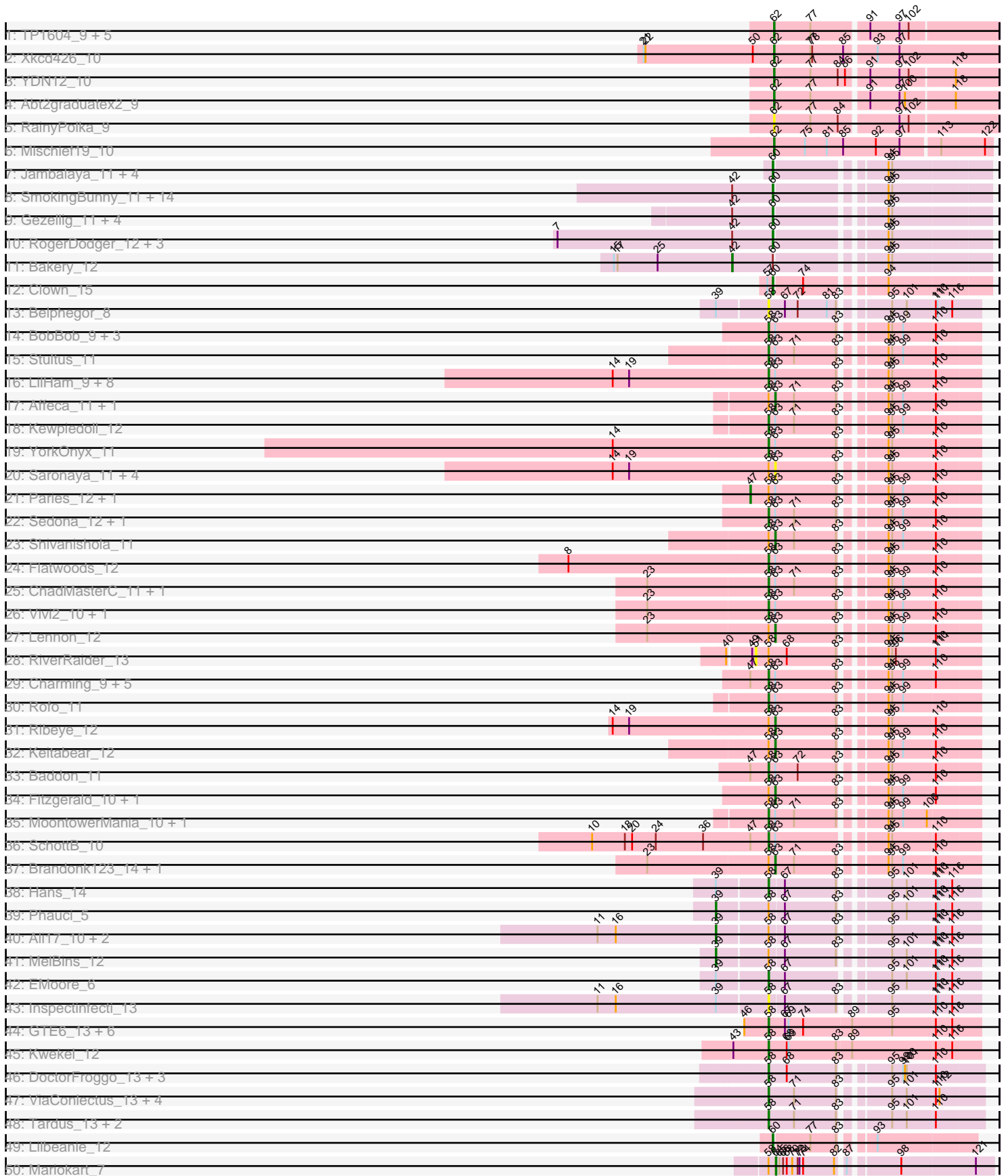
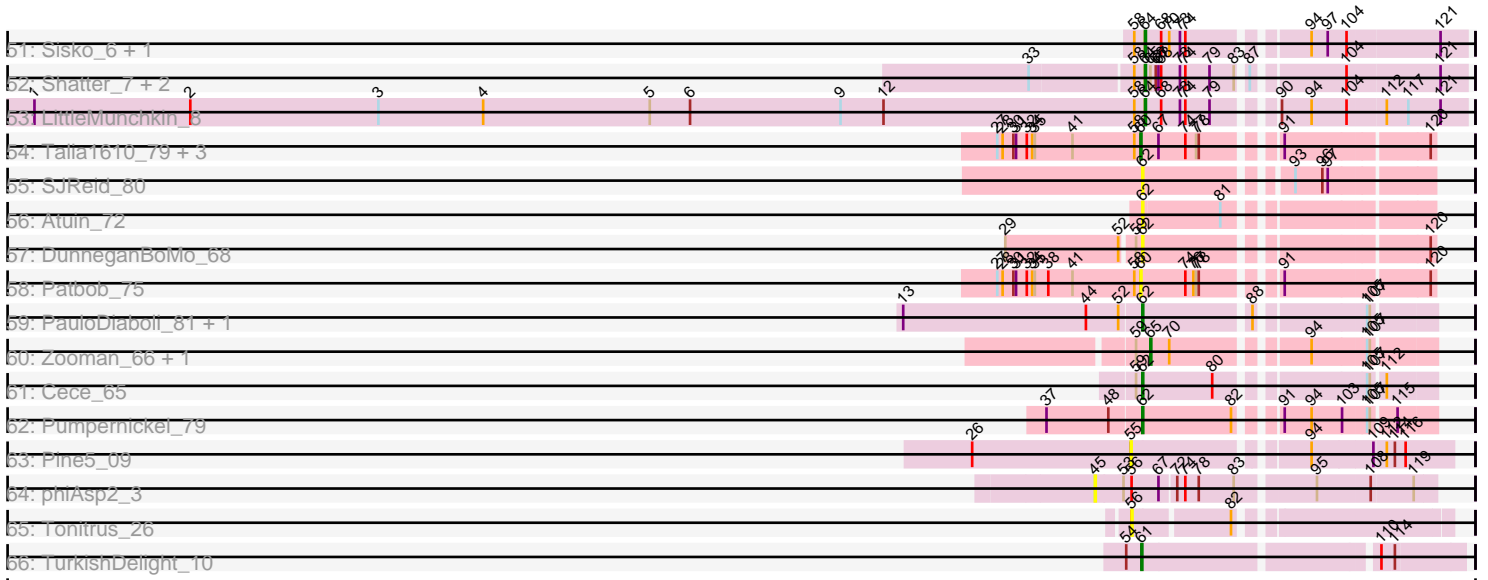


Pham 157654



Pham 157654



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 157654 Report

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

Pham number 157654 has 149 members, 31 are drafts.

Phages represented in each track:

- Track 1 : TP1604\_9, Asis\_9, Salete\_9, BabyGotBac\_9, Maih\_9, BayC\_9
- Track 2 : Xkcd426\_10
- Track 3 : YDN12\_10
- Track 4 : Abt2graduatex2\_9
- Track 5 : RainyPolka\_9
- Track 6 : Mischief19\_10
- Track 7 : Jambalaya\_11, Savbucketdawg\_11, TillyBobJoe\_11, Shinji\_11, Portcullis\_11
- Track 8 : SmokingBunny\_11, Salvador\_11, Twister6\_11, Arri\_12, Danyall\_11, Fugax\_11, VanDeWege\_12, Nubi\_11, Mutzi\_11, Evamon\_11, PinkCoffee\_11, KimmyK\_11, ClamChowder\_11, Togo\_11, Barb\_11
- Track 9 : Gezellig\_11, Phlop\_11, Wizard\_11, Fireball\_12, PullumCavea\_11
- Track 10 : RogerDodger\_12, Valary\_12, YungMoney\_11, Halo3\_12
- Track 11 : Bakery\_12
- Track 12 : Clown\_15
- Track 13 : Belphegor\_8
- Track 14 : BobBob\_9, Sanjuju\_10, Angelicage\_11, Jabberwocky\_10
- Track 15 : Stultus\_11
- Track 16 : LilHam\_9, Kroos\_11, Tangerine\_11, StorminNorm\_11, Gaea\_11, Baumdotcom\_11, Bizzy\_12, Ashertheman\_11, JKSyngboy\_10
- Track 17 : Affeca\_11, McKinley\_12
- Track 18 : Kewpiedoll\_12
- Track 19 : YorkOnyx\_11
- Track 20 : Saronaya\_11, Tycho\_11, Kwobi\_11, Derg\_9, Gustavo\_11
- Track 21 : Paries\_12, Tangent\_9
- Track 22 : Sedona\_12, Bibwit\_11
- Track 23 : Shivanishola\_11
- Track 24 : Flatwoods\_12
- Track 25 : ChadMasterC\_11, Barsten\_12
- Track 26 : Vivi2\_10, Sitar\_12
- Track 27 : Lennon\_12
- Track 28 : RiverRaider\_13
- Track 29 : Charming\_9, Fosterous\_9, Galadriel\_13, Kamashten\_12, Thing3\_12, Nordenberg\_6
- Track 30 : Rofo\_11
- Track 31 : Ribeye\_12
- Track 32 : Keitabear\_12

- Track 33 : Baddon\_11
- Track 34 : Fitzgerald\_10, Ailee\_11
- Track 35 : MoontowerMania\_10, Love\_13
- Track 36 : SchottB\_10
- Track 37 : Brandonk123\_14, Geodirt\_11
- Track 38 : Hans\_14
- Track 39 : Phauci\_5
- Track 40 : Ali17\_10, Phinally\_12, Leonard\_12
- Track 41 : MelBins\_12
- Track 42 : EMOore\_6
- Track 43 : Inspectinfecti\_13
- Track 44 : GTE6\_13, Twonlo\_10, Tiamoceli\_13, Chickadee\_12, RoadKill\_10, EdmundFerry\_11, Dxdert\_13
- Track 45 : Kwekel\_12
- Track 46 : DoctorFroggo\_13, Verity\_13, Zipp\_13, Delrey21\_13
- Track 47 : ViaConlectus\_13, Abblin\_13, Natkenzie\_13, Sampson\_13, Scioto\_13
- Track 48 : Tardus\_13, APunk\_14, Zitch\_14
- Track 49 : Lilbeanie\_12
- Track 50 : Mariokart\_7
- Track 51 : Sisko\_6, AnClar\_6
- Track 52 : Shatter\_7, Axumite\_7, Ligma\_7
- Track 53 : LittleMunchkin\_8
- Track 54 : Talia1610\_79, Racecar\_76, Mimi\_82, Bloom\_79
- Track 55 : SJReid\_80
- Track 56 : Atuin\_72
- Track 57 : DunneganBoMo\_68
- Track 58 : Patbob\_75
- Track 59 : PauloDiaboli\_81, A3Wally\_81
- Track 60 : Zooman\_66, Big4\_70
- Track 61 : Cece\_65
- Track 62 : Pumpernickel\_79
- Track 63 : Pine5\_09
- Track 64 : phiAsp2\_3
- Track 65 : Tonitrus\_26
- Track 66 : TurkishDelight\_10

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

The start number called the most often in the published annotations is 58, it was called in 47 of the 118 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

• APunk\_14, Abblin\_13, Angelicage\_11, Ashertheman\_11, Baddon\_11, Barsten\_12, Baumdotcom\_11, Belphegor\_8, Bibwit\_11, Bizzy\_12, BobBob\_9, ChadMasterC\_11, Charming\_9, Chickadee\_12, Delrey21\_13, Dxdert\_13, DoctorFroggo\_13, EMOore\_6, EdmundFerry\_11, Flatwoods\_12, Fosterous\_9, GTE6\_13, Gaea\_11, Galadriel\_13, Hans\_14, Inspectinfecti\_13, JKSyngboy\_10, Jabberwocky\_10, Kamashten\_12, Kewpiedoll\_12, Kroos\_11, Kwekel\_12, LilHam\_9, Love\_13, MoontowerMania\_10, Natkenzie\_13, Nordenberg\_6, RoadKill\_10, Rofo\_11, Sampson\_13, Sanjuju\_10, SchottB\_10, Scioto\_13, Sedona\_12, Sitar\_12,

StorminNorm\_11, Stultus\_11, Tangerine\_11, Tardus\_13, Thing3\_12, Tiamoceli\_13, Twonlo\_10, Verity\_13, ViaConlectus\_13, Vivi2\_10, YorkOnyx\_11, Zipp\_13, Zitch\_14,

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

- Affeca\_11, Ailee\_11, Ali17\_10, AnClar\_6, Axumite\_7, Bloom\_79, Brandonk123\_14, Derg\_9, Fitzgerald\_10, Geodirt\_11, Gustavo\_11, Keitabear\_12, Kwobi\_11, Lennon\_12, Leonard\_12, Ligma\_7, LittleMunchkin\_8, Mariokart\_7, McKinley\_12, MelBins\_12, Mimi\_82, Paries\_12, Patbob\_75, Phauci\_5, Phinally\_12, Racecar\_76, Ribeye\_12, RiverRaider\_13, Saronaya\_11, Shatter\_7, Shivanishola\_11, Sisko\_6, Talia1610\_79, Tangent\_9, Tycho\_11,

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

- A3Wally\_81, Abt2graduatex2\_9, Arri\_12, Asis\_9, Atuin\_72, BabyGotBac\_9, Bakery\_12, Barb\_11, BayC\_9, Big4\_70, Cece\_65, ClamChowder\_11, Clown\_15, Danyall\_11, DunneganBoMo\_68, Evamon\_11, Fireball\_12, Fugax\_11, Gezellig\_11, Halo3\_12, Jambalaya\_11, KimmyK\_11, Lilbeanie\_12, Maih\_9, Mischief19\_10, Mutzi\_11, Nubi\_11, PauloDiaboli\_81, Phlop\_11, Pine5\_09, PinkCoffee\_11, Portcullis\_11, PullumCavea\_11, Pumpernickel\_79, RainyPolka\_9, RogerDodger\_12, SJReid\_80, Salete\_9, Salvador\_11, Savbucketdawg\_11, Shinji\_11, SmokingBunny\_11, TP1604\_9, TillyBobJoe\_11, Togo\_11, Tonitrus\_26, TurkishDelight\_10, Twister6\_11, Valary\_12, VanDeWege\_12, Wizard\_11, Xkcd426\_10, YDN12\_10, YungMoney\_11, Zooman\_66, phiAsp2\_3,

### Summary by start number:

Start 39:

- Found in 9 of 149 ( 6.0% ) of genes in pham
- Manual Annotations of this start: 5 of 118
- Called 55.6% of time when present
- Phage (with cluster) where this start called: Ali17\_10 (DE2), Leonard\_12 (DE2), MelBins\_12 (DE2), Phauci\_5 (DE2), Phinally\_12 (DE2),

Start 42:

- Found in 25 of 149 ( 16.8% ) of genes in pham
- Manual Annotations of this start: 1 of 118
- Called 4.0% of time when present
- Phage (with cluster) where this start called: Bakery\_12 (DC1),

Start 45:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: phiAsp2\_3 (singleton),

Start 47:

- Found in 10 of 149 ( 6.7% ) of genes in pham
- Manual Annotations of this start: 2 of 118
- Called 20.0% of time when present
- Phage (with cluster) where this start called: Paries\_12 (DE1), Tangent\_9 (DE1),

Start 51:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.

- Called 100.0% of time when present
- Phage (with cluster) where this start called: RiverRaider\_13 (DE1),

#### Start 55:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- No Manual Annotations of this start.
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Pine5\_09 (singleton),

#### Start 56:

- Found in 2 of 149 ( 1.3% ) of genes in pham
- No Manual Annotations of this start.
- Called 50.0% of time when present
- Phage (with cluster) where this start called: Tonitrus\_26 (singleton),

#### Start 58:

- Found in 93 of 149 ( 62.4% ) of genes in pham
- Manual Annotations of this start: 47 of 118
- Called 62.4% of time when present
- Phage (with cluster) where this start called: APunk\_14 (DE4), Abblin\_13 (DE4), Angelicage\_11 (DE1), Ashertheman\_11 (DE1), Baddon\_11 (DE1), Barsten\_12 (DE1), Baumdotcom\_11 (DE1), Belphegor\_8 (DE), Bibwit\_11 (DE1), Bizzy\_12 (DE1), BobBob\_9 (DE1), ChadMasterC\_11 (DE1), Charming\_9 (DE1), Chickadee\_12 (DE3), Delrey21\_13 (DE4), Dextert\_13 (DE3), DoctorFroggo\_13 (DE4), EMOore\_6 (DE2), EdmundFerry\_11 (DE3), Flatwoods\_12 (DE1), Fosterous\_9 (DE1), GTE6\_13 (DE3), Gaea\_11 (DE1), Galadriel\_13 (DE1), Hans\_14 (DE2), Inspectinfecti\_13 (DE2), JKSyngboy\_10 (DE1), Jabberwocky\_10 (DE1), Kamashten\_12 (DE1), Kewpiedoll\_12 (DE1), Kroos\_11 (DE1), Kwekel\_12 (DE3), LilHam\_9 (DE1), Love\_13 (DE1), MoontowerMania\_10 (DE1), Natkenzie\_13 (DE4), Nordenberg\_6 (DE1), RoadKill\_10 (DE3), Rofo\_11 (DE1), Sampson\_13 (DE4), Sanjuju\_10 (DE1), SchottB\_10 (DE1), Scioto\_13 (DE4), Sedona\_12 (DE1), Sitar\_12 (DE1), StorminNorm\_11 (DE1), Stultus\_11 (DE1), Tangerine\_11 (DE1), Tardus\_13 (DE4), Thing3\_12 (DE1), Tiamoceli\_13 (DE3), Twonlo\_10 (DE3), Verity\_13 (DE4), ViaConlectus\_13 (DE4), Vivi2\_10 (DE1), YorkOnyx\_11 (DE1), Zipp\_13 (DE4), Zitch\_14 (DE4),

#### Start 60:

- Found in 37 of 149 ( 24.8% ) of genes in pham
- Manual Annotations of this start: 30 of 118
- Called 97.3% of time when present
- Phage (with cluster) where this start called: Arri\_12 (DC1), Barb\_11 (DC1), Bloom\_79 (FC), ClamChowder\_11 (DC1), Clown\_15 (DC2), Danyall\_11 (DC1), Evamon\_11 (DC1), Fireball\_12 (DC1), Fugax\_11 (DC1), Gezellig\_11 (DC1), Halo3\_12 (DC1), Jambalaya\_11 (DC1), KimmyK\_11 (DC1), Lilbeanie\_12 (DE5), Mimi\_82 (FC), Mutzi\_11 (DC1), Nubi\_11 (DC1), Patbob\_75 (FC), Phlop\_11 (DC1), PinkCoffee\_11 (DC1), Portcullis\_11 (DC1), PullumCavea\_11 (DC1), Racecar\_76 (FC), RogerDodger\_12 (DC1), Salvador\_11 (DC1), Savbucketdawg\_11 (DC1), Shinji\_11 (DC1), SmokingBunny\_11 (DC1), Talia1610\_79 (FC), TillyBobJoe\_11 (DC1), Togo\_11 (DC1), Twister6\_11 (DC1), Valary\_12 (DC1), VanDeWege\_12 (DC1), Wizard\_11 (DC1), YungMoney\_11 (DC1),

#### Start 61:

- Found in 1 of 149 ( 0.7% ) of genes in pham
- Manual Annotations of this start: 1 of 118

- Called 100.0% of time when present
- Phage (with cluster) where this start called: TurkishDelight\_10 (singleton),

#### Start 62:

- Found in 18 of 149 ( 12.1% ) of genes in pham
- Manual Annotations of this start: 14 of 118
- Called 100.0% of time when present
- Phage (with cluster) where this start called: A3Wally\_81 (GD1), Abt2graduatex2\_9 (BG), Asis\_9 (BG), Atuin\_72 (FC), BabyGotBac\_9 (BG), BayC\_9 (BG), Cece\_65 (GD3), DunneganBoMo\_68 (FC), Maih\_9 (BG), Mischief19\_10 (BG), PauloDiaboli\_81 (GD1), Pumpernickel\_79 (GD4), RainyPolka\_9 (BG), SJReid\_80 (FC), Salete\_9 (BG), TP1604\_9 (BG), Xkcd426\_10 (BG), YDN12\_10 (BG),

#### Start 63:

- Found in 51 of 149 ( 34.2% ) of genes in pham
- Manual Annotations of this start: 10 of 118
- Called 29.4% of time when present
- Phage (with cluster) where this start called: Affeca\_11 (DE1), Ailee\_11 (DE1), Brandonk123\_14 (DE1), Derg\_9 (DE1), Fitzgerald\_10 (DE1), Geodirt\_11 (DE1), Gustavo\_11 (DE1), Keitabear\_12 (DE1), Kwobi\_11 (DE1), Lennon\_12 (DE1), McKinley\_12 (DE1), Ribeye\_12 (DE1), Saronaya\_11 (DE1), Shivanishola\_11 (DE1), Tycho\_11 (DE1),

#### Start 64:

- Found in 7 of 149 ( 4.7% ) of genes in pham
- Manual Annotations of this start: 6 of 118
- Called 100.0% of time when present
- Phage (with cluster) where this start called: AnClar\_6 (DR), Axumite\_7 (DR), Ligma\_7 (DR), LittleMunchkin\_8 (DR), Mariokart\_7 (DR), Shatter\_7 (DR), Sisko\_6 (DR),

#### Start 65:

- Found in 6 of 149 ( 4.0% ) of genes in pham
- Manual Annotations of this start: 2 of 118
- Called 33.3% of time when present
- Phage (with cluster) where this start called: Big4\_70 (GD2), Zooman\_66 (GD2),

### Summary by clusters:

There are 16 clusters represented in this pham: GD1, singleton, BG, GD4, DE1, DE2, DE3, DE4, GD2, DE, DC2, FC, DE5, GD3, DR, DC1,

Info for manual annotations of cluster BG:

- Start number 62 was manually annotated 10 times for cluster BG.

Info for manual annotations of cluster DC1:

- Start number 42 was manually annotated 1 time for cluster DC1.
- Start number 60 was manually annotated 27 times for cluster DC1.

Info for manual annotations of cluster DC2:

- Start number 60 was manually annotated 1 time for cluster DC2.

Info for manual annotations of cluster DE1:

- Start number 47 was manually annotated 2 times for cluster DE1.
- Start number 58 was manually annotated 30 times for cluster DE1.
- Start number 63 was manually annotated 10 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 39 was manually annotated 5 times for cluster DE2.
- Start number 58 was manually annotated 2 times for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 58 was manually annotated 6 times for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 58 was manually annotated 9 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 60 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster DR:

- Start number 64 was manually annotated 6 times for cluster DR.

Info for manual annotations of cluster FC:

- Start number 60 was manually annotated 1 time for cluster FC.

Info for manual annotations of cluster GD1:

- Start number 62 was manually annotated 2 times for cluster GD1.

Info for manual annotations of cluster GD2:

- Start number 65 was manually annotated 2 times for cluster GD2.

Info for manual annotations of cluster GD3:

- Start number 62 was manually annotated 1 time for cluster GD3.

Info for manual annotations of cluster GD4:

- Start number 62 was manually annotated 1 time for cluster GD4.

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

Gene: A3Wally\_81 Start: 29548, Stop: 29832, Start Num: 62

Candidate Starts for A3Wally\_81:

(13, 29287), (44, 29491), (52, 29527), (Start: 62 @29548 has 14 MA's), (88, 29659), (105, 29764), (107, 29767),

Gene: APunk\_14 Start: 7109, Stop: 7426, Start Num: 58

Candidate Starts for APunk\_14:

(Start: 58 @7109 has 47 MA's), (71, 7151), (83, 7220), (95, 7283), (101, 7307), (110, 7349),

Gene: Abblin\_13 Start: 6625, Stop: 6942, Start Num: 58

Candidate Starts for Abblin\_13:

(Start: 58 @6625 has 47 MA's), (71, 6667), (83, 6736), (95, 6799), (101, 6823), (110, 6865), (112, 6871),



Gene: Abt2graduatex2\_9 Start: 7673, Stop: 8023, Start Num: 62  
Candidate Starts for Abt2graduatex2\_9:  
(Start: 62 @7673 has 14 MA's), (77, 7733), (91, 7820), (97, 7868), (100, 7877), (118, 7952),

Gene: Affeca\_11 Start: 6351, Stop: 6650, Start Num: 63  
Candidate Starts for Affeca\_11:  
(Start: 58 @6342 has 47 MA's), (Start: 63 @6351 has 10 MA's), (71, 6381), (83, 6450), (94, 6507),  
(95, 6513), (99, 6531), (110, 6579),

Gene: Ailee\_11 Start: 7213, Stop: 7512, Start Num: 63  
Candidate Starts for Ailee\_11:  
(Start: 58 @7204 has 47 MA's), (Start: 63 @7213 has 10 MA's), (83, 7312), (94, 7369), (95, 7375),  
(99, 7393), (110, 7441),

Gene: Ali17\_10 Start: 6021, Stop: 6407, Start Num: 39  
Candidate Starts for Ali17\_10:  
(11, 5826), (16, 5856), (Start: 39 @6021 has 5 MA's), (Start: 58 @6102 has 47 MA's), (67, 6123), (83,  
6207), (95, 6270), (110, 6336), (111, 6339), (116, 6363),

Gene: AnClar\_6 Start: 5256, Stop: 5579, Start Num: 64  
Candidate Starts for AnClar\_6:  
(Start: 58 @5244 has 47 MA's), (Start: 64 @5256 has 6 MA's), (68, 5274), (70, 5283), (73, 5295), (74,  
5301), (94, 5412), (97, 5430), (104, 5451), (121, 5550),

Gene: Angelicage\_11 Start: 6771, Stop: 7079, Start Num: 58  
Candidate Starts for Angelicage\_11:  
(Start: 58 @6771 has 47 MA's), (Start: 63 @6780 has 10 MA's), (83, 6879), (94, 6936), (95, 6942),  
(99, 6960), (110, 7008),

Gene: Arri\_12 Start: 5316, Stop: 5630, Start Num: 60  
Candidate Starts for Arri\_12:  
(Start: 42 @5253 has 1 MA's), (Start: 60 @5316 has 30 MA's), (94, 5472), (95, 5478),

Gene: Ashertheman\_11 Start: 5950, Stop: 6258, Start Num: 58  
Candidate Starts for Ashertheman\_11:  
(14, 5698), (19, 5725), (Start: 58 @5950 has 47 MA's), (Start: 63 @5959 has 10 MA's), (83, 6058),  
(94, 6115), (95, 6121), (110, 6187),

Gene: Asis\_9 Start: 7730, Stop: 8080, Start Num: 62  
Candidate Starts for Asis\_9:  
(Start: 62 @7730 has 14 MA's), (77, 7790), (91, 7877), (97, 7925), (102, 7940),

Gene: Atuin\_72 Start: 30721, Stop: 31002, Start Num: 62  
Candidate Starts for Atuin\_72:  
(Start: 62 @30721 has 14 MA's), (81, 30805),

Gene: Axumite\_7 Start: 4953, Stop: 5276, Start Num: 64  
Candidate Starts for Axumite\_7:  
(33, 4833), (Start: 58 @4941 has 47 MA's), (Start: 64 @4953 has 6 MA's), (Start: 65 @4959 has 2  
MA's), (66, 4965), (67, 4968), (68, 4971), (73, 4992), (74, 4998), (79, 5025), (83, 5052), (87, 5058),  
(104, 5148), (121, 5247),

Gene: BabyGotBac\_9 Start: 7730, Stop: 8080, Start Num: 62

Candidate Starts for BabyGotBac\_9:

(Start: 62 @7730 has 14 MA's), (77, 7790), (91, 7877), (97, 7925), (102, 7940),

Gene: Baddon\_11 Start: 6660, Stop: 6968, Start Num: 58

Candidate Starts for Baddon\_11:

(Start: 47 @6630 has 2 MA's), (Start: 58 @6660 has 47 MA's), (Start: 63 @6669 has 10 MA's), (72, 6705), (83, 6768), (94, 6825), (95, 6831), (110, 6897),

Gene: Bakery\_12 Start: 4954, Stop: 5331, Start Num: 42

Candidate Starts for Bakery\_12:

(15, 4762), (17, 4768), (25, 4834), (Start: 42 @4954 has 1 MA's), (Start: 60 @5017 has 30 MA's), (94, 5173), (95, 5179),

Gene: Barb\_11 Start: 5272, Stop: 5586, Start Num: 60

Candidate Starts for Barb\_11:

(Start: 42 @5209 has 1 MA's), (Start: 60 @5272 has 30 MA's), (94, 5428), (95, 5434),

Gene: Barsten\_12 Start: 6156, Stop: 6464, Start Num: 58

Candidate Starts for Barsten\_12:

(23, 5964), (Start: 58 @6156 has 47 MA's), (Start: 63 @6165 has 10 MA's), (71, 6195), (83, 6264), (94, 6321), (95, 6327), (99, 6345), (110, 6393),

Gene: Baumdotcom\_11 Start: 5973, Stop: 6281, Start Num: 58

Candidate Starts for Baumdotcom\_11:

(14, 5721), (19, 5748), (Start: 58 @5973 has 47 MA's), (Start: 63 @5982 has 10 MA's), (83, 6081), (94, 6138), (95, 6144), (110, 6210),

Gene: BayC\_9 Start: 7730, Stop: 8080, Start Num: 62

Candidate Starts for BayC\_9:

(Start: 62 @7730 has 14 MA's), (77, 7790), (91, 7877), (97, 7925), (102, 7940),

Gene: Belphegor\_8 Start: 3927, Stop: 4235, Start Num: 58

Candidate Starts for Belphegor\_8:

(Start: 39 @3846 has 5 MA's), (Start: 58 @3927 has 47 MA's), (67, 3951), (72, 3972), (81, 4020), (83, 4035), (95, 4098), (101, 4122), (110, 4164), (111, 4167), (116, 4191),

Gene: Bibwit\_11 Start: 7027, Stop: 7335, Start Num: 58

Candidate Starts for Bibwit\_11:

(Start: 58 @7027 has 47 MA's), (Start: 63 @7036 has 10 MA's), (71, 7066), (83, 7135), (94, 7192), (95, 7198), (99, 7216), (110, 7264),

Gene: Big4\_70 Start: 28857, Stop: 29132, Start Num: 65

Candidate Starts for Big4\_70:

(59, 28842), (Start: 65 @28857 has 2 MA's), (70, 28878), (94, 29007), (105, 29064), (107, 29067),

Gene: Bizzy\_12 Start: 6147, Stop: 6455, Start Num: 58

Candidate Starts for Bizzy\_12:

(14, 5895), (19, 5922), (Start: 58 @6147 has 47 MA's), (Start: 63 @6156 has 10 MA's), (83, 6255), (94, 6312), (95, 6318), (110, 6384),

Gene: Bloom\_79 Start: 33362, Stop: 33646, Start Num: 60

Candidate Starts for Bloom\_79:

(27, 33203), (28, 33209), (30, 33221), (31, 33224), (32, 33236), (34, 33242), (35, 33245), (41, 33287), (Start: 58 @33356 has 47 MA's), (Start: 60 @33362 has 30 MA's), (67, 33380), (74, 33410), (77, 33422), (78, 33425), (91, 33491), (120, 33641),

Gene: BobBob\_9 Start: 5693, Stop: 6001, Start Num: 58

Candidate Starts for BobBob\_9:

(Start: 58 @5693 has 47 MA's), (Start: 63 @5702 has 10 MA's), (83, 5801), (94, 5858), (95, 5864), (99, 5882), (110, 5930),

Gene: Brandonk123\_14 Start: 6849, Stop: 7148, Start Num: 63

Candidate Starts for Brandonk123\_14:

(23, 6648), (Start: 58 @6840 has 47 MA's), (Start: 63 @6849 has 10 MA's), (71, 6879), (83, 6948), (94, 7005), (95, 7011), (99, 7029), (110, 7077),

Gene: Cece\_65 Start: 27218, Stop: 27502, Start Num: 62

Candidate Starts for Cece\_65:

(59, 27212), (Start: 62 @27218 has 14 MA's), (80, 27296), (105, 27434), (107, 27437), (112, 27449),

Gene: ChadMasterC\_11 Start: 6428, Stop: 6736, Start Num: 58

Candidate Starts for ChadMasterC\_11:

(23, 6236), (Start: 58 @6428 has 47 MA's), (Start: 63 @6437 has 10 MA's), (71, 6467), (83, 6536), (94, 6593), (95, 6599), (99, 6617), (110, 6665),

Gene: Charming\_9 Start: 5695, Stop: 6003, Start Num: 58

Candidate Starts for Charming\_9:

(Start: 47 @5665 has 2 MA's), (Start: 58 @5695 has 47 MA's), (Start: 63 @5704 has 10 MA's), (83, 5803), (94, 5860), (95, 5866), (99, 5884), (110, 5932),

Gene: Chickadee\_12 Start: 5433, Stop: 5771, Start Num: 58

Candidate Starts for Chickadee\_12:

(46, 5397), (Start: 58 @5433 has 47 MA's), (67, 5460), (69, 5466), (74, 5490), (89, 5568), (95, 5634), (110, 5700), (116, 5727),

Gene: ClamChowder\_11 Start: 5272, Stop: 5586, Start Num: 60

Candidate Starts for ClamChowder\_11:

(Start: 42 @5209 has 1 MA's), (Start: 60 @5272 has 30 MA's), (94, 5428), (95, 5434),

Gene: Clown\_15 Start: 8549, Stop: 8863, Start Num: 60

Candidate Starts for Clown\_15:

(57, 8540), (Start: 60 @8549 has 30 MA's), (74, 8594), (94, 8705),

Gene: Danyall\_11 Start: 5144, Stop: 5458, Start Num: 60

Candidate Starts for Danyall\_11:

(Start: 42 @5081 has 1 MA's), (Start: 60 @5144 has 30 MA's), (94, 5300), (95, 5306),

Gene: Delrey21\_13 Start: 6898, Stop: 7215, Start Num: 58

Candidate Starts for Delrey21\_13:

(Start: 58 @6898 has 47 MA's), (68, 6928), (83, 7009), (95, 7072), (99, 7090), (100, 7093), (101, 7096), (110, 7138),

Gene: Derg\_9 Start: 5286, Stop: 5585, Start Num: 63

Candidate Starts for Derg\_9:

(14, 5025), (19, 5052), (Start: 58 @5277 has 47 MA's), (Start: 63 @5286 has 10 MA's), (83, 5385), (94, 5442), (95, 5448), (110, 5514),

Gene: Dextert\_13 Start: 5891, Stop: 6229, Start Num: 58

Candidate Starts for Dextert\_13:

(46, 5855), (Start: 58 @5891 has 47 MA's), (67, 5918), (69, 5924), (74, 5948), (89, 6026), (95, 6092), (110, 6158), (116, 6185),

Gene: DoctorFroggo\_13 Start: 6898, Stop: 7215, Start Num: 58

Candidate Starts for DoctorFroggo\_13:

(Start: 58 @6898 has 47 MA's), (68, 6928), (83, 7009), (95, 7072), (99, 7090), (100, 7093), (101, 7096), (110, 7138),

Gene: DunneganBoMo\_68 Start: 27488, Stop: 27772, Start Num: 62

Candidate Starts for DunneganBoMo\_68:

(29, 27344), (52, 27470), (59, 27482), (Start: 62 @27488 has 14 MA's), (120, 27767),

Gene: EMoore\_6 Start: 4085, Stop: 4393, Start Num: 58

Candidate Starts for EMoore\_6:

(Start: 39 @4004 has 5 MA's), (Start: 58 @4085 has 47 MA's), (67, 4109), (95, 4256), (101, 4280), (110, 4322), (111, 4325), (116, 4349),

Gene: EdmundFerry\_11 Start: 5448, Stop: 5786, Start Num: 58

Candidate Starts for EdmundFerry\_11:

(46, 5412), (Start: 58 @5448 has 47 MA's), (67, 5475), (69, 5481), (74, 5505), (89, 5583), (95, 5649), (110, 5715), (116, 5742),

Gene: Evamon\_11 Start: 5125, Stop: 5439, Start Num: 60

Candidate Starts for Evamon\_11:

(Start: 42 @5062 has 1 MA's), (Start: 60 @5125 has 30 MA's), (94, 5281), (95, 5287),

Gene: Fireball\_12 Start: 5251, Stop: 5565, Start Num: 60

Candidate Starts for Fireball\_12:

(Start: 42 @5188 has 1 MA's), (Start: 60 @5251 has 30 MA's), (94, 5407), (95, 5413),

Gene: Fitzgerald\_10 Start: 6630, Stop: 6929, Start Num: 63

Candidate Starts for Fitzgerald\_10:

(Start: 58 @6621 has 47 MA's), (Start: 63 @6630 has 10 MA's), (83, 6729), (94, 6786), (95, 6792), (99, 6810), (110, 6858),

Gene: Flatwoods\_12 Start: 6151, Stop: 6459, Start Num: 58

Candidate Starts for Flatwoods\_12:

(8, 5824), (Start: 58 @6151 has 47 MA's), (Start: 63 @6160 has 10 MA's), (83, 6259), (94, 6316), (95, 6322), (110, 6388),

Gene: Fosterous\_9 Start: 5693, Stop: 6001, Start Num: 58

Candidate Starts for Fosterous\_9:

(Start: 47 @5663 has 2 MA's), (Start: 58 @5693 has 47 MA's), (Start: 63 @5702 has 10 MA's), (83, 5801), (94, 5858), (95, 5864), (99, 5882), (110, 5930),

Gene: Fugax\_11 Start: 5272, Stop: 5586, Start Num: 60

Candidate Starts for Fugax\_11:

(Start: 42 @5209 has 1 MA's), (Start: 60 @5272 has 30 MA's), (94, 5428), (95, 5434),

Gene: GTE6\_13 Start: 5949, Stop: 6287, Start Num: 58

Candidate Starts for GTE6\_13:

(46, 5913), (Start: 58 @5949 has 47 MA's), (67, 5976), (69, 5982), (74, 6006), (89, 6084), (95, 6150), (110, 6216), (116, 6243),

Gene: Gaea\_11 Start: 5953, Stop: 6261, Start Num: 58

Candidate Starts for Gaea\_11:

(14, 5701), (19, 5728), (Start: 58 @5953 has 47 MA's), (Start: 63 @5962 has 10 MA's), (83, 6061), (94, 6118), (95, 6124), (110, 6190),

Gene: Galadriel\_13 Start: 6461, Stop: 6769, Start Num: 58

Candidate Starts for Galadriel\_13:

(Start: 47 @6431 has 2 MA's), (Start: 58 @6461 has 47 MA's), (Start: 63 @6470 has 10 MA's), (83, 6569), (94, 6626), (95, 6632), (99, 6650), (110, 6698),

Gene: Geodirt\_11 Start: 6477, Stop: 6776, Start Num: 63

Candidate Starts for Geodirt\_11:

(23, 6276), (Start: 58 @6468 has 47 MA's), (Start: 63 @6477 has 10 MA's), (71, 6507), (83, 6576), (94, 6633), (95, 6639), (99, 6657), (110, 6705),

Gene: Gezellig\_11 Start: 5251, Stop: 5565, Start Num: 60

Candidate Starts for Gezellig\_11:

(Start: 42 @5188 has 1 MA's), (Start: 60 @5251 has 30 MA's), (94, 5407), (95, 5413),

Gene: Gustavo\_11 Start: 5959, Stop: 6258, Start Num: 63

Candidate Starts for Gustavo\_11:

(14, 5698), (19, 5725), (Start: 58 @5950 has 47 MA's), (Start: 63 @5959 has 10 MA's), (83, 6058), (94, 6115), (95, 6121), (110, 6187),

Gene: Halo3\_12 Start: 5583, Stop: 5888, Start Num: 60

Candidate Starts for Halo3\_12:

(7, 5232), (Start: 42 @5520 has 1 MA's), (Start: 60 @5583 has 30 MA's), (94, 5739), (95, 5745),

Gene: Hans\_14 Start: 6642, Stop: 6947, Start Num: 58

Candidate Starts for Hans\_14:

(Start: 39 @6561 has 5 MA's), (Start: 58 @6642 has 47 MA's), (67, 6663), (83, 6747), (95, 6810), (101, 6834), (110, 6876), (111, 6879), (116, 6903),

Gene: Inspectinfecti\_13 Start: 7159, Stop: 7464, Start Num: 58

Candidate Starts for Inspectinfecti\_13:

(11, 6883), (16, 6913), (Start: 39 @7078 has 5 MA's), (Start: 58 @7159 has 47 MA's), (67, 7180), (83, 7264), (95, 7327), (110, 7393), (111, 7396), (116, 7420),

Gene: JKSyngboy\_10 Start: 6461, Stop: 6769, Start Num: 58

Candidate Starts for JKSyngboy\_10:

(14, 6209), (19, 6236), (Start: 58 @6461 has 47 MA's), (Start: 63 @6470 has 10 MA's), (83, 6569), (94, 6626), (95, 6632), (110, 6698),

Gene: Jabberwocky\_10 Start: 6623, Stop: 6931, Start Num: 58

Candidate Starts for Jabberwocky\_10:

(Start: 58 @6623 has 47 MA's), (Start: 63 @6632 has 10 MA's), (83, 6731), (94, 6788), (95, 6794), (99, 6812), (110, 6860),

Gene: Jambalaya\_11 Start: 4956, Stop: 5270, Start Num: 60

Candidate Starts for Jambalaya\_11:

(Start: 60 @4956 has 30 MA's), (94, 5112), (95, 5118),

Gene: Kamashten\_12 Start: 6782, Stop: 7090, Start Num: 58

Candidate Starts for Kamashten\_12:

(Start: 47 @6752 has 2 MA's), (Start: 58 @6782 has 47 MA's), (Start: 63 @6791 has 10 MA's), (83, 6890), (94, 6947), (95, 6953), (99, 6971), (110, 7019),

Gene: Keitabear\_12 Start: 7843, Stop: 8142, Start Num: 63

Candidate Starts for Keitabear\_12:

(Start: 58 @7834 has 47 MA's), (Start: 63 @7843 has 10 MA's), (83, 7942), (94, 7999), (95, 8005), (99, 8023), (110, 8071),

Gene: Kewpiedoll\_12 Start: 6184, Stop: 6492, Start Num: 58

Candidate Starts for Kewpiedoll\_12:

(Start: 58 @6184 has 47 MA's), (Start: 63 @6193 has 10 MA's), (71, 6223), (83, 6292), (94, 6349), (95, 6355), (99, 6373), (110, 6421),

Gene: KimmyK\_11 Start: 5272, Stop: 5586, Start Num: 60

Candidate Starts for KimmyK\_11:

(Start: 42 @5209 has 1 MA's), (Start: 60 @5272 has 30 MA's), (94, 5428), (95, 5434),

Gene: Kroos\_11 Start: 6114, Stop: 6422, Start Num: 58

Candidate Starts for Kroos\_11:

(14, 5862), (19, 5889), (Start: 58 @6114 has 47 MA's), (Start: 63 @6123 has 10 MA's), (83, 6222), (94, 6279), (95, 6285), (110, 6351),

Gene: Kwekel\_12 Start: 5442, Stop: 5780, Start Num: 58

Candidate Starts for Kwekel\_12:

(43, 5388), (Start: 58 @5442 has 47 MA's), (68, 5472), (69, 5475), (83, 5553), (89, 5577), (110, 5709), (116, 5736),

Gene: Kwobi\_11 Start: 5962, Stop: 6261, Start Num: 63

Candidate Starts for Kwobi\_11:

(14, 5701), (19, 5728), (Start: 58 @5953 has 47 MA's), (Start: 63 @5962 has 10 MA's), (83, 6061), (94, 6118), (95, 6124), (110, 6190),

Gene: Lennon\_12 Start: 7052, Stop: 7351, Start Num: 63

Candidate Starts for Lennon\_12:

(23, 6851), (Start: 58 @7043 has 47 MA's), (Start: 63 @7052 has 10 MA's), (83, 7151), (94, 7208), (95, 7214), (99, 7232), (110, 7280),

Gene: Leonard\_12 Start: 6673, Stop: 7059, Start Num: 39

Candidate Starts for Leonard\_12:

(11, 6478), (16, 6508), (Start: 39 @6673 has 5 MA's), (Start: 58 @6754 has 47 MA's), (67, 6775), (83, 6859), (95, 6922), (110, 6988), (111, 6991), (116, 7015),

Gene: Ligma\_7 Start: 4953, Stop: 5276, Start Num: 64

Candidate Starts for Ligma\_7:

(33, 4833), (Start: 58 @4941 has 47 MA's), (Start: 64 @4953 has 6 MA's), (Start: 65 @4959 has 2 MA's), (66, 4965), (67, 4968), (68, 4971), (73, 4992), (74, 4998), (79, 5025), (83, 5052), (87, 5058),

(104, 5148), (121, 5247),

Gene: LilHam\_9 Start: 5269, Stop: 5577, Start Num: 58

Candidate Starts for LilHam\_9:

(14, 5017), (19, 5044), (Start: 58 @5269 has 47 MA's), (Start: 63 @5278 has 10 MA's), (83, 5377), (94, 5434), (95, 5440), (110, 5506),

Gene: Lilbeanie\_12 Start: 4954, Stop: 5247, Start Num: 60

Candidate Starts for Lilbeanie\_12:

(Start: 60 @4954 has 30 MA's), (77, 5011), (83, 5053), (93, 5092),

Gene: LittleMunchkin\_8 Start: 6237, Stop: 6560, Start Num: 64

Candidate Starts for LittleMunchkin\_8:

(1, 4998), (2, 5172), (3, 5382), (4, 5499), (5, 5685), (6, 5730), (9, 5898), (12, 5946), (Start: 58 @6225 has 47 MA's), (Start: 64 @6237 has 6 MA's), (68, 6255), (73, 6276), (74, 6282), (79, 6309), (90, 6360), (94, 6393), (104, 6432), (112, 6471), (117, 6495), (121, 6531),

Gene: Love\_13 Start: 6772, Stop: 7080, Start Num: 58

Candidate Starts for Love\_13:

(Start: 58 @6772 has 47 MA's), (Start: 63 @6781 has 10 MA's), (71, 6811), (83, 6880), (94, 6937), (95, 6943), (99, 6961), (106, 6997),

Gene: Maih\_9 Start: 7729, Stop: 8079, Start Num: 62

Candidate Starts for Maih\_9:

(Start: 62 @7729 has 14 MA's), (77, 7789), (91, 7876), (97, 7924), (102, 7939),

Gene: Mariokart\_7 Start: 4960, Stop: 5283, Start Num: 64

Candidate Starts for Mariokart\_7:

(Start: 58 @4948 has 47 MA's), (Start: 64 @4960 has 6 MA's), (Start: 65 @4966 has 2 MA's), (66, 4972), (68, 4978), (70, 4987), (72, 4996), (73, 4999), (74, 5005), (82, 5056), (87, 5065), (98, 5137), (121, 5254),

Gene: McKinley\_12 Start: 7140, Stop: 7439, Start Num: 63

Candidate Starts for McKinley\_12:

(Start: 58 @7131 has 47 MA's), (Start: 63 @7140 has 10 MA's), (71, 7170), (83, 7239), (94, 7296), (95, 7302), (99, 7320), (110, 7368),

Gene: MelBins\_12 Start: 6449, Stop: 6835, Start Num: 39

Candidate Starts for MelBins\_12:

(Start: 39 @6449 has 5 MA's), (Start: 58 @6530 has 47 MA's), (67, 6551), (83, 6635), (95, 6698), (101, 6722), (110, 6764), (111, 6767), (116, 6791),

Gene: Mimi\_82 Start: 32709, Stop: 32993, Start Num: 60

Candidate Starts for Mimi\_82:

(27, 32550), (28, 32556), (30, 32568), (31, 32571), (32, 32583), (34, 32589), (35, 32592), (41, 32634), (Start: 58 @32703 has 47 MA's), (Start: 60 @32709 has 30 MA's), (67, 32727), (74, 32757), (77, 32769), (78, 32772), (91, 32838), (120, 32988),

Gene: Mischief19\_10 Start: 9272, Stop: 9619, Start Num: 62

Candidate Starts for Mischief19\_10:

(Start: 62 @9272 has 14 MA's), (75, 9323), (81, 9359), (85, 9386), (92, 9440), (97, 9479), (113, 9536), (122, 9608),

Gene: MoontowerMania\_10 Start: 6171, Stop: 6479, Start Num: 58

Candidate Starts for MoontowerMania\_10:

(Start: 58 @6171 has 47 MA's), (Start: 63 @6180 has 10 MA's), (71, 6210), (83, 6279), (94, 6336), (95, 6342), (99, 6360), (106, 6396),

Gene: Mutzi\_11 Start: 5144, Stop: 5458, Start Num: 60

Candidate Starts for Mutzi\_11:

(Start: 42 @5081 has 1 MA's), (Start: 60 @5144 has 30 MA's), (94, 5300), (95, 5306),

Gene: Natkenzie\_13 Start: 6625, Stop: 6942, Start Num: 58

Candidate Starts for Natkenzie\_13:

(Start: 58 @6625 has 47 MA's), (71, 6667), (83, 6736), (95, 6799), (101, 6823), (110, 6865), (112, 6871),

Gene: Nordenberg\_6 Start: 4315, Stop: 4623, Start Num: 58

Candidate Starts for Nordenberg\_6:

(Start: 47 @4285 has 2 MA's), (Start: 58 @4315 has 47 MA's), (Start: 63 @4324 has 10 MA's), (83, 4423), (94, 4480), (95, 4486), (99, 4504), (110, 4552),

Gene: Nubi\_11 Start: 5144, Stop: 5449, Start Num: 60

Candidate Starts for Nubi\_11:

(Start: 42 @5081 has 1 MA's), (Start: 60 @5144 has 30 MA's), (94, 5300), (95, 5306),

Gene: Paries\_12 Start: 6433, Stop: 6771, Start Num: 47

Candidate Starts for Paries\_12:

(Start: 47 @6433 has 2 MA's), (Start: 58 @6463 has 47 MA's), (Start: 63 @6472 has 10 MA's), (83, 6571), (94, 6628), (95, 6634), (99, 6652), (110, 6700),

Gene: Patbob\_75 Start: 33002, Stop: 33286, Start Num: 60

Candidate Starts for Patbob\_75:

(27, 32843), (28, 32849), (30, 32861), (31, 32864), (32, 32876), (34, 32882), (35, 32885), (38, 32900), (41, 32927), (Start: 58 @32996 has 47 MA's), (Start: 60 @33002 has 30 MA's), (74, 33050), (76, 33059), (77, 33062), (78, 33065), (91, 33131), (120, 33281),

Gene: PauloDiaboli\_81 Start: 28905, Stop: 29189, Start Num: 62

Candidate Starts for PauloDiaboli\_81:

(13, 28644), (44, 28848), (52, 28884), (Start: 62 @28905 has 14 MA's), (88, 29016), (105, 29121), (107, 29124),

Gene: Phauci\_5 Start: 3202, Stop: 3588, Start Num: 39

Candidate Starts for Phauci\_5:

(Start: 39 @3202 has 5 MA's), (Start: 58 @3283 has 47 MA's), (67, 3304), (83, 3388), (95, 3451), (101, 3475), (110, 3517), (111, 3520), (116, 3544),

Gene: Phinally\_12 Start: 6670, Stop: 7056, Start Num: 39

Candidate Starts for Phinally\_12:

(11, 6475), (16, 6505), (Start: 39 @6670 has 5 MA's), (Start: 58 @6751 has 47 MA's), (67, 6772), (83, 6856), (95, 6919), (110, 6985), (111, 6988), (116, 7012),

Gene: Phlop\_11 Start: 5251, Stop: 5565, Start Num: 60

Candidate Starts for Phlop\_11:

(Start: 42 @5188 has 1 MA's), (Start: 60 @5251 has 30 MA's), (94, 5407), (95, 5413),



Gene: Pine5\_09 Start: 5622, Stop: 5945, Start Num: 55

Candidate Starts for Pine5\_09:

(26, 5445), (55, 5622), (94, 5793), (109, 5859), (112, 5871), (114, 5880), (116, 5892),

Gene: PinkCoffee\_11 Start: 5281, Stop: 5595, Start Num: 60

Candidate Starts for PinkCoffee\_11:

(Start: 42 @5218 has 1 MA's), (Start: 60 @5281 has 30 MA's), (94, 5437), (95, 5443),

Gene: Portcullis\_11 Start: 5204, Stop: 5518, Start Num: 60

Candidate Starts for Portcullis\_11:

(Start: 60 @5204 has 30 MA's), (94, 5360), (95, 5366),

Gene: PullumCavea\_11 Start: 5251, Stop: 5565, Start Num: 60

Candidate Starts for PullumCavea\_11:

(Start: 42 @5188 has 1 MA's), (Start: 60 @5251 has 30 MA's), (94, 5407), (95, 5413),

Gene: Pumpernickel\_79 Start: 31092, Stop: 31376, Start Num: 62

Candidate Starts for Pumpernickel\_79:

(37, 30990), (48, 31059), (Start: 62 @31092 has 14 MA's), (82, 31191), (91, 31221), (94, 31251), (103, 31284), (105, 31308), (107, 31311), (115, 31335),

Gene: Racecar\_76 Start: 33362, Stop: 33646, Start Num: 60

Candidate Starts for Racecar\_76:

(27, 33203), (28, 33209), (30, 33221), (31, 33224), (32, 33236), (34, 33242), (35, 33245), (41, 33287), (Start: 58 @33356 has 47 MA's), (Start: 60 @33362 has 30 MA's), (67, 33380), (74, 33410), (77, 33422), (78, 33425), (91, 33491), (120, 33641),

Gene: RainyPolka\_9 Start: 7682, Stop: 8032, Start Num: 62

Candidate Starts for RainyPolka\_9:

(Start: 62 @7682 has 14 MA's), (77, 7742), (84, 7787), (97, 7877), (102, 7892),

Gene: Ribeye\_12 Start: 6157, Stop: 6456, Start Num: 63

Candidate Starts for Ribeye\_12:

(14, 5896), (19, 5923), (Start: 58 @6148 has 47 MA's), (Start: 63 @6157 has 10 MA's), (83, 6256), (94, 6313), (95, 6319), (110, 6385),

Gene: RiverRaider\_13 Start: 5683, Stop: 6012, Start Num: 51

Candidate Starts for RiverRaider\_13:

(40, 5644), (49, 5677), (51, 5683), (Start: 58 @5704 has 47 MA's), (68, 5731), (83, 5812), (94, 5869), (95, 5875), (96, 5881), (110, 5941), (111, 5944),

Gene: RoadKill\_10 Start: 4904, Stop: 5242, Start Num: 58

Candidate Starts for RoadKill\_10:

(46, 4868), (Start: 58 @4904 has 47 MA's), (67, 4931), (69, 4937), (74, 4961), (89, 5039), (95, 5105), (110, 5171), (116, 5198),

Gene: Rofo\_11 Start: 6703, Stop: 7011, Start Num: 58

Candidate Starts for Rofo\_11:

(Start: 58 @6703 has 47 MA's), (Start: 63 @6712 has 10 MA's), (83, 6811), (94, 6868), (95, 6874), (99, 6892),

Gene: RogerDodger\_12 Start: 5508, Stop: 5822, Start Num: 60

Candidate Starts for RogerDodger\_12:

(7, 5157), (Start: 42 @5445 has 1 MA's), (Start: 60 @5508 has 30 MA's), (94, 5664), (95, 5670),

Gene: SJReid\_80 Start: 34582, Stop: 34863, Start Num: 62

Candidate Starts for SJReid\_80:

(Start: 62 @34582 has 14 MA's), (93, 34720), (96, 34750), (97, 34756),

Gene: Salete\_9 Start: 7730, Stop: 8080, Start Num: 62

Candidate Starts for Salete\_9:

(Start: 62 @7730 has 14 MA's), (77, 7790), (91, 7877), (97, 7925), (102, 7940),

Gene: Salvador\_11 Start: 5123, Stop: 5437, Start Num: 60

Candidate Starts for Salvador\_11:

(Start: 42 @5060 has 1 MA's), (Start: 60 @5123 has 30 MA's), (94, 5279), (95, 5285),

Gene: Sampson\_13 Start: 6570, Stop: 6887, Start Num: 58

Candidate Starts for Sampson\_13:

(Start: 58 @6570 has 47 MA's), (71, 6612), (83, 6681), (95, 6744), (101, 6768), (110, 6810), (112, 6816),

Gene: Sanjuju\_10 Start: 6661, Stop: 6969, Start Num: 58

Candidate Starts for Sanjuju\_10:

(Start: 58 @6661 has 47 MA's), (Start: 63 @6670 has 10 MA's), (83, 6769), (94, 6826), (95, 6832), (99, 6850), (110, 6898),

Gene: Saronaya\_11 Start: 5959, Stop: 6258, Start Num: 63

Candidate Starts for Saronaya\_11:

(14, 5698), (19, 5725), (Start: 58 @5950 has 47 MA's), (Start: 63 @5959 has 10 MA's), (83, 6058), (94, 6115), (95, 6121), (110, 6187),

Gene: Savbucketdawg\_11 Start: 4956, Stop: 5270, Start Num: 60

Candidate Starts for Savbucketdawg\_11:

(Start: 60 @4956 has 30 MA's), (94, 5112), (95, 5118),

Gene: SchottB\_10 Start: 6126, Stop: 6434, Start Num: 58

Candidate Starts for SchottB\_10:

(10, 5841), (18, 5895), (20, 5907), (24, 5946), (36, 6024), (Start: 47 @6096 has 2 MA's), (Start: 58 @6126 has 47 MA's), (Start: 63 @6135 has 10 MA's), (94, 6291), (95, 6297), (110, 6363),

Gene: Scioto\_13 Start: 6625, Stop: 6942, Start Num: 58

Candidate Starts for Scioto\_13:

(Start: 58 @6625 has 47 MA's), (71, 6667), (83, 6736), (95, 6799), (101, 6823), (110, 6865), (112, 6871),

Gene: Sedona\_12 Start: 7669, Stop: 7977, Start Num: 58

Candidate Starts for Sedona\_12:

(Start: 58 @7669 has 47 MA's), (Start: 63 @7678 has 10 MA's), (71, 7708), (83, 7777), (94, 7834), (95, 7840), (99, 7858), (110, 7906),

Gene: Shatter\_7 Start: 4953, Stop: 5276, Start Num: 64

Candidate Starts for Shatter\_7:

(33, 4833), (Start: 58 @4941 has 47 MA's), (Start: 64 @4953 has 6 MA's), (Start: 65 @4959 has 2 MA's), (66, 4965), (67, 4968), (68, 4971), (73, 4992), (74, 4998), (79, 5025), (83, 5052), (87, 5058), (104, 5148), (121, 5247),

Gene: Shinji\_11 Start: 5145, Stop: 5459, Start Num: 60

Candidate Starts for Shinji\_11:

(Start: 60 @5145 has 30 MA's), (94, 5301), (95, 5307),

Gene: Shivanishola\_11 Start: 6886, Stop: 7185, Start Num: 63

Candidate Starts for Shivanishola\_11:

(Start: 58 @6877 has 47 MA's), (Start: 63 @6886 has 10 MA's), (71, 6916), (83, 6985), (94, 7042), (95, 7048), (99, 7066), (110, 7114),

Gene: Sisko\_6 Start: 4758, Stop: 5081, Start Num: 64

Candidate Starts for Sisko\_6:

(Start: 58 @4746 has 47 MA's), (Start: 64 @4758 has 6 MA's), (68, 4776), (70, 4785), (73, 4797), (74, 4803), (94, 4914), (97, 4932), (104, 4953), (121, 5052),

Gene: Sitar\_12 Start: 7043, Stop: 7351, Start Num: 58

Candidate Starts for Sitar\_12:

(23, 6851), (Start: 58 @7043 has 47 MA's), (Start: 63 @7052 has 10 MA's), (83, 7151), (94, 7208), (95, 7214), (99, 7232), (110, 7280),

Gene: SmokingBunny\_11 Start: 5123, Stop: 5437, Start Num: 60

Candidate Starts for SmokingBunny\_11:

(Start: 42 @5060 has 1 MA's), (Start: 60 @5123 has 30 MA's), (94, 5279), (95, 5285),

Gene: StorminNorm\_11 Start: 5953, Stop: 6261, Start Num: 58

Candidate Starts for StorminNorm\_11:

(14, 5701), (19, 5728), (Start: 58 @5953 has 47 MA's), (Start: 63 @5962 has 10 MA's), (83, 6061), (94, 6118), (95, 6124), (110, 6190),

Gene: Stultus\_11 Start: 6867, Stop: 7175, Start Num: 58

Candidate Starts for Stultus\_11:

(Start: 58 @6867 has 47 MA's), (Start: 63 @6876 has 10 MA's), (71, 6906), (83, 6975), (94, 7032), (95, 7038), (99, 7056), (110, 7104),

Gene: TP1604\_9 Start: 7730, Stop: 8080, Start Num: 62

Candidate Starts for TP1604\_9:

(Start: 62 @7730 has 14 MA's), (77, 7790), (91, 7877), (97, 7925), (102, 7940),

Gene: Talia1610\_79 Start: 32727, Stop: 33011, Start Num: 60

Candidate Starts for Talia1610\_79:

(27, 32568), (28, 32574), (30, 32586), (31, 32589), (32, 32601), (34, 32607), (35, 32610), (41, 32652), (Start: 58 @32721 has 47 MA's), (Start: 60 @32727 has 30 MA's), (67, 32745), (74, 32775), (77, 32787), (78, 32790), (91, 32856), (120, 33006),

Gene: Tangent\_9 Start: 5665, Stop: 6003, Start Num: 47

Candidate Starts for Tangent\_9:

(Start: 47 @5665 has 2 MA's), (Start: 58 @5695 has 47 MA's), (Start: 63 @5704 has 10 MA's), (83, 5803), (94, 5860), (95, 5866), (99, 5884), (110, 5932),

Gene: Tangerine\_11 Start: 5962, Stop: 6270, Start Num: 58

Candidate Starts for Tangerine\_11:

(14, 5710), (19, 5737), (Start: 58 @5962 has 47 MA's), (Start: 63 @5971 has 10 MA's), (83, 6070), (94, 6127), (95, 6133), (110, 6199),

Gene: Tardus\_13 Start: 5665, Stop: 5982, Start Num: 58

Candidate Starts for Tardus\_13:

(Start: 58 @5665 has 47 MA's), (71, 5707), (83, 5776), (95, 5839), (101, 5863), (110, 5905),

Gene: Thing3\_12 Start: 6782, Stop: 7090, Start Num: 58

Candidate Starts for Thing3\_12:

(Start: 47 @6752 has 2 MA's), (Start: 58 @6782 has 47 MA's), (Start: 63 @6791 has 10 MA's), (83, 6890), (94, 6947), (95, 6953), (99, 6971), (110, 7019),

Gene: Tiamoceli\_13 Start: 6287, Stop: 6625, Start Num: 58

Candidate Starts for Tiamoceli\_13:

(46, 6251), (Start: 58 @6287 has 47 MA's), (67, 6314), (69, 6320), (74, 6344), (89, 6422), (95, 6488), (110, 6554), (116, 6581),

Gene: TillyBobJoe\_11 Start: 4959, Stop: 5273, Start Num: 60

Candidate Starts for TillyBobJoe\_11:

(Start: 60 @4959 has 30 MA's), (94, 5115), (95, 5121),

Gene: Togo\_11 Start: 5123, Stop: 5437, Start Num: 60

Candidate Starts for Togo\_11:

(Start: 42 @5060 has 1 MA's), (Start: 60 @5123 has 30 MA's), (94, 5279), (95, 5285),

Gene: Tonitrus\_26 Start: 14059, Stop: 14370, Start Num: 56

Candidate Starts for Tonitrus\_26:

(56, 14059), (82, 14158),

Gene: TurkishDelight\_10 Start: 6065, Stop: 6391, Start Num: 61

Candidate Starts for TurkishDelight\_10:

(54, 6050), (Start: 61 @6065 has 1 MA's), (110, 6305), (114, 6317),

Gene: Twister6\_11 Start: 5055, Stop: 5369, Start Num: 60

Candidate Starts for Twister6\_11:

(Start: 42 @4992 has 1 MA's), (Start: 60 @5055 has 30 MA's), (94, 5211), (95, 5217),

Gene: Twonlo\_10 Start: 4904, Stop: 5242, Start Num: 58

Candidate Starts for Twonlo\_10:

(46, 4868), (Start: 58 @4904 has 47 MA's), (67, 4931), (69, 4937), (74, 4961), (89, 5039), (95, 5105), (110, 5171), (116, 5198),

Gene: Tycho\_11 Start: 5971, Stop: 6270, Start Num: 63

Candidate Starts for Tycho\_11:

(14, 5710), (19, 5737), (Start: 58 @5962 has 47 MA's), (Start: 63 @5971 has 10 MA's), (83, 6070), (94, 6127), (95, 6133), (110, 6199),

Gene: Valary\_12 Start: 5508, Stop: 5822, Start Num: 60

Candidate Starts for Valary\_12:

(7, 5157), (Start: 42 @5445 has 1 MA's), (Start: 60 @5508 has 30 MA's), (94, 5664), (95, 5670),

Gene: VanDeWege\_12 Start: 5436, Stop: 5750, Start Num: 60

Candidate Starts for VanDeWege\_12:

(Start: 42 @5373 has 1 MA's), (Start: 60 @5436 has 30 MA's), (94, 5592), (95, 5598),

Gene: Verity\_13 Start: 6898, Stop: 7215, Start Num: 58

Candidate Starts for Verity\_13:

(Start: 58 @6898 has 47 MA's), (68, 6928), (83, 7009), (95, 7072), (99, 7090), (100, 7093), (101, 7096), (110, 7138),

Gene: ViaConlectus\_13 Start: 6625, Stop: 6942, Start Num: 58

Candidate Starts for ViaConlectus\_13:

(Start: 58 @6625 has 47 MA's), (71, 6667), (83, 6736), (95, 6799), (101, 6823), (110, 6865), (112, 6871),

Gene: Vivi2\_10 Start: 5856, Stop: 6164, Start Num: 58

Candidate Starts for Vivi2\_10:

(23, 5664), (Start: 58 @5856 has 47 MA's), (Start: 63 @5865 has 10 MA's), (83, 5964), (94, 6021), (95, 6027), (99, 6045), (110, 6093),

Gene: Wizard\_11 Start: 5251, Stop: 5565, Start Num: 60

Candidate Starts for Wizard\_11:

(Start: 42 @5188 has 1 MA's), (Start: 60 @5251 has 30 MA's), (94, 5407), (95, 5413),

Gene: Xkcd426\_10 Start: 8759, Stop: 9115, Start Num: 62

Candidate Starts for Xkcd426\_10:

(21, 8549), (22, 8552), (50, 8729), (Start: 62 @8759 has 14 MA's), (77, 8819), (78, 8822), (85, 8873), (93, 8918), (97, 8954),

Gene: YDN12\_10 Start: 7676, Stop: 8026, Start Num: 62

Candidate Starts for YDN12\_10:

(Start: 62 @7676 has 14 MA's), (77, 7736), (84, 7781), (86, 7793), (91, 7823), (97, 7871), (102, 7886), (118, 7955),

Gene: YorkOnyx\_11 Start: 5911, Stop: 6219, Start Num: 58

Candidate Starts for YorkOnyx\_11:

(14, 5659), (Start: 58 @5911 has 47 MA's), (Start: 63 @5920 has 10 MA's), (83, 6019), (94, 6076), (95, 6082), (110, 6148),

Gene: YungMoney\_11 Start: 6205, Stop: 6510, Start Num: 60

Candidate Starts for YungMoney\_11:

(7, 5854), (Start: 42 @6142 has 1 MA's), (Start: 60 @6205 has 30 MA's), (94, 6361), (95, 6367),

Gene: Zipp\_13 Start: 7043, Stop: 7360, Start Num: 58

Candidate Starts for Zipp\_13:

(Start: 58 @7043 has 47 MA's), (68, 7073), (83, 7154), (95, 7217), (99, 7235), (100, 7238), (101, 7241), (110, 7283),

Gene: Zitch\_14 Start: 6362, Stop: 6679, Start Num: 58

Candidate Starts for Zitch\_14:

(Start: 58 @6362 has 47 MA's), (71, 6404), (83, 6473), (95, 6536), (101, 6560), (110, 6602),

Gene: Zooman\_66 Start: 27525, Stop: 27800, Start Num: 65

Candidate Starts for Zooman\_66:

(59, 27510), (Start: 65 @27525 has 2 MA's), (70, 27546), (94, 27675), (105, 27732), (107, 27735),

Gene: phiAsp2\_3 Start: 663, Stop: 1013, Start Num: 45

Candidate Starts for phiAsp2\_3:

(45, 663), (53, 693), (56, 702), (67, 732), (72, 747), (74, 756), (78, 771), (83, 810), (95, 888), (108, 945), (119, 990),