9, 16873), (22, 16975), (29, 17065), (32, 17089), (47, 17206), (50, 17254), (59, 17305), (70, 17410), (72, 17428), (77, 17458), (80, 17479), (81, 17515), (86, 17545), (96, 17626), (99, 17644), (101, 17659),

Gene: Atuin\_80 Start: 48877, Stop: 49749, Start Num: 3

Candidate Starts for Atuin\_80:

(Start: 3 @48877 has 7 MA's), (12, 48922), (55, 49339), (82, 49564),

Gene: Baddon\_21 Start: 17711, Stop: 18538, Start Num: 6

Candidate Starts for Baddon\_21:

(Start: 6 @17711 has 42 MA's), (9, 17720), (22, 17822), (29, 17912), (32, 17936), (47, 18053), (50, 18101), (59, 18152), (63, 18206), (70, 18257), (72, 18275), (77, 18305), (80, 18326), (81, 18362), (86, 18392), (96, 18473), (97, 18476), (99, 18491), (101, 18506),

Gene: Bakery\_21 Start: 13726, Stop: 14538, Start Num: 11

Candidate Starts for Bakery\_21:

(Start: 11 @13726 has 38 MA's), (21, 13807), (34, 13957), (49, 14077), (50, 14104), (68, 14254), (83, 14386), (102, 14524),

Gene: Barb\_22 Start: 14500, Stop: 15312, Start Num: 11

Candidate Starts for Barb\_22:

(Start: 11 @14500 has 38 MA's), (21, 14581), (34, 14731), (50, 14878), (56, 14914), (68, 15028), (102, 15298),

Gene: Barsten\_22 Start: 17286, Stop: 18116, Start Num: 6

Candidate Starts for Barsten\_22:

(Start: 6 @17286 has 42 MA's), (9, 17295), (22, 17400), (29, 17490), (32, 17514), (36, 17544), (38, 17568), (47, 17631), (50, 17679), (54, 17706), (70, 17835), (77, 17883), (81, 17940), (83, 17964), (86, 17970), (94, 18039), (96, 18051), (99, 18069), (101, 18084),

Gene: Baumdotcom\_21 Start: 16480, Stop: 17307, Start Num: 6

Candidate Starts for Baumdotcom\_21:

(Start: 6 @16480 has 42 MA's), (9, 16489), (22, 16591), (29, 16681), (47, 16822), (50, 16870), (59, 16921), (63, 16975), (70, 17026), (72, 17044), (77, 17074), (80, 17095), (81, 17131), (86, 17161), (96, 17242), (99, 17260), (101, 17275),

Gene: Belphegor\_19 Start: 15791, Stop: 16621, Start Num: 4

Candidate Starts for Belphegor\_19:

(Start: 4 @15791 has 13 MA's), (5, 15797), (14, 15830), (20, 15884), (36, 16055), (37, 16067), (50, 16190), (65, 16313), (77, 16391), (81, 16448), (96, 16559),

Gene: Bibwit\_22 Start: 17521, Stop: 18351, Start Num: 6

Candidate Starts for Bibwit\_22:

(Start: 6 @17521 has 42 MA's), (9, 17530), (22, 17635), (29, 17725), (32, 17749), (36, 17779), (38, 17803), (47, 17866), (50, 17914), (54, 17941), (70, 18070), (77, 18118), (81, 18175), (83, 18199), (86, 18205), (94, 18274), (96, 18286), (99, 18304), (101, 18319),

Gene: Big4\_78 Start: 45834, Stop: 46709, Start Num: 3

Candidate Starts for Big4\_78:

(Start: 3 @45834 has 7 MA's), (16, 45897), (18, 45909), (64, 46371),

Gene: Bizzy\_22 Start: 16765, Stop: 17592, Start Num: 6

Candidate Starts for Bizzy\_22:

(Start: 6 @16765 has 42 MA's), (9, 16774), (22, 16876), (29, 16966), (47, 17107), (50, 17155), (59, 17206), (63, 17260), (70, 17311), (72, 17329), (77, 17359), (80, 17380), (81, 17416), (86, 17446), (87, 17461), (96, 17527), (99, 17545), (101, 17560),

Gene: Bloom\_86 Start: 50280, Stop: 51149, Start Num: 3

Candidate Starts for Bloom\_86:

(Start: 3 @50280 has 7 MA's), (23, 50445), (82, 50964), (83, 50982),

Gene: BobBob\_19 Start: 16143, Stop: 16973, Start Num: 6

Candidate Starts for BobBob\_19:

(Start: 6 @16143 has 42 MA's), (9, 16152), (22, 16257), (29, 16347), (36, 16401), (38, 16425), (47, 16488), (50, 16536), (54, 16563), (58, 16584), (60, 16593), (70, 16692), (77, 16740), (81, 16797), (83, 16821), (86, 16827), (94, 16896), (96, 16908), (99, 16926), (101, 16941),

Gene: Brandonk123\_23 Start: 16835, Stop: 17665, Start Num: 6

Candidate Starts for Brandonk123\_23:

(Start: 6 @16835 has 42 MA's), (9, 16844), (22, 16949), (29, 17039), (32, 17063), (38, 17117), (47, 17180), (50, 17228), (54, 17255), (60, 17285), (70, 17384), (77, 17432), (81, 17489), (86, 17519), (94, 17588), (96, 17600), (99, 17618), (101, 17633),

Gene: Cece\_72 Start: 41904, Stop: 42782, Start Num: 3

Candidate Starts for Cece\_72:

(Start: 3 @41904 has 7 MA's), (16, 41967), (18, 41979), (64, 42444), (65, 42456), (85, 42624),

Gene: ChadMasterC\_21 Start: 17242, Stop: 18072, Start Num: 6

Candidate Starts for ChadMasterC\_21:

(Start: 6 @17242 has 42 MA's), (9, 17251), (22, 17356), (29, 17446), (36, 17500), (38, 17524), (47, 17587), (50, 17635), (54, 17662), (70, 17791), (77, 17839), (81, 17896), (83, 17920), (86, 17926), (94, 17995), (96, 18007), (99, 18025), (101, 18040),

Gene: Charming\_19 Start: 16145, Stop: 16975, Start Num: 6

Candidate Starts for Charming\_19:

(Start: 6 @16145 has 42 MA's), (9, 16154), (22, 16259), (29, 16349), (36, 16403), (38, 16427), (47, 16490), (50, 16538), (54, 16565), (58, 16586), (60, 16595), (70, 16694), (77, 16742), (81, 16799), (83, 16823), (86, 16829), (94, 16898), (96, 16910), (99, 16928), (101, 16943),

Gene: Chickadee\_21 Start: 15725, Stop: 16555, Start Num: 4

Candidate Starts for Chickadee\_21:

(Start: 4 @15725 has 13 MA's), (25, 15881), (27, 15893), (33, 15971), (45, 16055), (49, 16097), (50, 16124), (63, 16226), (70, 16277), (83, 16406), (86, 16412), (88, 16433), (96, 16493), (98, 16508),

Gene: ClamChowder\_22 Start: 14500, Stop: 15312, Start Num: 11

Candidate Starts for ClamChowder\_22:

(Start: 11 @14500 has 38 MA's), (21, 14581), (34, 14731), (50, 14878), (56, 14914), (68, 15028), (102, 15298),

Gene: Clown\_24 Start: 16474, Stop: 17325, Start Num: 11

Candidate Starts for Clown\_24:

(Start: 11 @16474 has 38 MA's), (15, 16492), (19, 16516), (21, 16549), (28, 16621), (31, 16684), (42, 16771), (48, 16813), (50, 16858), (65, 16984), (70, 17014), (74, 17044), (83, 17143), (89, 17170),



(101, 17248), (102, 17266),

Gene: Danyall\_22 Start: 14345, Stop: 15157, Start Num: 11

Candidate Starts for Danyall\_22:

(Start: 11 @14345 has 38 MA's), (21, 14426), (34, 14576), (50, 14723), (56, 14759), (68, 14873), (102, 15143),

Gene: Delrey21\_22 Start: 17000, Stop: 17824, Start Num: 11

Candidate Starts for Delrey21\_22:

(Start: 11 @17000 has 38 MA's), (20, 17072), (36, 17255), (41, 17282), (44, 17312), (50, 17384), (53, 17405), (63, 17486), (70, 17537), (73, 17558), (77, 17585), (81, 17642), (83, 17666), (86, 17672), (87, 17687), (88, 17693), (100, 17774), (101, 17786),

Gene: Derg\_19 Start: 16357, Stop: 17184, Start Num: 6

Candidate Starts for Derg\_19:

(Start: 6 @16357 has 42 MA's), (9, 16366), (22, 16468), (29, 16558), (32, 16582), (47, 16699), (50, 16747), (59, 16798), (63, 16852), (70, 16903), (72, 16921), (77, 16951), (80, 16972), (81, 17008), (86, 17038), (87, 17053), (96, 17119), (99, 17137), (101, 17152), (102, 17170),

Gene: Dextert\_22 Start: 16169, Stop: 16999, Start Num: 4

Candidate Starts for Dextert\_22:

(Start: 4 @16169 has 13 MA's), (25, 16325), (27, 16337), (45, 16499), (49, 16541), (50, 16568), (63, 16670), (70, 16721), (83, 16850), (86, 16856), (88, 16877), (96, 16937), (98, 16952),

Gene: DoctorFroggo\_22 Start: 17000, Stop: 17824, Start Num: 11

Candidate Starts for DoctorFroggo\_22:

(Start: 11 @17000 has 38 MA's), (20, 17072), (36, 17255), (41, 17282), (44, 17312), (50, 17384), (53, 17405), (63, 17486), (70, 17537), (73, 17558), (77, 17585), (81, 17642), (83, 17666), (86, 17672), (87, 17687), (88, 17693), (100, 17774), (101, 17786),

Gene: DunneganBoMo\_76 Start: 45738, Stop: 46607, Start Num: 3

Candidate Starts for DunneganBoMo\_76:

(Start: 3 @45738 has 7 MA's), (12, 45783), (18, 45819), (43, 46071), (55, 46200), (65, 46290), (82, 46422),

Gene: EMoore\_17 Start: 15039, Stop: 15869, Start Num: 4

Candidate Starts for EMoore\_17:

(Start: 4 @15039 has 13 MA's), (5, 15045), (13, 15072), (14, 15078), (20, 15132), (36, 15303), (37, 15315), (47, 15390), (50, 15438), (59, 15486), (63, 15540), (71, 15594), (77, 15639), (81, 15696), (96, 15807),

Gene: EdmundFerry\_20 Start: 15753, Stop: 16583, Start Num: 4

Candidate Starts for EdmundFerry\_20:

(Start: 4 @15753 has 13 MA's), (25, 15909), (27, 15921), (33, 15999), (45, 16083), (49, 16125), (50, 16152), (63, 16254), (65, 16275), (70, 16305), (83, 16434), (86, 16440), (88, 16461), (96, 16521),

Gene: Evamon\_20 Start: 13832, Stop: 14644, Start Num: 11

Candidate Starts for Evamon\_20:

(Start: 11 @13832 has 38 MA's), (21, 13913), (34, 14063), (50, 14210), (56, 14246), (68, 14360), (102, 14630),

Gene: Fireball\_21 Start: 13964, Stop: 14776, Start Num: 11

Candidate Starts for Fireball\_21:

(Start: 11 @13964 has 38 MA's), (21, 14045), (34, 14195), (50, 14342), (56, 14378), (68, 14492), (102, 14762),

Gene: Fitzgerald\_19 Start: 16571, Stop: 17401, Start Num: 6

Candidate Starts for Fitzgerald\_19:

(Start: 6 @16571 has 42 MA's), (9, 16580), (22, 16685), (29, 16775), (36, 16829), (38, 16853), (47, 16916), (50, 16964), (70, 17120), (77, 17168), (81, 17225), (83, 17249), (86, 17255), (94, 17324), (96, 17336), (99, 17354), (101, 17369),

Gene: Flatwoods\_22 Start: 16784, Stop: 17611, Start Num: 6

Candidate Starts for Flatwoods\_22:

(Start: 6 @16784 has 42 MA's), (9, 16793), (22, 16895), (29, 16985), (32, 17009), (47, 17126), (50, 17174), (59, 17225), (63, 17279), (70, 17330), (72, 17348), (77, 17378), (80, 17399), (81, 17435), (86, 17465), (87, 17480), (96, 17546), (99, 17564), (101, 17579), (102, 17597),

Gene: Fosterous\_19 Start: 17034, Stop: 17864, Start Num: 6

Candidate Starts for Fosterous\_19:

(Start: 6 @17034 has 42 MA's), (9, 17043), (22, 17148), (28, 17196), (29, 17238), (32, 17262), (36, 17292), (38, 17316), (47, 17379), (50, 17427), (70, 17583), (77, 17631), (81, 17688), (83, 17712), (86, 17718), (94, 17787), (96, 17799), (99, 17817), (101, 17832),

Gene: Fugax\_22 Start: 14500, Stop: 15312, Start Num: 11

Candidate Starts for Fugax\_22:

(Start: 11 @14500 has 38 MA's), (21, 14581), (34, 14731), (50, 14878), (56, 14914), (68, 15028), (102, 15298),

Gene: GTE6\_21 Start: 16242, Stop: 17072, Start Num: 4

Candidate Starts for GTE6\_21:

(Start: 4 @16242 has 13 MA's), (25, 16398), (27, 16410), (33, 16488), (45, 16572), (49, 16614), (50, 16641), (63, 16743), (70, 16794), (83, 16923), (86, 16929), (88, 16950), (96, 17010), (98, 17025), (101, 17043),

Gene: Gaea\_21 Start: 16472, Stop: 17299, Start Num: 6

Candidate Starts for Gaea\_21:

(Start: 6 @16472 has 42 MA's), (9, 16481), (22, 16583), (29, 16673), (47, 16814), (50, 16862), (59, 16913), (63, 16967), (70, 17018), (72, 17036), (77, 17066), (80, 17087), (81, 17123), (86, 17153), (96, 17234), (99, 17252), (101, 17267),

Gene: Galadriel\_23 Start: 16884, Stop: 17714, Start Num: 6

Candidate Starts for Galadriel\_23:

(Start: 6 @16884 has 42 MA's), (9, 16893), (22, 16998), (29, 17088), (36, 17142), (38, 17166), (47, 17229), (50, 17277), (54, 17304), (60, 17334), (70, 17433), (77, 17481), (81, 17538), (83, 17562), (86, 17568), (94, 17637), (96, 17649), (99, 17667), (101, 17682),

Gene: Geodirt\_20 Start: 17101, Stop: 17931, Start Num: 6

Candidate Starts for Geodirt\_20:

(Start: 6 @17101 has 42 MA's), (9, 17110), (22, 17215), (29, 17305), (32, 17329), (36, 17359), (38, 17383), (47, 17446), (50, 17494), (54, 17521), (70, 17650), (77, 17698), (81, 17755), (86, 17785), (94, 17854), (96, 17866), (99, 17884), (101, 17899),

Gene: Gezellig\_21 Start: 13964, Stop: 14776, Start Num: 11

Candidate Starts for Gezellig\_21:

(Start: 11 @13964 has 38 MA's), (21, 14045), (34, 14195), (50, 14342), (56, 14378), (68, 14492), (102, 14762),

Gene: Gustavo\_21 Start: 16571, Stop: 17398, Start Num: 6

Candidate Starts for Gustavo\_21:

(Start: 6 @16571 has 42 MA's), (9, 16580), (22, 16682), (29, 16772), (47, 16913), (50, 16961), (59, 17012), (63, 17066), (70, 17117), (72, 17135), (77, 17165), (80, 17186), (81, 17222), (86, 17252), (96, 17333), (99, 17351), (101, 17366),

Gene: Halo3\_21 Start: 14285, Stop: 15097, Start Num: 11

Candidate Starts for Halo3\_21:

(Start: 11 @14285 has 38 MA's), (21, 14366), (34, 14516), (49, 14636), (50, 14663), (68, 14813), (83, 14945), (102, 15083),

Gene: Hans\_24 Start: 17335, Stop: 18165, Start Num: 4

Candidate Starts for Hans\_24:

(Start: 4 @17335 has 13 MA's), (5, 17341), (13, 17368), (14, 17374), (20, 17428), (36, 17599), (37, 17611), (47, 17686), (50, 17734), (63, 17836), (71, 17890), (77, 17935), (81, 17992), (96, 18103),

Gene: Inspectinfecti\_23 Start: 17760, Stop: 18590, Start Num: 4

Candidate Starts for Inspectinfecti\_23:

(Start: 4 @17760 has 13 MA's), (5, 17766), (13, 17793), (14, 17799), (20, 17853), (36, 18024), (37, 18036), (47, 18111), (50, 18159), (63, 18261), (71, 18315), (77, 18360), (81, 18417), (96, 18528),

Gene: JKSyngboy\_20 Start: 17230, Stop: 18057, Start Num: 6

Candidate Starts for JKSyngboy\_20:

(Start: 6 @17230 has 42 MA's), (9, 17239), (22, 17341), (32, 17455), (47, 17572), (50, 17620), (59, 17671), (63, 17725), (70, 17776), (72, 17794), (77, 17824), (80, 17845), (81, 17881), (86, 17911), (96, 17992), (99, 18010), (101, 18025),

Gene: Jabberwocky\_19 Start: 17005, Stop: 17835, Start Num: 6

Candidate Starts for Jabberwocky\_19:

(Start: 6 @17005 has 42 MA's), (9, 17014), (22, 17119), (29, 17209), (36, 17263), (38, 17287), (47, 17350), (50, 17398), (54, 17425), (70, 17554), (77, 17602), (81, 17659), (83, 17683), (86, 17689), (94, 17758), (96, 17770), (99, 17788), (101, 17803),

Gene: Jambalaya\_20 Start: 13611, Stop: 14423, Start Num: 11

Candidate Starts for Jambalaya\_20:

(Start: 11 @13611 has 38 MA's), (21, 13692), (34, 13842), (50, 13989), (56, 14025), (68, 14139), (102, 14409),

Gene: Kamashten\_22 Start: 17689, Stop: 18519, Start Num: 6

Candidate Starts for Kamashten\_22:

(Start: 6 @17689 has 42 MA's), (9, 17698), (22, 17803), (29, 17893), (36, 17947), (38, 17971), (47, 18034), (50, 18082), (54, 18109), (70, 18238), (77, 18286), (81, 18343), (83, 18367), (86, 18373), (94, 18442), (96, 18454), (99, 18472), (101, 18487),

Gene: Keitabear\_23 Start: 19226, Stop: 20056, Start Num: 6

Candidate Starts for Keitabear\_23:

(Start: 6 @19226 has 42 MA's), (9, 19235), (22, 19340), (28, 19388), (29, 19430), (32, 19454), (38, 19508), (47, 19571), (50, 19619), (54, 19646), (70, 19775), (77, 19823), (81, 19880), (83, 19904), (86, 19910), (94, 19979), (96, 19991), (99, 20009), (101, 20024),

Gene: Kewpiedoll\_22 Start: 17077, Stop: 17907, Start Num: 6

Candidate Starts for Kewpiedoll\_22:

(Start: 6 @17077 has 42 MA's), (9, 17086), (22, 17191), (29, 17281), (32, 17305), (36, 17335), (38, 17359), (47, 17422), (50, 17470), (54, 17497), (70, 17626), (77, 17674), (81, 17731), (86, 17761), (94, 17830), (96, 17842), (99, 17860), (101, 17875),

Gene: KimmyK\_22 Start: 14500, Stop: 15312, Start Num: 11

Candidate Starts for KimmyK\_22:

(Start: 11 @14500 has 38 MA's), (21, 14581), (34, 14731), (50, 14878), (56, 14914), (68, 15028), (102, 15298),

Gene: Kroos\_22 Start: 17329, Stop: 18156, Start Num: 6

Candidate Starts for Kroos\_22:

(Start: 6 @17329 has 42 MA's), (9, 17338), (22, 17440), (24, 17467), (29, 17530), (32, 17554), (47, 17671), (50, 17719), (59, 17770), (63, 17824), (70, 17875), (72, 17893), (77, 17923), (80, 17944), (81, 17980), (86, 18010), (96, 18091), (99, 18109), (101, 18124),

Gene: Kwekel\_21 Start: 15688, Stop: 16518, Start Num: 4

Candidate Starts for Kwekel\_21:

(Start: 4 @15688 has 13 MA's), (20, 15778), (27, 15856), (45, 16018), (49, 16060), (50, 16087), (61, 16162), (63, 16189), (70, 16240), (83, 16369), (86, 16375), (88, 16396), (96, 16456), (98, 16471),

Gene: Kwobi\_22 Start: 17311, Stop: 18138, Start Num: 6

Candidate Starts for Kwobi\_22:

(Start: 6 @17311 has 42 MA's), (9, 17320), (22, 17422), (29, 17512), (47, 17653), (50, 17701), (59, 17752), (63, 17806), (70, 17857), (72, 17875), (77, 17905), (80, 17926), (81, 17962), (86, 17992), (96, 18073), (99, 18091), (101, 18106),

Gene: Lennon\_23 Start: 18329, Stop: 19159, Start Num: 6

Candidate Starts for Lennon\_23:

(Start: 6 @18329 has 42 MA's), (9, 18338), (22, 18443), (29, 18533), (32, 18557), (36, 18587), (38, 18611), (47, 18674), (50, 18722), (54, 18749), (70, 18878), (77, 18926), (81, 18983), (83, 19007), (86, 19013), (94, 19082), (96, 19094), (99, 19112), (101, 19127),

Gene: Leonard\_22 Start: 17355, Stop: 18185, Start Num: 4

Candidate Starts for Leonard\_22:

(Start: 4 @17355 has 13 MA's), (5, 17361), (13, 17388), (14, 17394), (20, 17448), (36, 17619), (37, 17631), (47, 17706), (50, 17754), (63, 17856), (71, 17910), (75, 17940), (77, 17955), (81, 18012), (96, 18123),

Gene: LilHam\_19 Start: 15890, Stop: 16717, Start Num: 6

Candidate Starts for LilHam\_19:

(Start: 6 @15890 has 42 MA's), (9, 15899), (22, 16001), (32, 16115), (47, 16232), (50, 16280), (59, 16331), (63, 16385), (70, 16436), (72, 16454), (77, 16484), (80, 16505), (81, 16541), (86, 16571), (96, 16652), (99, 16670), (101, 16685),

Gene: Lilbeanie\_19 Start: 12678, Stop: 13550, Start Num: 10

Candidate Starts for Lilbeanie\_19:

(Start: 10 @12678 has 1 MA's), (36, 12936), (41, 12969), (46, 13014), (51, 13089), (60, 13146), (62, 13173), (63, 13194), (65, 13215), (66, 13224), (69, 13242), (70, 13245), (72, 13263), (73, 13266), (77, 13293), (86, 13386), (94, 13455), (99, 13485), (102, 13518),

Gene: Love\_23 Start: 17204, Stop: 18034, Start Num: 6

Candidate Starts for Love\_23:

(Start: 6 @17204 has 42 MA's), (9, 17213), (22, 17318), (29, 17408), (36, 17462), (38, 17486), (47, 17549), (50, 17597), (54, 17624), (60, 17654), (70, 17753), (77, 17801), (81, 17858), (83, 17882), (86, 17888), (94, 17957), (96, 17969), (99, 17987), (101, 18002),

Gene: McKinley\_22 Start: 17230, Stop: 18060, Start Num: 6

Candidate Starts for McKinley\_22:

(Start: 6 @17230 has 42 MA's), (9, 17239), (22, 17344), (29, 17434), (36, 17488), (38, 17512), (47, 17575), (50, 17623), (54, 17650), (60, 17680), (70, 17779), (77, 17827), (81, 17884), (83, 17908), (86, 17914), (94, 17983), (96, 17995), (99, 18013), (101, 18028),

Gene: MelBins\_23 Start: 17556, Stop: 18386, Start Num: 4

Candidate Starts for MelBins\_23:

(Start: 4 @17556 has 13 MA's), (5, 17562), (13, 17589), (14, 17595), (20, 17649), (36, 17820), (37, 17832), (50, 17955), (63, 18057), (71, 18111), (75, 18141), (77, 18156), (81, 18213), (96, 18324),

Gene: Mimi\_89 Start: 49627, Stop: 50496, Start Num: 3

Candidate Starts for Mimi\_89:

(Start: 3 @49627 has 7 MA's), (23, 49792), (82, 50311), (83, 50329),

Gene: MoontowerMania\_20 Start: 16210, Stop: 17040, Start Num: 6

Candidate Starts for MoontowerMania\_20:

(Start: 6 @16210 has 42 MA's), (9, 16219), (22, 16324), (29, 16414), (36, 16468), (38, 16492), (47, 16555), (50, 16603), (54, 16630), (60, 16660), (70, 16759), (77, 16807), (81, 16864), (83, 16888), (86, 16894), (94, 16963), (96, 16975), (99, 16993), (101, 17008),

Gene: Mutzi\_22 Start: 14224, Stop: 15036, Start Num: 11

Candidate Starts for Mutzi\_22:

(Start: 11 @14224 has 38 MA's), (21, 14305), (34, 14455), (50, 14602), (56, 14638), (68, 14752), (102, 15022),

Gene: Natkenzie\_22 Start: 17540, Stop: 18364, Start Num: 11

Candidate Starts for Natkenzie\_22:

(Start: 11 @17540 has 38 MA's), (20, 17612), (26, 17678), (30, 17753), (36, 17795), (44, 17852), (50, 17924), (53, 17945), (57, 17966), (63, 18026), (65, 18047), (67, 18068), (70, 18077), (73, 18098), (77, 18125), (81, 18182), (83, 18206), (86, 18212), (88, 18233), (95, 18290), (100, 18314),

Gene: Nordenberg\_16 Start: 15524, Stop: 16354, Start Num: 6

Candidate Starts for Nordenberg\_16:

(Start: 6 @15524 has 42 MA's), (9, 15533), (22, 15638), (29, 15728), (36, 15782), (38, 15806), (47, 15869), (50, 15917), (54, 15944), (60, 15974), (70, 16073), (77, 16121), (81, 16178), (83, 16202), (86, 16208), (94, 16277), (96, 16289), (99, 16307), (101, 16322),

Gene: Nubi\_20 Start: 13852, Stop: 14664, Start Num: 11

Candidate Starts for Nubi\_20:

(Start: 11 @13852 has 38 MA's), (21, 13933), (34, 14083), (50, 14230), (56, 14266), (68, 14380), (102, 14650),

Gene: Paries\_22 Start: 16892, Stop: 17722, Start Num: 6

Candidate Starts for Paries\_22:

(Start: 6 @16892 has 42 MA's), (9, 16901), (22, 17006), (29, 17096), (32, 17120), (38, 17174), (47, 17237), (50, 17285), (54, 17312), (60, 17342), (70, 17441), (77, 17489), (81, 17546), (86, 17576), (94, 17645), (96, 17657), (99, 17675), (101, 17690),

Gene: Patbob\_83 Start: 50499, Stop: 51368, Start Num: 3  
Candidate Starts for Patbob\_83:  
(Start: 3 @50499 has 7 MA's), (23, 50664), (82, 51183), (83, 51201),

Gene: PauloDiaboli\_89 Start: 46349, Stop: 47230, Start Num: 3  
Candidate Starts for PauloDiaboli\_89:  
(Start: 3 @46349 has 7 MA's), (16, 46412), (18, 46424), (40, 46661), (53, 46799), (56, 46814), (64, 46892), (79, 46994), (91, 47117), (92, 47132),

Gene: Phauci\_15 Start: 13922, Stop: 14752, Start Num: 4  
Candidate Starts for Phauci\_15:  
(Start: 4 @13922 has 13 MA's), (5, 13928), (13, 13955), (14, 13961), (20, 14015), (36, 14186), (37, 14198), (47, 14273), (50, 14321), (63, 14423), (71, 14477), (77, 14522), (81, 14579), (96, 14690),

Gene: Phinally\_22 Start: 17352, Stop: 18182, Start Num: 4  
Candidate Starts for Phinally\_22:  
(Start: 4 @17352 has 13 MA's), (5, 17358), (13, 17385), (14, 17391), (20, 17445), (36, 17616), (37, 17628), (47, 17703), (50, 17751), (63, 17853), (71, 17907), (75, 17937), (77, 17952), (81, 18009), (96, 18120),

Gene: Phlop\_20 Start: 13916, Stop: 14728, Start Num: 11  
Candidate Starts for Phlop\_20:  
(Start: 11 @13916 has 38 MA's), (21, 13997), (34, 14147), (50, 14294), (56, 14330), (68, 14444), (102, 14714),

Gene: PinkCoffee\_22 Start: 14509, Stop: 15321, Start Num: 11  
Candidate Starts for PinkCoffee\_22:  
(Start: 11 @14509 has 38 MA's), (21, 14590), (34, 14740), (50, 14887), (56, 14923), (68, 15037), (102, 15307),

Gene: Portcullis\_20 Start: 13859, Stop: 14671, Start Num: 11  
Candidate Starts for Portcullis\_20:  
(Start: 11 @13859 has 38 MA's), (21, 13940), (34, 14090), (50, 14237), (56, 14273), (68, 14387), (102, 14657),

Gene: PullumCavea\_20 Start: 13916, Stop: 14728, Start Num: 11  
Candidate Starts for PullumCavea\_20:  
(Start: 11 @13916 has 38 MA's), (21, 13997), (34, 14147), (50, 14294), (56, 14330), (68, 14444), (102, 14714),

Gene: Pumpernickel\_86 Start: 47559, Stop: 48443, Start Num: 3  
Candidate Starts for Pumpernickel\_86:  
(Start: 3 @47559 has 7 MA's), (16, 47625), (17, 47634), (35, 47835), (40, 47874), (64, 48105), (65, 48117), (85, 48285), (88, 48309), (90, 48327), (91, 48330),

Gene: Racecar\_83 Start: 50280, Stop: 51149, Start Num: 3  
Candidate Starts for Racecar\_83:  
(Start: 3 @50280 has 7 MA's), (23, 50445), (82, 50964), (83, 50982),

Gene: Ribeye\_22 Start: 17792, Stop: 18619, Start Num: 6  
Candidate Starts for Ribeye\_22:

(Start: 6 @17792 has 42 MA's), (9, 17801), (22, 17903), (29, 17993), (47, 18134), (50, 18182), (59, 18233), (63, 18287), (70, 18338), (72, 18356), (77, 18386), (80, 18407), (81, 18443), (86, 18473), (96, 18554), (99, 18572), (101, 18587), (102, 18605),

Gene: RiverRaider\_23 Start: 16172, Stop: 17002, Start Num: 6

Candidate Starts for RiverRaider\_23:

(Start: 6 @16172 has 42 MA's), (7, 16175), (9, 16181), (22, 16286), (47, 16517), (50, 16565), (59, 16616), (70, 16721), (72, 16739), (73, 16742), (77, 16769), (81, 16826), (83, 16850), (84, 16853), (86, 16856), (92, 16913), (96, 16937), (99, 16955),

Gene: RoadKill\_19 Start: 15230, Stop: 16060, Start Num: 4

Candidate Starts for RoadKill\_19:

(Start: 4 @15230 has 13 MA's), (25, 15386), (27, 15398), (33, 15476), (45, 15560), (49, 15602), (50, 15629), (63, 15731), (65, 15752), (70, 15782), (83, 15911), (86, 15917), (88, 15938), (96, 15998),

Gene: Rofo\_21 Start: 17144, Stop: 17974, Start Num: 6

Candidate Starts for Rofo\_21:

(Start: 6 @17144 has 42 MA's), (9, 17153), (22, 17258), (29, 17348), (36, 17402), (38, 17426), (47, 17489), (50, 17537), (54, 17564), (60, 17594), (70, 17693), (77, 17741), (81, 17798), (83, 17822), (86, 17828), (94, 17897), (96, 17909), (99, 17927), (101, 17942),

Gene: RogerDodger\_23 Start: 14709, Stop: 15521, Start Num: 11

Candidate Starts for RogerDodger\_23:

(Start: 11 @14709 has 38 MA's), (21, 14790), (34, 14940), (50, 15087), (56, 15123), (68, 15237), (102, 15507),

Gene: SJReid\_87 Start: 51543, Stop: 52412, Start Num: 3

Candidate Starts for SJReid\_87:

(Start: 3 @51543 has 7 MA's), (52, 51981), (57, 52011), (76, 52158), (82, 52227),

Gene: Salvador\_20 Start: 13830, Stop: 14642, Start Num: 11

Candidate Starts for Salvador\_20:

(Start: 11 @13830 has 38 MA's), (21, 13911), (34, 14061), (50, 14208), (56, 14244), (68, 14358), (102, 14628),

Gene: Sampson\_22 Start: 17485, Stop: 18309, Start Num: 11

Candidate Starts for Sampson\_22:

(Start: 11 @17485 has 38 MA's), (20, 17557), (26, 17623), (30, 17698), (36, 17740), (44, 17797), (50, 17869), (53, 17890), (57, 17911), (63, 17971), (65, 17992), (67, 18013), (70, 18022), (73, 18043), (77, 18070), (81, 18127), (83, 18151), (86, 18157), (88, 18178), (95, 18235), (100, 18259),

Gene: Sanjuju\_19 Start: 16656, Stop: 17486, Start Num: 6

Candidate Starts for Sanjuju\_19:

(Start: 6 @16656 has 42 MA's), (9, 16665), (22, 16770), (29, 16860), (36, 16914), (38, 16938), (47, 17001), (50, 17049), (54, 17076), (70, 17205), (77, 17253), (81, 17310), (83, 17334), (86, 17340), (94, 17409), (96, 17421), (99, 17439), (101, 17454),

Gene: Saronaya\_21 Start: 16571, Stop: 17398, Start Num: 6

Candidate Starts for Saronaya\_21:

(Start: 6 @16571 has 42 MA's), (9, 16580), (22, 16682), (29, 16772), (47, 16913), (50, 16961), (59, 17012), (63, 17066), (70, 17117), (72, 17135), (77, 17165), (80, 17186), (81, 17222), (86, 17252), (96, 17333), (99, 17351), (101, 17366),

Gene: Savbucketdawg\_20 Start: 13611, Stop: 14423, Start Num: 11

Candidate Starts for Savbucketdawg\_20:

(Start: 11 @13611 has 38 MA's), (21, 13692), (34, 13842), (50, 13989), (56, 14025), (68, 14139), (102, 14409),

Gene: SchottB\_20 Start: 17572, Stop: 18399, Start Num: 6

Candidate Starts for SchottB\_20:

(Start: 6 @17572 has 42 MA's), (9, 17581), (22, 17683), (32, 17797), (47, 17914), (50, 17962), (59, 18013), (63, 18067), (70, 18118), (72, 18136), (77, 18166), (80, 18187), (81, 18223), (86, 18253), (96, 18334), (99, 18352), (101, 18367),

Gene: Scioto\_22 Start: 17540, Stop: 18364, Start Num: 11

Candidate Starts for Scioto\_22:

(Start: 11 @17540 has 38 MA's), (20, 17612), (26, 17678), (30, 17753), (36, 17795), (44, 17852), (50, 17924), (53, 17945), (57, 17966), (63, 18026), (65, 18047), (67, 18068), (70, 18077), (73, 18098), (77, 18125), (81, 18182), (83, 18206), (86, 18212), (88, 18233), (95, 18290), (100, 18314),

Gene: Sedona\_23 Start: 18961, Stop: 19791, Start Num: 6

Candidate Starts for Sedona\_23:

(Start: 6 @18961 has 42 MA's), (9, 18970), (22, 19075), (29, 19165), (32, 19189), (36, 19219), (38, 19243), (47, 19306), (50, 19354), (54, 19381), (70, 19510), (77, 19558), (81, 19615), (83, 19639), (86, 19645), (94, 19714), (96, 19726), (99, 19744), (101, 19759),

Gene: Shinji\_20 Start: 13800, Stop: 14612, Start Num: 11

Candidate Starts for Shinji\_20:

(Start: 11 @13800 has 38 MA's), (21, 13881), (34, 14031), (50, 14178), (56, 14214), (68, 14328), (102, 14598),

Gene: Shivanishola\_21 Start: 16950, Stop: 17780, Start Num: 6

Candidate Starts for Shivanishola\_21:

(Start: 6 @16950 has 42 MA's), (9, 16959), (22, 17064), (29, 17154), (36, 17208), (38, 17232), (47, 17295), (50, 17343), (54, 17370), (58, 17391), (60, 17400), (70, 17499), (77, 17547), (81, 17604), (83, 17628), (86, 17634), (94, 17703), (96, 17715), (99, 17733), (101, 17748),

Gene: Sitar\_23 Start: 18329, Stop: 19159, Start Num: 6

Candidate Starts for Sitar\_23:

(Start: 6 @18329 has 42 MA's), (9, 18338), (22, 18443), (29, 18533), (32, 18557), (36, 18587), (38, 18611), (47, 18674), (50, 18722), (54, 18749), (70, 18878), (77, 18926), (81, 18983), (83, 19007), (86, 19013), (94, 19082), (96, 19094), (99, 19112), (101, 19127),

Gene: SmokingBunny\_20 Start: 13830, Stop: 14642, Start Num: 11

Candidate Starts for SmokingBunny\_20:

(Start: 11 @13830 has 38 MA's), (21, 13911), (34, 14061), (50, 14208), (56, 14244), (68, 14358), (102, 14628),

Gene: StorminNorm\_21 Start: 16451, Stop: 17278, Start Num: 6

Candidate Starts for StorminNorm\_21:

(Start: 6 @16451 has 42 MA's), (9, 16460), (22, 16562), (24, 16589), (29, 16652), (32, 16676), (47, 16793), (50, 16841), (59, 16892), (63, 16946), (70, 16997), (72, 17015), (77, 17045), (80, 17066), (81, 17102), (86, 17132), (96, 17213), (99, 17231), (101, 17246),

Gene: Stultus\_21 Start: 16940, Stop: 17770, Start Num: 6

Candidate Starts for Stultus\_21:



(Start: 6 @16940 has 42 MA's), (9, 16949), (22, 17054), (29, 17144), (32, 17168), (36, 17198), (38, 17222), (47, 17285), (50, 17333), (54, 17360), (70, 17489), (77, 17537), (81, 17594), (83, 17618), (86, 17624), (94, 17693), (96, 17705), (99, 17723), (101, 17738),

Gene: Talia1610\_86 Start: 49645, Stop: 50514, Start Num: 3

Candidate Starts for Talia1610\_86:

(Start: 3 @49645 has 7 MA's), (23, 49810), (82, 50329), (83, 50347),

Gene: Tangent\_19 Start: 16145, Stop: 16975, Start Num: 6

Candidate Starts for Tangent\_19:

(Start: 6 @16145 has 42 MA's), (9, 16154), (22, 16259), (29, 16349), (36, 16403), (38, 16427), (47, 16490), (50, 16538), (54, 16565), (58, 16586), (60, 16595), (70, 16694), (77, 16742), (81, 16799), (83, 16823), (86, 16829), (94, 16898), (96, 16910), (99, 16928), (101, 16943),

Gene: Tangerine\_21 Start: 16457, Stop: 17284, Start Num: 6

Candidate Starts for Tangerine\_21:

(Start: 6 @16457 has 42 MA's), (9, 16466), (22, 16568), (24, 16595), (29, 16658), (32, 16682), (47, 16799), (50, 16847), (59, 16898), (63, 16952), (70, 17003), (72, 17021), (77, 17051), (80, 17072), (81, 17108), (86, 17138), (96, 17219), (99, 17237), (101, 17252),

Gene: Tardus\_23 Start: 16820, Stop: 17644, Start Num: 11

Candidate Starts for Tardus\_23:

(Start: 11 @16820 has 38 MA's), (20, 16892), (36, 17075), (44, 17132), (50, 17204), (53, 17225), (63, 17306), (65, 17327), (70, 17357), (73, 17378), (77, 17405), (81, 17462), (83, 17486), (86, 17492), (88, 17513), (95, 17570), (100, 17594),

Gene: Thing3\_22 Start: 17689, Stop: 18519, Start Num: 6

Candidate Starts for Thing3\_22:

(Start: 6 @17689 has 42 MA's), (9, 17698), (22, 17803), (29, 17893), (36, 17947), (38, 17971), (47, 18034), (50, 18082), (54, 18109), (70, 18238), (77, 18286), (81, 18343), (83, 18367), (86, 18373), (94, 18442), (96, 18454), (99, 18472), (101, 18487),

Gene: Tiamoceli\_22 Start: 16582, Stop: 17412, Start Num: 4

Candidate Starts for Tiamoceli\_22:

(Start: 4 @16582 has 13 MA's), (25, 16738), (27, 16750), (33, 16828), (45, 16912), (49, 16954), (50, 16981), (63, 17083), (70, 17134), (83, 17263), (86, 17269), (88, 17290), (96, 17350), (98, 17365),

Gene: TillyBobJoe\_20 Start: 13614, Stop: 14426, Start Num: 11

Candidate Starts for TillyBobJoe\_20:

(Start: 11 @13614 has 38 MA's), (21, 13695), (34, 13845), (50, 13992), (56, 14028), (68, 14142), (102, 14412),

Gene: Togo\_20 Start: 13830, Stop: 14642, Start Num: 11

Candidate Starts for Togo\_20:

(Start: 11 @13830 has 38 MA's), (21, 13911), (34, 14061), (50, 14208), (56, 14244), (68, 14358), (102, 14628),

Gene: Twister6\_22 Start: 14256, Stop: 15068, Start Num: 11

Candidate Starts for Twister6\_22:

(Start: 11 @14256 has 38 MA's), (21, 14337), (34, 14487), (50, 14634), (56, 14670), (68, 14784), (102, 15054),

Gene: Twonlo\_19 Start: 15199, Stop: 16029, Start Num: 4

Candidate Starts for Twonlo\_19:

(Start: 4 @15199 has 13 MA's), (25, 15355), (27, 15367), (33, 15445), (39, 15490), (45, 15529), (49, 15571), (50, 15598), (63, 15700), (70, 15751), (83, 15880), (86, 15886), (88, 15907), (96, 15967), (98, 15982),

Gene: Tycho\_21 Start: 16586, Stop: 17413, Start Num: 6

Candidate Starts for Tycho\_21:

(Start: 6 @16586 has 42 MA's), (9, 16595), (22, 16697), (29, 16787), (47, 16928), (50, 16976), (59, 17027), (63, 17081), (70, 17132), (72, 17150), (77, 17180), (80, 17201), (81, 17237), (86, 17267), (96, 17348), (99, 17366), (101, 17381),

Gene: Valary\_23 Start: 14709, Stop: 15521, Start Num: 11

Candidate Starts for Valary\_23:

(Start: 11 @14709 has 38 MA's), (21, 14790), (34, 14940), (50, 15087), (56, 15123), (68, 15237), (102, 15507),

Gene: VanDeWege\_23 Start: 14637, Stop: 15449, Start Num: 11

Candidate Starts for VanDeWege\_23:

(Start: 11 @14637 has 38 MA's), (21, 14718), (34, 14868), (50, 15015), (56, 15051), (68, 15165), (102, 15435),

Gene: Verity\_22 Start: 17000, Stop: 17824, Start Num: 11

Candidate Starts for Verity\_22:

(Start: 11 @17000 has 38 MA's), (20, 17072), (36, 17255), (41, 17282), (44, 17312), (50, 17384), (53, 17405), (63, 17486), (70, 17537), (73, 17558), (77, 17585), (81, 17642), (83, 17666), (86, 17672), (87, 17687), (88, 17693), (100, 17774), (101, 17786),

Gene: ViaConlectus\_23 Start: 17552, Stop: 18376, Start Num: 11

Candidate Starts for ViaConlectus\_23:

(Start: 11 @17552 has 38 MA's), (20, 17624), (26, 17690), (36, 17807), (44, 17864), (50, 17936), (53, 17957), (63, 18038), (65, 18059), (70, 18089), (73, 18110), (77, 18137), (83, 18218), (86, 18224), (88, 18245), (93, 18290), (95, 18302), (100, 18326),

Gene: Vivi2\_21 Start: 17307, Stop: 18137, Start Num: 6

Candidate Starts for Vivi2\_21:

(Start: 6 @17307 has 42 MA's), (9, 17316), (22, 17421), (29, 17511), (36, 17565), (38, 17589), (47, 17652), (50, 17700), (54, 17727), (60, 17757), (70, 17856), (77, 17904), (81, 17961), (83, 17985), (86, 17991), (94, 18060), (96, 18072), (99, 18090), (101, 18105),

Gene: Wizard\_20 Start: 13964, Stop: 14776, Start Num: 11

Candidate Starts for Wizard\_20:

(Start: 11 @13964 has 38 MA's), (21, 14045), (34, 14195), (50, 14342), (56, 14378), (68, 14492), (102, 14762),

Gene: YorkOnyx\_22 Start: 16855, Stop: 17682, Start Num: 6

Candidate Starts for YorkOnyx\_22:

(Start: 6 @16855 has 42 MA's), (9, 16864), (22, 16966), (29, 17056), (47, 17197), (50, 17245), (59, 17296), (63, 17350), (70, 17401), (72, 17419), (77, 17449), (80, 17470), (81, 17506), (86, 17536), (96, 17617), (99, 17635), (101, 17650),

Gene: YungMoney\_22 Start: 15274, Stop: 16086, Start Num: 11

Candidate Starts for YungMoney\_22:

(Start: 11 @15274 has 38 MA's), (21, 15355), (34, 15505), (49, 15625), (50, 15652), (68, 15802), (78, 15856), (83, 15934), (102, 16072),

Gene: Zipp\_22 Start: 17649, Stop: 18473, Start Num: 11

Candidate Starts for Zipp\_22:

(Start: 11 @17649 has 38 MA's), (20, 17721), (36, 17904), (41, 17931), (44, 17961), (50, 18033), (53, 18054), (63, 18135), (70, 18186), (73, 18207), (77, 18234), (81, 18291), (83, 18315), (86, 18321), (87, 18336), (88, 18342), (100, 18423), (101, 18435),

Gene: Zitch\_24 Start: 16782, Stop: 17606, Start Num: 11

Candidate Starts for Zitch\_24:

(8, 16773), (Start: 11 @16782 has 38 MA's), (20, 16854), (26, 16920), (36, 17037), (44, 17094), (50, 17166), (53, 17187), (63, 17268), (65, 17289), (70, 17319), (73, 17340), (77, 17367), (83, 17448), (86, 17454), (88, 17475), (100, 17556),

Gene: Zooman\_74 Start: 44530, Stop: 45405, Start Num: 3

Candidate Starts for Zooman\_74:

(Start: 3 @44530 has 7 MA's), (16, 44593), (18, 44605), (64, 45067),