





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 193839 Report

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

Pham number 193839 has 125 members, 16 are drafts.

Phages represented in each track:

- Track 1 : Dori\_63, Mask\_63
- Track 2 : Belphegor\_48
- Track 3 : Tangent\_49, MoontowerMania\_48, Charming\_49, Geodirt\_47, Vivi2\_51, Thing3\_46, Love\_52, Fosterous\_46, Kamashten\_46
- Track 4 : Tangerine\_47
- Track 5 : Baddon\_47
- Track 6 : Ailee\_45, Sitar\_48, Affeca\_46, Stultus\_47, Keitabear\_48, Lennon\_48, Angelicage\_46
- Track 7 : ChadMasterC\_49
- Track 8 : RiverRaider\_49
- Track 9 : Fitzgerald\_47, Sanjuju\_47
- Track 10 : Bizzy\_48
- Track 11 : Saronaya\_47, JKSyngboy\_45, Gustavo\_47
- Track 12 : Brandonk123\_50, Galadriel\_48, Paries\_51, Nordenberg\_43, BobBob\_46
- Track 13 : SchottB\_46, StorminNorm\_47, Kroos\_48, Tycho\_47
- Track 14 : Bibwit\_46
- Track 15 : Baumdotcom\_46, LilHam\_45
- Track 16 : Barsten\_49
- Track 17 : Sedona\_48
- Track 18 : Kewpiedoll\_48
- Track 19 : McKinley\_50
- Track 20 : Jabberwocky\_47
- Track 21 : Kwobi\_48
- Track 22 : Derg\_45
- Track 23 : YorkOnyx\_48
- Track 24 : Gaea\_47
- Track 25 : Rofo\_48
- Track 26 : Ashertheman\_48
- Track 27 : Flatwoods\_48
- Track 28 : Ribeye\_48
- Track 29 : Shivanishola\_48
- Track 30 : Inspectinfecti\_48, Hans\_49, Ali17\_45
- Track 31 : Phauci\_40
- Track 32 : Phinally\_47, Leonard\_47
- Track 33 : MelBins\_48
- Track 34 : EMoore\_45
- Track 35 : Dxdert\_46

- Track 36 : Chickadee\_45, Kwekel\_45
- Track 37 : EdmundFerry\_44, RoadKill\_43
- Track 38 : GTE6\_45
- Track 39 : Tiamoceli\_46
- Track 40 : Twonlo\_43
- Track 41 : APunk\_51
- Track 42 : Zipp\_51, Delrey21\_50, DoctorFroggo\_50, Verity\_50
- Track 43 : Sampson\_50, Scioto\_51, Natkenzie\_50, Abblin\_50
- Track 44 : Zitch\_53
- Track 45 : ViaConlectus\_50
- Track 46 : Tardus\_52
- Track 47 : Lilbeanie\_51
- Track 48 : Island3\_48, Brujita\_48
- Track 49 : Rebel\_43, ShrimpFriedEgg\_51, BabeRuth\_52, Nenae\_51, Purgamenstris\_51, Raymond7\_45, Redi\_51, Hanako\_52, Andies\_44, PhancyPhin\_51, Phrann\_48
- Track 50 : Schnauzer\_48, Fulbright\_46, Melville\_50, Parmesanjohn\_47, Phloss\_45, Magsby\_47, Scitech\_44, Silvafighter\_48, Gex\_47, Xerxes\_47, Pipsqueaks\_47, Smurph\_47, Tapioca\_49, Chewbacca\_49, Duplicity\_47, Carcharodon\_47
- Track 51 : Jamie19\_45, Panchino\_44, SpongeBob\_45, Snekmaggedon\_45
- Track 52 : Kevin1\_49
- Track 53 : Rubeelu\_50, Butters\_50
- Track 54 : Shweta\_45
- Track 55 : Bosection6\_47
- Track 56 : ThulaThula\_52
- Track 57 : TurkishDelight\_59
- Track 58 : Jace\_31

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

The start number called the most often in the published annotations is 24, it was called in 51 of the 109 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Affeca\_46, Ailee\_45, Angelicage\_46, Ashertheman\_48, Baddon\_47, Barsten\_49, Baumdotcom\_46, Bibwit\_46, Bizzy\_48, BobBob\_46, Brandonk123\_50, ChadMasterC\_49, Charming\_49, Chickadee\_45, Derg\_45, Dextert\_46, EdmundFerry\_44, Fitzgerald\_47, Flatwoods\_48, Fosterous\_46, GTE6\_45, Gaea\_47, Galadriel\_48, Geodirt\_47, Gustavo\_47, JKSyngboy\_45, Jabberwocky\_47, Jace\_31, Kamashten\_46, Keitabear\_48, Kewpiedoll\_48, Kroos\_48, Kwekel\_45, Kwobi\_48, Lennon\_48, LilHam\_45, Love\_52, McKinley\_50, MoontowerMania\_48, Nordenberg\_43, Paries\_51, Ribeye\_48, RiverRaider\_49, RoadKill\_43, Sanjuju\_47, Saronaya\_47, SchottB\_46, Sedona\_48, Shivanishola\_48, Sitar\_48, StorminNorm\_47, Stultus\_47, Tangent\_49, Tangerine\_47, Thing3\_46, Tiamoceli\_46, Twonlo\_43, Tycho\_47, Vivi2\_51, YorkOnyx\_48,

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

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

- APunk\_51, Abblin\_50, Ali17\_45, Andies\_44, BabeRuth\_52, Belphegor\_48, Bosection6\_47, Brujita\_48, Butters\_50, Carcharodon\_47, Chewbacca\_49, Delrey21\_50, DoctorFroggo\_50, Dori\_63, Duplicity\_47, EMOore\_45, Fulbright\_46, Gex\_47, Hanako\_52, Hans\_49, Inspectinfecti\_48, Island3\_48, Jamie19\_45, Kevin1\_49, Leonard\_47, Lilbeanie\_51, Magsby\_47, Mask\_63, MelBins\_48, Melville\_50, Natkenzie\_50, Nenae\_51, Panchino\_44, Parmesanjohn\_47, PhancyPhin\_51, Phauci\_40, Phinally\_47, Phloss\_45, Phrann\_48, Pipsqueaks\_47, Purgamenstris\_51, Raymond7\_45, Rebel\_43, Redi\_51, Rofo\_48, Rubeelu\_50, Sampson\_50, Schnauzer\_48, Scioto\_51, Scitech\_44, ShrimpFriedEgg\_51, Shweta\_45, Silvafighter\_48, Smurph\_47, Snekmaggedon\_45, SpongeBob\_45, Tapioca\_49, Tardus\_52, ThulaThula\_52, TurkishDelight\_59, Verity\_50, ViaConlectus\_50, Xerxes\_47, Zipp\_51, Zitch\_53,

### Summary by start number:

#### Start 10:

- Found in 1 of 125 ( 0.8% ) of genes in pham
- Manual Annotations of this start: 1 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Rofo\_48 (DE1),

#### Start 22:

- Found in 2 of 125 ( 1.6% ) of genes in pham
- Manual Annotations of this start: 2 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Lilbeanie\_51 (DE5), TurkishDelight\_59 (singleton),

#### Start 23:

- Found in 9 of 125 ( 7.2% ) of genes in pham
- Manual Annotations of this start: 8 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ali17\_45 (DE2), Belphegor\_48 (DE), EMOore\_45 (DE2), Hans\_49 (DE2), Inspectinfecti\_48 (DE2), Leonard\_47 (DE2), MelBins\_48 (DE2), Phauci\_40 (DE2), Phinally\_47 (DE2),

#### Start 24:

- Found in 60 of 125 ( 48.0% ) of genes in pham
- Manual Annotations of this start: 51 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Affeca\_46 (DE1), Ailee\_45 (DE1), Angelicage\_46 (DE1), Ashertheman\_48 (DE1), Baddon\_47 (DE1), Barsten\_49 (DE1), Baumdotcom\_46 (DE1), Bibwit\_46 (DE1), Bizzy\_48 (DE1), BobBob\_46 (DE1), Brandonk123\_50 (DE1), ChadMasterC\_49 (DE1), Charming\_49 (DE1), Chickadee\_45 (DE3), Derg\_45 (DE1), Dexdert\_46 (DE3), EdmundFerry\_44 (DE3), Fitzgerald\_47 (DE1), Flatwoods\_48 (DE1), Fosterous\_46 (DE1), GTE6\_45 (DE3), Gaea\_47 (DE1), Galadriel\_48 (DE1), Geodirt\_47 (DE1), Gustavo\_47 (DE1), JKSyngboy\_45 (DE1), Jabberwocky\_47 (DE1), Jace\_31 (singleton), Kamashten\_46 (DE1), Keitabear\_48 (DE1), Kewpiedoll\_48 (DE1), Kroos\_48 (DE1), Kwekel\_45 (DE3), Kwobi\_48 (DE1), Lennon\_48 (DE1), LilHam\_45 (DE1), Love\_52 (DE1), McKinley\_50 (DE1), MoontowerMania\_48 (DE1), Nordenberg\_43 (DE1), Paries\_51 (DE1), Ribeye\_48 (DE1), RiverRaider\_49 (DE1), RoadKill\_43 (DE3), Sanjuju\_47 (DE1), Saronaya\_47 (DE1), SchottB\_46 (DE1), Sedona\_48 (DE1), Shivanishola\_48

(DE1), Sitar\_48 (DE1), StorminNorm\_47 (DE1), Stultus\_47 (DE1), Tangent\_49 (DE1), Tangerine\_47 (DE1), Thing3\_46 (DE1), Tiamoceli\_46 (DE3), Twonlo\_43 (DE3), Tycho\_47 (DE1), Vivi2\_51 (DE1), YorkOnyx\_48 (DE1),

Start 25:

- Found in 12 of 125 ( 9.6% ) of genes in pham
- Manual Annotations of this start: 9 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: APunk\_51 (DE4), Abblin\_50 (DE4), Delrey21\_50 (DE4), DoctorFroggo\_50 (DE4), Natkenzie\_50 (DE4), Sampson\_50 (DE4), Scioto\_51 (DE4), Tardus\_52 (DE4), Verity\_50 (DE4), ViaConlectus\_50 (DE4), Zipp\_51 (DE4), Zitch\_53 (DE4),

Start 30:

- Found in 41 of 125 ( 32.8% ) of genes in pham
- Manual Annotations of this start: 38 of 109
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Andies\_44 (N), BabeRuth\_52 (N), Bosection6\_47 (N), Brujita\_48 (I1), Butters\_50 (N), Carcharodon\_47 (N), Chewbacca\_49 (N), Dori\_63 (AD), Duplicity\_47 (N), Fulbright\_46 (N), Gex\_47 (N), Hanako\_52 (N), Island3\_48 (I1), Jamie19\_45 (N), Kevin1\_49 (N), Magsby\_47 (N), Mask\_63 (AD), Melville\_50 (N), Nenae\_51 (N), Panchino\_44 (N), Parmesanjohn\_47 (N), PhancyPhin\_51 (N), Phloss\_45 (N), Phrann\_48 (N), Pipsqueaks\_47 (N), Purgamenstris\_51 (N), Raymond7\_45 (N), Rebel\_43 (N), Redi\_51 (N), Rubeelu\_50 (N), Schnauzer\_48 (N), Scitech\_44 (N), ShrimpFriedEgg\_51 (N), Shweta\_45 (N), Silvafighter\_48 (N), Smurph\_47 (N), Snekmaggedon\_45 (N), SpongeBob\_45 (N), Tapioca\_49 (N), ThulaThula\_52 (P5), Xerxes\_47 (N),

### Summary by clusters:

There are 11 clusters represented in this pham: singleton, DE, AD, P5, I1, DE1, DE2, DE3, DE4, DE5, N,

Info for manual annotations of cluster AD:

- Start number 30 was manually annotated 2 times for cluster AD.

Info for manual annotations of cluster DE1:

- Start number 10 was manually annotated 1 time for cluster DE1.
- Start number 24 was manually annotated 43 times for cluster DE1.

Info for manual annotations of cluster DE2:

- Start number 23 was manually annotated 8 times for cluster DE2.

Info for manual annotations of cluster DE3:

- Start number 24 was manually annotated 7 times for cluster DE3.

Info for manual annotations of cluster DE4:

- Start number 25 was manually annotated 9 times for cluster DE4.

Info for manual annotations of cluster DE5:

- Start number 22 was manually annotated 1 time for cluster DE5.

Info for manual annotations of cluster I1:

- Start number 30 was manually annotated 2 times for cluster I1.

Info for manual annotations of cluster N:

- Start number 30 was manually annotated 33 times for cluster N.

Info for manual annotations of cluster P5:

- Start number 30 was manually annotated 1 time for cluster P5.

### **Gene Information:**

Gene: APunk\_51 Start: 41866, Stop: 43041, Start Num: 25

Candidate Starts for APunk\_51:

(Start: 25 @41866 has 9 MA's), (31, 41905), (35, 41998), (36, 42007), (37, 42040), (38, 42046), (40, 42082), (41, 42097), (46, 42130), (47, 42136), (59, 42229), (60, 42238), (70, 42373), (73, 42406), (74, 42409), (75, 42421), (76, 42427), (80, 42490), (82, 42520), (95, 42691), (104, 42766), (112, 42850), (118, 42922), (119, 42928), (125, 43009),

Gene: Abblin\_50 Start: 42409, Stop: 43563, Start Num: 25

Candidate Starts for Abblin\_50:

(Start: 25 @42409 has 9 MA's), (31, 42448), (35, 42541), (36, 42550), (37, 42583), (38, 42589), (40, 42625), (41, 42640), (46, 42673), (47, 42679), (59, 42772), (73, 42928), (75, 42943), (80, 43012), (81, 43024), (82, 43042), (95, 43213), (104, 43288), (112, 43372), (118, 43444), (119, 43450), (125, 43531),

Gene: Affeca\_46 Start: 40965, Stop: 42128, Start Num: 24

Candidate Starts for Affeca\_46:

(Start: 24 @40965 has 51 MA's), (31, 41004), (35, 41097), (37, 41139), (38, 41145), (41, 41196), (46, 41229), (57, 41304), (59, 41325), (70, 41448), (73, 41481), (76, 41502), (81, 41577), (90, 41715), (104, 41829), (107, 41877), (109, 41892), (114, 41952), (119, 42018), (121, 42033), (124, 42051),

Gene: Ailee\_45 Start: 40558, Stop: 41721, Start Num: 24

Candidate Starts for Ailee\_45:

(Start: 24 @40558 has 51 MA's), (31, 40597), (35, 40690), (37, 40732), (38, 40738), (41, 40789), (46, 40822), (57, 40897), (59, 40918), (70, 41041), (73, 41074), (76, 41095), (81, 41170), (90, 41308), (104, 41422), (107, 41470), (109, 41485), (114, 41545), (119, 41611), (121, 41626), (124, 41644),

Gene: Ali17\_45 Start: 39857, Stop: 41008, Start Num: 23

Candidate Starts for Ali17\_45:

(Start: 23 @39857 has 8 MA's), (32, 39941), (35, 39998), (36, 40007), (37, 40040), (38, 40046), (41, 40094), (47, 40133), (50, 40163), (54, 40181), (55, 40184), (56, 40193), (68, 40343), (70, 40349), (73, 40382), (76, 40403), (80, 40466), (87, 40580), (89, 40622), (90, 40628), (106, 40766), (121, 40910), (125, 40976),

Gene: Andies\_44 Start: 31627, Stop: 32637, Start Num: 30

Candidate Starts for Andies\_44:

(Start: 30 @31627 has 38 MA's), (35, 31741), (36, 31750), (37, 31777), (41, 31828), (42, 31831), (51, 31897), (56, 31924), (65, 32032), (66, 32050), (68, 32068), (92, 32317), (102, 32407), (105, 32419), (113, 32467), (121, 32548),

Gene: Angelicage\_46 Start: 41383, Stop: 42546, Start Num: 24

Candidate Starts for Angelicage\_46:

(Start: 24 @41383 has 51 MA's), (31, 41422), (35, 41515), (37, 41557), (38, 41563), (41, 41614), (46, 41647), (57, 41722), (59, 41743), (70, 41866), (73, 41899), (76, 41920), (81, 41995), (90, 42133), (104, 42247), (107, 42295), (109, 42310), (114, 42370), (119, 42436), (121, 42451), (124, 42469),

Gene: Ashertheman\_48 Start: 41154, Stop: 42287, Start Num: 24

Candidate Starts for Ashertheman\_48:

(19, 41085), (Start: 24 @41154 has 51 MA's), (31, 41199), (35, 41292), (37, 41334), (38, 41340), (41, 41391), (46, 41424), (47, 41430), (59, 41520), (70, 41643), (73, 41676), (81, 41772), (90, 41910), (104, 42024), (106, 42051), (114, 42111), (119, 42177), (124, 42210),

Gene: BabeRuth\_52 Start: 33348, Stop: 34358, Start Num: 30

Candidate Starts for BabeRuth\_52:

(Start: 30 @33348 has 38 MA's), (35, 33462), (36, 33471), (37, 33498), (41, 33549), (42, 33552), (51, 33618), (56, 33645), (65, 33753), (66, 33771), (68, 33789), (92, 34038), (102, 34128), (105, 34140), (113, 34188), (121, 34269),

Gene: Baddon\_47 Start: 41688, Stop: 42815, Start Num: 24

Candidate Starts for Baddon\_47:

(19, 41619), (Start: 24 @41688 has 51 MA's), (31, 41727), (35, 41820), (37, 41862), (38, 41868), (41, 41919), (47, 41958), (59, 42048), (65, 42129), (73, 42204), (76, 42225), (79, 42258), (80, 42288), (81, 42300), (90, 42438), (104, 42552), (106, 42579), (114, 42639), (119, 42705), (124, 42738),

Gene: Barsten\_49 Start: 41538, Stop: 42665, Start Num: 24

Candidate Starts for Barsten\_49:

(Start: 24 @41538 has 51 MA's), (31, 41577), (35, 41670), (37, 41712), (38, 41718), (41, 41769), (46, 41802), (57, 41877), (59, 41898), (65, 41979), (70, 42021), (73, 42054), (76, 42075), (81, 42150), (90, 42288), (104, 42402), (106, 42429), (114, 42489), (119, 42555), (121, 42570), (124, 42588),

Gene: Baumdotcom\_46 Start: 40560, Stop: 41684, Start Num: 24

Candidate Starts for Baumdotcom\_46:

(19, 40491), (Start: 24 @40560 has 51 MA's), (31, 40596), (35, 40689), (37, 40731), (38, 40737), (41, 40788), (47, 40827), (59, 40917), (73, 41073), (76, 41094), (79, 41127), (81, 41169), (90, 41307), (104, 41421), (106, 41448), (114, 41508), (119, 41574), (124, 41607),

Gene: Belphegor\_48 Start: 41897, Stop: 43045, Start Num: 23

Candidate Starts for Belphegor\_48:

(20, 41861), (Start: 23 @41897 has 8 MA's), (32, 41978), (36, 42044), (37, 42077), (38, 42083), (41, 42131), (44, 42149), (46, 42164), (47, 42170), (50, 42200), (54, 42218), (55, 42221), (59, 42263), (68, 42380), (70, 42386), (73, 42419), (76, 42440), (87, 42617), (89, 42659), (90, 42665), (118, 42926), (119, 42932), (125, 43013),

Gene: Bibwit\_46 Start: 40244, Stop: 41377, Start Num: 24

Candidate Starts for Bibwit\_46:

(3, 39749), (19, 40175), (Start: 24 @40244 has 51 MA's), (35, 40382), (37, 40424), (38, 40430), (41, 40481), (46, 40514), (47, 40520), (59, 40610), (73, 40766), (76, 40787), (81, 40862), (90, 41000), (104, 41114), (106, 41141), (112, 41189), (114, 41201), (119, 41267), (121, 41282), (124, 41300),

Gene: Bizzy\_48 Start: 40845, Stop: 41972, Start Num: 24

Candidate Starts for Bizzy\_48:

(19, 40776), (Start: 24 @40845 has 51 MA's), (31, 40884), (35, 40977), (37, 41019), (38, 41025), (41, 41076), (47, 41115), (59, 41205), (65, 41286), (73, 41361), (76, 41382), (79, 41415), (81, 41457), (90, 41595), (104, 41709), (106, 41736), (114, 41796), (119, 41862), (124, 41895),



Gene: BobBob\_46 Start: 40656, Stop: 41780, Start Num: 24

Candidate Starts for BobBob\_46:

(21, 40617), (Start: 24 @40656 has 51 MA's), (31, 40692), (35, 40785), (37, 40827), (38, 40833), (41, 40884), (46, 40917), (57, 40992), (59, 41013), (70, 41136), (73, 41169), (76, 41190), (81, 41265), (90, 41403), (104, 41517), (106, 41544), (114, 41604), (119, 41670), (121, 41685), (124, 41703),

Gene: Bosection6\_47 Start: 31093, Stop: 32103, Start Num: 30

Candidate Starts for Bosection6\_47:

(Start: 30 @31093 has 38 MA's), (33, 31168), (35, 31207), (36, 31216), (37, 31243), (41, 31294), (42, 31297), (45, 31321), (63, 31447), (65, 31498), (67, 31522), (68, 31534), (72, 31564), (88, 31756), (90, 31765), (92, 31783), (102, 31873), (105, 31885), (113, 31933), (121, 32014),

Gene: Brandonk123\_50 Start: 41790, Stop: 42914, Start Num: 24

Candidate Starts for Brandonk123\_50:

(21, 41751), (Start: 24 @41790 has 51 MA's), (31, 41826), (35, 41919), (37, 41961), (38, 41967), (41, 42018), (46, 42051), (57, 42126), (59, 42147), (70, 42270), (73, 42303), (76, 42324), (81, 42399), (90, 42537), (104, 42651), (106, 42678), (114, 42738), (119, 42804), (121, 42819), (124, 42837),

Gene: Brujita\_48 Start: 33774, Stop: 34781, Start Num: 30

Candidate Starts for Brujita\_48:

(18, 33654), (Start: 30 @33774 has 38 MA's), (35, 33885), (36, 33894), (37, 33921), (41, 33972), (42, 33975), (49, 34032), (51, 34041), (63, 34125), (65, 34176), (67, 34200), (68, 34212), (90, 34443), (92, 34461), (95, 34482), (97, 34497), (102, 34551), (103, 34554), (105, 34563), (106, 34581), (113, 34611), (121, 34692),

Gene: Butters\_50 Start: 33050, Stop: 34057, Start Num: 30

Candidate Starts for Butters\_50:

(11, 32807), (12, 32819), (16, 32885), (18, 32930), (Start: 30 @33050 has 38 MA's), (35, 33161), (36, 33170), (37, 33197), (41, 33248), (42, 33251), (49, 33308), (51, 33317), (63, 33401), (65, 33452), (67, 33476), (68, 33488), (90, 33719), (92, 33737), (95, 33758), (97, 33773), (102, 33827), (103, 33830), (105, 33839), (106, 33857), (113, 33887), (121, 33968),

Gene: Carcharodon\_47 Start: 32442, Stop: 33452, Start Num: 30

Candidate Starts for Carcharodon\_47:

(Start: 30 @32442 has 38 MA's), (33, 32517), (35, 32556), (36, 32565), (37, 32592), (41, 32643), (42, 32646), (45, 32670), (63, 32796), (65, 32847), (67, 32871), (68, 32883), (72, 32913), (88, 33105), (90, 33114), (92, 33132), (98, 33174), (102, 33222), (105, 33234), (121, 33363),

Gene: ChadMasterC\_49 Start: 42937, Stop: 44064, Start Num: 24

Candidate Starts for ChadMasterC\_49:

(Start: 24 @42937 has 51 MA's), (31, 42976), (35, 43069), (37, 43111), (38, 43117), (41, 43168), (46, 43201), (57, 43276), (59, 43297), (70, 43420), (73, 43453), (76, 43474), (81, 43549), (90, 43687), (104, 43801), (114, 43888), (119, 43954), (121, 43969), (124, 43987),

Gene: Charming\_49 Start: 41293, Stop: 42420, Start Num: 24

Candidate Starts for Charming\_49:

(Start: 24 @41293 has 51 MA's), (31, 41332), (35, 41425), (37, 41467), (38, 41473), (41, 41524), (46, 41557), (57, 41632), (59, 41653), (70, 41776), (73, 41809), (76, 41830), (81, 41905), (90, 42043), (104, 42157), (106, 42184), (114, 42244), (119, 42310), (121, 42325), (124, 42343),

Gene: Chewbacca\_49 Start: 32442, Stop: 33452, Start Num: 30

Candidate Starts for Chewbacca\_49:

(Start: 30 @32442 has 38 MA's), (33, 32517), (35, 32556), (36, 32565), (37, 32592), (41, 32643), (42, 32646), (45, 32670), (63, 32796), (65, 32847), (67, 32871), (68, 32883), (72, 32913), (88, 33105), (90, 33114), (92, 33132), (98, 33174), (102, 33222), (105, 33234), (121, 33363),

Gene: Chickadee\_45 Start: 37929, Stop: 39083, Start Num: 24

Candidate Starts for Chickadee\_45:

(Start: 24 @37929 has 51 MA's), (35, 38058), (37, 38100), (38, 38106), (41, 38157), (59, 38286), (61, 38292), (65, 38370), (70, 38412), (73, 38445), (76, 38466), (89, 38685), (95, 38730), (99, 38754), (100, 38778), (106, 38829), (114, 38898), (116, 38910), (117, 38949), (118, 38958), (119, 38964), (121, 38979), (122, 38988), (125, 39045),

Gene: Delrey21\_50 Start: 43180, Stop: 44334, Start Num: 25

Candidate Starts for Delrey21\_50:

(Start: 25 @43180 has 9 MA's), (31, 43219), (35, 43312), (36, 43321), (37, 43354), (38, 43360), (41, 43411), (46, 43444), (47, 43450), (59, 43543), (70, 43666), (73, 43699), (75, 43714), (76, 43720), (80, 43783), (81, 43795), (82, 43813), (95, 43984), (112, 44143), (119, 44221), (125, 44302),

Gene: Derg\_45 Start: 40440, Stop: 41564, Start Num: 24

Candidate Starts for Derg\_45:

(19, 40371), (Start: 24 @40440 has 51 MA's), (31, 40476), (35, 40569), (37, 40611), (38, 40617), (41, 40668), (47, 40707), (59, 40797), (65, 40878), (73, 40953), (76, 40974), (79, 41007), (81, 41049), (90, 41187), (104, 41301), (106, 41328), (114, 41388), (119, 41454), (124, 41487),

Gene: Dextert\_46 Start: 38194, Stop: 39375, Start Num: 24

Candidate Starts for Dextert\_46:

(8, 37912), (19, 38119), (Start: 24 @38194 has 51 MA's), (35, 38326), (36, 38335), (37, 38368), (38, 38374), (41, 38425), (59, 38554), (70, 38680), (73, 38713), (76, 38734), (81, 38809), (83, 38839), (89, 38953), (95, 38998), (100, 39046), (104, 39073), (110, 39136), (112, 39184), (114, 39196), (116, 39208), (118, 39256), (119, 39262), (125, 39343),

Gene: DoctorFroggo\_50 Start: 43180, Stop: 44334, Start Num: 25

Candidate Starts for DoctorFroggo\_50:

(Start: 25 @43180 has 9 MA's), (31, 43219), (35, 43312), (36, 43321), (37, 43354), (38, 43360), (41, 43411), (46, 43444), (47, 43450), (59, 43543), (70, 43666), (73, 43699), (75, 43714), (76, 43720), (80, 43783), (81, 43795), (82, 43813), (95, 43984), (112, 44143), (119, 44221), (125, 44302),

Gene: Dori\_63 Start: 49123, Stop: 50127, Start Num: 30

Candidate Starts for Dori\_63:

(Start: 30 @49123 has 38 MA's), (36, 49246), (37, 49273), (41, 49324), (42, 49327), (45, 49351), (63, 49477), (65, 49528), (67, 49552), (68, 49564), (70, 49570), (72, 49594), (74, 49606), (88, 49786), (90, 49795), (93, 49816), (95, 49828), (101, 49891), (103, 49900), (113, 49957), (119, 50023), (121, 50038),

Gene: Duplicity\_47 Start: 32451, Stop: 33461, Start Num: 30

Candidate Starts for Duplicity\_47:

(Start: 30 @32451 has 38 MA's), (33, 32526), (35, 32565), (36, 32574), (37, 32601), (41, 32652), (42, 32655), (45, 32679), (63, 32805), (65, 32856), (67, 32880), (68, 32892), (72, 32922), (88, 33114), (90, 33123), (92, 33141), (98, 33183), (102, 33231), (105, 33243), (121, 33372),

Gene: EMoore\_45 Start: 41058, Stop: 42209, Start Num: 23

Candidate Starts for EMoore\_45:

(2, 40575), (4, 40695), (5, 40773), (7, 40815), (9, 40824), (Start: 23 @41058 has 8 MA's), (36, 41208), (37, 41241), (38, 41247), (41, 41295), (47, 41334), (50, 41364), (54, 41382), (55, 41385), (56, 41394),

(59, 41427), (68, 41544), (70, 41550), (73, 41583), (76, 41604), (87, 41781), (89, 41823), (90, 41829), (112, 42018), (119, 42096),

Gene: EdmundFerry\_44 Start: 37970, Stop: 39154, Start Num: 24

Candidate Starts for EdmundFerry\_44:

(15, 37829), (Start: 24 @37970 has 51 MA's), (35, 38099), (37, 38141), (38, 38147), (41, 38198), (59, 38327), (70, 38453), (73, 38486), (76, 38507), (89, 38726), (95, 38771), (99, 38795), (100, 38819), (106, 38870), (108, 38897), (114, 38969), (116, 38981), (117, 39020), (118, 39029), (119, 39035), (121, 39050), (122, 39059), (125, 39116),

Gene: Fitzgerald\_47 Start: 42195, Stop: 43319, Start Num: 24

Candidate Starts for Fitzgerald\_47:

(Start: 24 @42195 has 51 MA's), (31, 42231), (35, 42324), (37, 42366), (38, 42372), (41, 42423), (46, 42456), (57, 42531), (59, 42552), (65, 42633), (70, 42675), (73, 42708), (76, 42729), (81, 42804), (90, 42942), (104, 43056), (114, 43143), (119, 43209), (121, 43224), (124, 43242),

Gene: Flatwoods\_48 Start: 40789, Stop: 41913, Start Num: 24

Candidate Starts for Flatwoods\_48:

(19, 40720), (Start: 24 @40789 has 51 MA's), (31, 40825), (35, 40918), (37, 40960), (38, 40966), (41, 41017), (47, 41056), (59, 41146), (65, 41227), (73, 41302), (76, 41323), (81, 41398), (90, 41536), (104, 41650), (106, 41677), (114, 41737), (119, 41803), (124, 41836),

Gene: Fosterous\_46 Start: 40754, Stop: 41881, Start Num: 24

Candidate Starts for Fosterous\_46:

(Start: 24 @40754 has 51 MA's), (31, 40793), (35, 40886), (37, 40928), (38, 40934), (41, 40985), (46, 41018), (57, 41093), (59, 41114), (70, 41237), (73, 41270), (76, 41291), (81, 41366), (90, 41504), (104, 41618), (106, 41645), (114, 41705), (119, 41771), (121, 41786), (124, 41804),

Gene: Fulbright\_46 Start: 31531, Stop: 32541, Start Num: 30

Candidate Starts for Fulbright\_46:

(Start: 30 @31531 has 38 MA's), (33, 31606), (35, 31645), (36, 31654), (37, 31681), (41, 31732), (42, 31735), (45, 31759), (63, 31885), (65, 31936), (67, 31960), (68, 31972), (72, 32002), (88, 32194), (90, 32203), (92, 32221), (98, 32263), (102, 32311), (105, 32323), (121, 32452),

Gene: GTE6\_45 Start: 38462, Stop: 39616, Start Num: 24

Candidate Starts for GTE6\_45:

(15, 38321), (Start: 24 @38462 has 51 MA's), (35, 38591), (37, 38633), (38, 38639), (41, 38690), (59, 38819), (61, 38825), (70, 38945), (73, 38978), (76, 38999), (83, 39104), (89, 39218), (95, 39263), (99, 39287), (100, 39311), (114, 39431), (116, 39443), (117, 39482), (118, 39491), (119, 39497), (121, 39512), (122, 39521), (125, 39578),

Gene: Gaea\_47 Start: 40432, Stop: 41565, Start Num: 24

Candidate Starts for Gaea\_47:

(19, 40363), (Start: 24 @40432 has 51 MA's), (35, 40570), (37, 40612), (38, 40618), (41, 40669), (46, 40702), (47, 40708), (59, 40798), (73, 40954), (76, 40975), (81, 41050), (90, 41188), (104, 41302), (106, 41329), (114, 41389), (119, 41455), (121, 41470), (124, 41488),

Gene: Galadriel\_48 Start: 41561, Stop: 42682, Start Num: 24

Candidate Starts for Galadriel\_48:

(21, 41522), (Start: 24 @41561 has 51 MA's), (31, 41597), (35, 41690), (37, 41732), (38, 41738), (41, 41789), (46, 41822), (57, 41897), (59, 41918), (70, 42041), (73, 42074), (76, 42095), (81, 42170), (90, 42308), (104, 42422), (106, 42449), (114, 42509), (119, 42575), (121, 42590), (124, 42608),

Gene: Geodirt\_47 Start: 42173, Stop: 43297, Start Num: 24

Candidate Starts for Geodirt\_47:

(Start: 24 @42173 has 51 MA's), (31, 42212), (35, 42305), (37, 42347), (38, 42353), (41, 42404), (46, 42437), (57, 42512), (59, 42533), (70, 42656), (73, 42689), (76, 42710), (81, 42785), (90, 42923), (104, 43037), (106, 43064), (114, 43124), (119, 43190), (121, 43205), (124, 43223),

Gene: Gex\_47 Start: 32458, Stop: 33468, Start Num: 30

Candidate Starts for Gex\_47:

(Start: 30 @32458 has 38 MA's), (33, 32533), (35, 32572), (36, 32581), (37, 32608), (41, 32659), (42, 32662), (45, 32686), (63, 32812), (65, 32863), (67, 32887), (68, 32899), (72, 32929), (88, 33121), (90, 33130), (92, 33148), (98, 33190), (102, 33238), (105, 33250), (121, 33379),

Gene: Gustavo\_47 Start: 40605, Stop: 41738, Start Num: 24

Candidate Starts for Gustavo\_47:

(19, 40536), (Start: 24 @40605 has 51 MA's), (35, 40743), (37, 40785), (38, 40791), (41, 40842), (46, 40875), (47, 40881), (48, 40884), (59, 40971), (73, 41127), (76, 41148), (81, 41223), (90, 41361), (104, 41475), (106, 41502), (114, 41562), (119, 41628), (121, 41643), (124, 41661),

Gene: Hanako\_52 Start: 33348, Stop: 34358, Start Num: 30

Candidate Starts for Hanako\_52:

(Start: 30 @33348 has 38 MA's), (35, 33462), (36, 33471), (37, 33498), (41, 33549), (42, 33552), (51, 33618), (56, 33645), (65, 33753), (66, 33771), (68, 33789), (92, 34038), (102, 34128), (105, 34140), (113, 34188), (121, 34269),

Gene: Hans\_49 Start: 40497, Stop: 41648, Start Num: 23

Candidate Starts for Hans\_49:

(Start: 23 @40497 has 8 MA's), (32, 40581), (35, 40638), (36, 40647), (37, 40680), (38, 40686), (41, 40734), (47, 40773), (50, 40803), (54, 40821), (55, 40824), (56, 40833), (68, 40983), (70, 40989), (73, 41022), (76, 41043), (80, 41106), (87, 41220), (89, 41262), (90, 41268), (106, 41406), (121, 41550), (125, 41616),

Gene: Inspectinfecti\_48 Start: 40943, Stop: 42094, Start Num: 23

Candidate Starts for Inspectinfecti\_48:

(Start: 23 @40943 has 8 MA's), (32, 41027), (35, 41084), (36, 41093), (37, 41126), (38, 41132), (41, 41180), (47, 41219), (50, 41249), (54, 41267), (55, 41270), (56, 41279), (68, 41429), (70, 41435), (73, 41468), (76, 41489), (80, 41552), (87, 41666), (89, 41708), (90, 41714), (106, 41852), (121, 41996), (125, 42062),

Gene: Island3\_48 Start: 33774, Stop: 34781, Start Num: 30

Candidate Starts for Island3\_48:

(18, 33654), (Start: 30 @33774 has 38 MA's), (35, 33885), (36, 33894), (37, 33921), (41, 33972), (42, 33975), (49, 34032), (51, 34041), (63, 34125), (65, 34176), (67, 34200), (68, 34212), (90, 34443), (92, 34461), (95, 34482), (97, 34497), (102, 34551), (103, 34554), (105, 34563), (106, 34581), (113, 34611), (121, 34692),

Gene: JKSyngboy\_45 Start: 41204, Stop: 42337, Start Num: 24

Candidate Starts for JKSyngboy\_45:

(19, 41135), (Start: 24 @41204 has 51 MA's), (35, 41342), (37, 41384), (38, 41390), (41, 41441), (46, 41474), (47, 41480), (48, 41483), (59, 41570), (73, 41726), (76, 41747), (81, 41822), (90, 41960), (104, 42074), (106, 42101), (114, 42161), (119, 42227), (121, 42242), (124, 42260),

Gene: Jabberwocky\_47 Start: 42599, Stop: 43762, Start Num: 24

Candidate Starts for Jabberwocky\_47:

(Start: 24 @42599 has 51 MA's), (31, 42638), (35, 42731), (37, 42773), (38, 42779), (41, 42830), (46, 42863), (57, 42938), (59, 42959), (65, 43040), (70, 43082), (73, 43115), (76, 43136), (81, 43211), (90, 43349), (104, 43463), (107, 43511), (109, 43526), (114, 43586), (119, 43652), (121, 43667), (124, 43685),

Gene: Jace\_31 Start: 25322, Stop: 26353, Start Num: 24

Candidate Starts for Jace\_31:

(Start: 24 @25322 has 51 MA's), (29, 25343), (39, 25523), (43, 25571), (57, 25664), (59, 25685), (68, 25793), (69, 25796), (71, 25820), (85, 25934), (86, 25955), (105, 26132), (106, 26150),

Gene: Jamie19\_45 Start: 31639, Stop: 32649, Start Num: 30

Candidate Starts for Jamie19\_45:

(Start: 30 @31639 has 38 MA's), (33, 31714), (35, 31753), (36, 31762), (37, 31789), (41, 31840), (42, 31843), (51, 31909), (56, 31936), (65, 32044), (66, 32062), (68, 32080), (92, 32329), (102, 32419), (105, 32431), (113, 32479), (121, 32560),

Gene: Kamashten\_46 Start: 40534, Stop: 41661, Start Num: 24

Candidate Starts for Kamashten\_46:

(Start: 24 @40534 has 51 MA's), (31, 40573), (35, 40666), (37, 40708), (38, 40714), (41, 40765), (46, 40798), (57, 40873), (59, 40894), (70, 41017), (73, 41050), (76, 41071), (81, 41146), (90, 41284), (104, 41398), (106, 41425), (114, 41485), (119, 41551), (121, 41566), (124, 41584),

Gene: Keitabear\_48 Start: 42189, Stop: 43352, Start Num: 24

Candidate Starts for Keitabear\_48:

(Start: 24 @42189 has 51 MA's), (31, 42228), (35, 42321), (37, 42363), (38, 42369), (41, 42420), (46, 42453), (57, 42528), (59, 42549), (70, 42672), (73, 42705), (76, 42726), (81, 42801), (90, 42939), (104, 43053), (107, 43101), (109, 43116), (114, 43176), (119, 43242), (121, 43257), (124, 43275),

Gene: Kevin1\_49 Start: 32486, Stop: 33493, Start Num: 30

Candidate Starts for Kevin1\_49:

(Start: 30 @32486 has 38 MA's), (35, 32597), (36, 32606), (37, 32633), (41, 32684), (42, 32687), (49, 32744), (51, 32753), (63, 32837), (65, 32888), (67, 32912), (68, 32924), (90, 33155), (92, 33173), (95, 33194), (97, 33209), (102, 33263), (103, 33266), (105, 33275), (106, 33293), (113, 33323), (121, 33404),

Gene: Kewpiedoll\_48 Start: 41475, Stop: 42602, Start Num: 24

Candidate Starts for Kewpiedoll\_48:

(Start: 24 @41475 has 51 MA's), (31, 41514), (35, 41607), (38, 41655), (41, 41706), (46, 41739), (57, 41814), (59, 41835), (70, 41958), (73, 41991), (76, 42012), (81, 42087), (90, 42225), (104, 42339), (106, 42366), (114, 42426), (119, 42492), (121, 42507), (124, 42525),

Gene: Kroos\_48 Start: 41345, Stop: 42472, Start Num: 24

Candidate Starts for Kroos\_48:

(19, 41276), (Start: 24 @41345 has 51 MA's), (31, 41384), (35, 41477), (37, 41519), (38, 41525), (41, 41576), (47, 41615), (59, 41705), (73, 41861), (76, 41882), (79, 41915), (81, 41957), (90, 42095), (104, 42209), (106, 42236), (114, 42296), (119, 42362), (124, 42395),

Gene: Kwekel\_45 Start: 37890, Stop: 39044, Start Num: 24

Candidate Starts for Kwekel\_45:

(Start: 24 @37890 has 51 MA's), (35, 38019), (37, 38061), (38, 38067), (41, 38118), (59, 38247), (61, 38253), (65, 38331), (70, 38373), (73, 38406), (76, 38427), (89, 38646), (95, 38691), (99, 38715), (100, 38739), (106, 38790), (114, 38859), (116, 38871), (117, 38910), (118, 38919), (119, 38925), (121, 38940), (122, 38949), (125, 39006),

Gene: Kwobi\_48 Start: 41331, Stop: 42458, Start Num: 24

Candidate Starts for Kwobi\_48:

(19, 41262), (Start: 24 @41331 has 51 MA's), (31, 41370), (35, 41463), (37, 41505), (38, 41511), (41, 41562), (47, 41601), (59, 41691), (73, 41847), (76, 41868), (79, 41901), (81, 41943), (90, 42081), (104, 42195), (111, 42261), (112, 42270), (114, 42282), (119, 42348), (121, 42363), (124, 42381),

Gene: Lennon\_48 Start: 42278, Stop: 43441, Start Num: 24

Candidate Starts for Lennon\_48:

(Start: 24 @42278 has 51 MA's), (31, 42317), (35, 42410), (37, 42452), (38, 42458), (41, 42509), (46, 42542), (57, 42617), (59, 42638), (70, 42761), (73, 42794), (76, 42815), (81, 42890), (90, 43028), (104, 43142), (107, 43190), (109, 43205), (114, 43265), (119, 43331), (121, 43346), (124, 43364),

Gene: Leonard\_47 Start: 40587, Stop: 41741, Start Num: 23

Candidate Starts for Leonard\_47:

(Start: 23 @40587 has 8 MA's), (27, 40602), (32, 40671), (35, 40728), (36, 40737), (37, 40770), (38, 40776), (41, 40824), (47, 40863), (50, 40893), (54, 40911), (55, 40914), (56, 40923), (64, 41031), (68, 41076), (70, 41082), (73, 41115), (76, 41136), (80, 41199), (87, 41313), (89, 41355), (90, 41361), (106, 41499), (121, 41643), (125, 41709),

Gene: LilHam\_45 Start: 39953, Stop: 41077, Start Num: 24

Candidate Starts for LilHam\_45:

(19, 39884), (Start: 24 @39953 has 51 MA's), (31, 39989), (35, 40082), (37, 40124), (38, 40130), (41, 40181), (47, 40220), (59, 40310), (73, 40466), (76, 40487), (79, 40520), (81, 40562), (90, 40700), (104, 40814), (106, 40841), (114, 40901), (119, 40967), (124, 41000),

Gene: Lilbeanie\_51 Start: 37513, Stop: 38625, Start Num: 22

Candidate Starts for Lilbeanie\_51:

(Start: 22 @37513 has 2 MA's), (26, 37537), (36, 37675), (39, 37723), (41, 37753), (44, 37771), (53, 37837), (54, 37840), (57, 37864), (66, 37981), (70, 38005), (72, 38029), (84, 38137), (87, 38179), (113, 38395), (119, 38467), (123, 38497), (125, 38548),

Gene: Love\_52 Start: 42726, Stop: 43853, Start Num: 24

Candidate Starts for Love\_52:

(Start: 24 @42726 has 51 MA's), (31, 42765), (35, 42858), (37, 42900), (38, 42906), (41, 42957), (46, 42990), (57, 43065), (59, 43086), (70, 43209), (73, 43242), (76, 43263), (81, 43338), (90, 43476), (104, 43590), (106, 43617), (114, 43677), (119, 43743), (121, 43758), (124, 43776),

Gene: Magsby\_47 Start: 32459, Stop: 33469, Start Num: 30

Candidate Starts for Magsby\_47:

(Start: 30 @32459 has 38 MA's), (33, 32534), (35, 32573), (36, 32582), (37, 32609), (41, 32660), (42, 32663), (45, 32687), (63, 32813), (65, 32864), (67, 32888), (68, 32900), (72, 32930), (88, 33122), (90, 33131), (92, 33149), (98, 33191), (102, 33239), (105, 33251), (121, 33380),

Gene: Mask\_63 Start: 49866, Stop: 50870, Start Num: 30

Candidate Starts for Mask\_63:

(Start: 30 @49866 has 38 MA's), (36, 49989), (37, 50016), (41, 50067), (42, 50070), (45, 50094), (63, 50220), (65, 50271), (67, 50295), (68, 50307), (70, 50313), (72, 50337), (74, 50349), (88, 50529), (90, 50538), (93, 50559), (95, 50571), (101, 50634), (103, 50643), (113, 50700), (119, 50766), (121, 50781),

Gene: McKinley\_50 Start: 42099, Stop: 43259, Start Num: 24

Candidate Starts for McKinley\_50:

(Start: 24 @42099 has 51 MA's), (31, 42138), (35, 42231), (37, 42273), (38, 42279), (41, 42330), (46, 42363), (57, 42438), (59, 42459), (70, 42582), (73, 42615), (76, 42636), (81, 42711), (90, 42849), (104, 42963), (109, 43026), (114, 43086), (119, 43152), (121, 43167), (124, 43185),

Gene: MelBins\_48 Start: 40737, Stop: 41921, Start Num: 23

Candidate Starts for MelBins\_48:

(Start: 23 @40737 has 8 MA's), (32, 40821), (36, 40887), (37, 40920), (38, 40926), (41, 40974), (47, 41013), (50, 41043), (54, 41061), (55, 41064), (56, 41073), (68, 41223), (70, 41229), (73, 41262), (76, 41283), (80, 41346), (87, 41460), (89, 41502), (106, 41646), (107, 41667), (109, 41682), (121, 41823), (125, 41889),

Gene: Melville\_50 Start: 32443, Stop: 33453, Start Num: 30

Candidate Starts for Melville\_50:

(Start: 30 @32443 has 38 MA's), (33, 32518), (35, 32557), (36, 32566), (37, 32593), (41, 32644), (42, 32647), (45, 32671), (63, 32797), (65, 32848), (67, 32872), (68, 32884), (72, 32914), (88, 33106), (90, 33115), (92, 33133), (98, 33175), (102, 33223), (105, 33235), (121, 33364),

Gene: MoontowerMania\_48 Start: 41934, Stop: 43061, Start Num: 24

Candidate Starts for MoontowerMania\_48:

(Start: 24 @41934 has 51 MA's), (31, 41973), (35, 42066), (37, 42108), (38, 42114), (41, 42165), (46, 42198), (57, 42273), (59, 42294), (70, 42417), (73, 42450), (76, 42471), (81, 42546), (90, 42684), (104, 42798), (106, 42825), (114, 42885), (119, 42951), (121, 42966), (124, 42984),

Gene: Natkenzie\_50 Start: 42409, Stop: 43563, Start Num: 25

Candidate Starts for Natkenzie\_50:

(Start: 25 @42409 has 9 MA's), (31, 42448), (35, 42541), (36, 42550), (37, 42583), (38, 42589), (40, 42625), (41, 42640), (46, 42673), (47, 42679), (59, 42772), (73, 42928), (75, 42943), (80, 43012), (81, 43024), (82, 43042), (95, 43213), (104, 43288), (112, 43372), (118, 43444), (119, 43450), (125, 43531),

Gene: Nenae\_51 Start: 33350, Stop: 34360, Start Num: 30

Candidate Starts for Nenae\_51:

(Start: 30 @33350 has 38 MA's), (35, 33464), (36, 33473), (37, 33500), (41, 33551), (42, 33554), (51, 33620), (56, 33647), (65, 33755), (66, 33773), (68, 33791), (92, 34040), (102, 34130), (105, 34142), (113, 34190), (121, 34271),

Gene: Nordenberg\_43 Start: 40917, Stop: 42038, Start Num: 24

Candidate Starts for Nordenberg\_43:

(21, 40878), (Start: 24 @40917 has 51 MA's), (31, 40953), (35, 41046), (37, 41088), (38, 41094), (41, 41145), (46, 41178), (57, 41253), (59, 41274), (70, 41397), (73, 41430), (76, 41451), (81, 41526), (90, 41664), (104, 41778), (106, 41805), (114, 41865), (119, 41931), (121, 41946), (124, 41964),

Gene: Panchino\_44 Start: 32985, Stop: 33995, Start Num: 30

Candidate Starts for Panchino\_44:

(Start: 30 @32985 has 38 MA's), (33, 33060), (35, 33099), (36, 33108), (37, 33135), (41, 33186), (42, 33189), (51, 33255), (56, 33282), (65, 33390), (66, 33408), (68, 33426), (92, 33675), (102, 33765), (105, 33777), (113, 33825), (121, 33906),

Gene: Paries\_51 Start: 42388, Stop: 43509, Start Num: 24

Candidate Starts for Paries\_51:

(21, 42349), (Start: 24 @42388 has 51 MA's), (31, 42424), (35, 42517), (37, 42559), (38, 42565), (41, 42616), (46, 42649), (57, 42724), (59, 42745), (70, 42868), (73, 42901), (76, 42922), (81, 42997), (90, 43135), (104, 43249), (106, 43276), (114, 43336), (119, 43402), (121, 43417), (124, 43435),

Gene: Parmesanjohn\_47 Start: 32462, Stop: 33472, Start Num: 30

Candidate Starts for Parmesanjohn\_47:

(Start: 30 @32462 has 38 MA's), (33, 32537), (35, 32576), (36, 32585), (37, 32612), (41, 32663), (42, 32666), (45, 32690), (63, 32816), (65, 32867), (67, 32891), (68, 32903), (72, 32933), (88, 33125), (90, 33134), (92, 33152), (98, 33194), (102, 33242), (105, 33254), (121, 33383),

Gene: PhancyPhin\_51 Start: 33344, Stop: 34354, Start Num: 30

Candidate Starts for PhancyPhin\_51:

(Start: 30 @33344 has 38 MA's), (35, 33458), (36, 33467), (37, 33494), (41, 33545), (42, 33548), (51, 33614), (56, 33641), (65, 33749), (66, 33767), (68, 33785), (92, 34034), (102, 34124), (105, 34136), (113, 34184), (121, 34265),

Gene: Phauci\_40 Start: 37439, Stop: 38590, Start Num: 23

Candidate Starts for Phauci\_40:

(Start: 23 @37439 has 8 MA's), (32, 37523), (36, 37589), (37, 37622), (38, 37628), (41, 37676), (47, 37715), (50, 37745), (52, 37754), (54, 37763), (55, 37766), (56, 37775), (68, 37925), (70, 37931), (73, 37964), (76, 37985), (80, 38048), (87, 38162), (89, 38204), (121, 38492), (125, 38558),

Gene: Phinally\_47 Start: 40584, Stop: 41738, Start Num: 23

Candidate Starts for Phinally\_47:

(Start: 23 @40584 has 8 MA's), (27, 40599), (32, 40668), (35, 40725), (36, 40734), (37, 40767), (38, 40773), (41, 40821), (47, 40860), (50, 40890), (54, 40908), (55, 40911), (56, 40920), (64, 41028), (68, 41073), (70, 41079), (73, 41112), (76, 41133), (80, 41196), (87, 41310), (89, 41352), (90, 41358), (106, 41496), (121, 41640), (125, 41706),

Gene: Phloss\_45 Start: 31869, Stop: 32879, Start Num: 30

Candidate Starts for Phloss\_45:

(Start: 30 @31869 has 38 MA's), (33, 31944), (35, 31983), (36, 31992), (37, 32019), (41, 32070), (42, 32073), (45, 32097), (63, 32223), (65, 32274), (67, 32298), (68, 32310), (72, 32340), (88, 32532), (90, 32541), (92, 32559), (98, 32601), (102, 32649), (105, 32661), (121, 32790),

Gene: Phrann\_48 Start: 33627, Stop: 34637, Start Num: 30

Candidate Starts for Phrann\_48:

(Start: 30 @33627 has 38 MA's), (35, 33741), (36, 33750), (37, 33777), (41, 33828), (42, 33831), (51, 33897), (56, 33924), (65, 34032), (66, 34050), (68, 34068), (92, 34317), (102, 34407), (105, 34419), (113, 34467), (121, 34548),

Gene: Pipsqueaks\_47 Start: 32439, Stop: 33449, Start Num: 30

Candidate Starts for Pipsqueaks\_47:

(Start: 30 @32439 has 38 MA's), (33, 32514), (35, 32553), (36, 32562), (37, 32589), (41, 32640), (42, 32643), (45, 32667), (63, 32793), (65, 32844), (67, 32868), (68, 32880), (72, 32910), (88, 33102), (90, 33111), (92, 33129), (98, 33171), (102, 33219), (105, 33231), (121, 33360),

Gene: Purgamenstris\_51 Start: 33348, Stop: 34358, Start Num: 30

Candidate Starts for Purgamenstris\_51:

(Start: 30 @33348 has 38 MA's), (35, 33462), (36, 33471), (37, 33498), (41, 33549), (42, 33552), (51, 33618), (56, 33645), (65, 33753), (66, 33771), (68, 33789), (92, 34038), (102, 34128), (105, 34140), (113, 34188), (121, 34269),

Gene: Raymond7\_45 Start: 33136, Stop: 34146, Start Num: 30

Candidate Starts for Raymond7\_45:



(Start: 30 @33136 has 38 MA's), (35, 33250), (36, 33259), (37, 33286), (41, 33337), (42, 33340), (51, 33406), (56, 33433), (65, 33541), (66, 33559), (68, 33577), (92, 33826), (102, 33916), (105, 33928), (113, 33976), (121, 34057),

Gene: Rebel\_43 Start: 29478, Stop: 30488, Start Num: 30

Candidate Starts for Rebel\_43:

(Start: 30 @29478 has 38 MA's), (35, 29592), (36, 29601), (37, 29628), (41, 29679), (42, 29682), (51, 29748), (56, 29775), (65, 29883), (66, 29901), (68, 29919), (92, 30168), (102, 30258), (105, 30270), (113, 30318), (121, 30399),

Gene: Redi\_51 Start: 33347, Stop: 34357, Start Num: 30

Candidate Starts for Redi\_51:

(Start: 30 @33347 has 38 MA's), (35, 33461), (36, 33470), (37, 33497), (41, 33548), (42, 33551), (51, 33617), (56, 33644), (65, 33752), (66, 33770), (68, 33788), (92, 34037), (102, 34127), (105, 34139), (113, 34187), (121, 34268),

Gene: Ribeye\_48 Start: 41766, Stop: 42890, Start Num: 24

Candidate Starts for Ribeye\_48:

(19, 41697), (Start: 24 @41766 has 51 MA's), (31, 41802), (35, 41895), (37, 41937), (38, 41943), (41, 41994), (47, 42033), (59, 42123), (73, 42279), (76, 42300), (79, 42333), (81, 42375), (90, 42513), (104, 42627), (106, 42654), (114, 42714), (119, 42780), (124, 42813),

Gene: RiverRaider\_49 Start: 40177, Stop: 41307, Start Num: 24

Candidate Starts for RiverRaider\_49:

(Start: 24 @40177 has 51 MA's), (35, 40315), (36, 40324), (37, 40357), (38, 40363), (41, 40414), (46, 40447), (47, 40453), (52, 40489), (59, 40543), (70, 40666), (73, 40699), (76, 40720), (81, 40795), (90, 40933), (97, 40987), (104, 41047), (112, 41122), (115, 41137), (118, 41194), (119, 41200), (124, 41233),

Gene: RoadKill\_43 Start: 37465, Stop: 38649, Start Num: 24

Candidate Starts for RoadKill\_43:

(15, 37324), (Start: 24 @37465 has 51 MA's), (35, 37594), (37, 37636), (38, 37642), (41, 37693), (59, 37822), (70, 37948), (73, 37981), (76, 38002), (89, 38221), (95, 38266), (99, 38290), (100, 38314), (106, 38365), (108, 38392), (114, 38464), (116, 38476), (117, 38515), (118, 38524), (119, 38530), (121, 38545), (122, 38554), (125, 38611),

Gene: Rofo\_48 Start: 41463, Stop: 42809, Start Num: 10

Candidate Starts for Rofo\_48:

(1, 40968), (6, 41394), (Start: 10 @41463 has 1 MA's), (13, 41526), (14, 41565), (17, 41592), (31, 41721), (35, 41814), (37, 41856), (38, 41862), (41, 41913), (46, 41946), (57, 42021), (59, 42042), (70, 42165), (73, 42198), (76, 42219), (81, 42294), (90, 42432), (104, 42546), (106, 42573), (114, 42633), (119, 42699), (121, 42714), (124, 42732),

Gene: Rubeelu\_50 Start: 33050, Stop: 34057, Start Num: 30

Candidate Starts for Rubeelu\_50:

(11, 32807), (12, 32819), (16, 32885), (18, 32930), (Start: 30 @33050 has 38 MA's), (35, 33161), (36, 33170), (37, 33197), (41, 33248), (42, 33251), (49, 33308), (51, 33317), (63, 33401), (65, 33452), (67, 33476), (68, 33488), (90, 33719), (92, 33737), (95, 33758), (97, 33773), (102, 33827), (103, 33830), (105, 33839), (106, 33857), (113, 33887), (121, 33968),

Gene: Sampson\_50 Start: 42354, Stop: 43508, Start Num: 25

Candidate Starts for Sampson\_50:

(Start: 25 @42354 has 9 MA's), (31, 42393), (35, 42486), (36, 42495), (37, 42528), (38, 42534), (40, 42570), (41, 42585), (46, 42618), (47, 42624), (59, 42717), (73, 42873), (75, 42888), (80, 42957), (81, 42969), (82, 42987), (95, 43158), (104, 43233), (112, 43317), (118, 43389), (119, 43395), (125, 43476),

Gene: Sanjuju\_47 Start: 42328, Stop: 43452, Start Num: 24

Candidate Starts for Sanjuju\_47:

(Start: 24 @42328 has 51 MA's), (31, 42364), (35, 42457), (37, 42499), (38, 42505), (41, 42556), (46, 42589), (57, 42664), (59, 42685), (65, 42766), (70, 42808), (73, 42841), (76, 42862), (81, 42937), (90, 43075), (104, 43189), (114, 43276), (119, 43342), (121, 43357), (124, 43375),

Gene: Saronaya\_47 Start: 40605, Stop: 41738, Start Num: 24

Candidate Starts for Saronaya\_47:

(19, 40536), (Start: 24 @40605 has 51 MA's), (35, 40743), (37, 40785), (38, 40791), (41, 40842), (46, 40875), (47, 40881), (48, 40884), (59, 40971), (73, 41127), (76, 41148), (81, 41223), (90, 41361), (104, 41475), (106, 41502), (114, 41562), (119, 41628), (121, 41643), (124, 41661),

Gene: Schnauzer\_48 Start: 32462, Stop: 33472, Start Num: 30

Candidate Starts for Schnauzer\_48:

(Start: 30 @32462 has 38 MA's), (33, 32537), (35, 32576), (36, 32585), (37, 32612), (41, 32663), (42, 32666), (45, 32690), (63, 32816), (65, 32867), (67, 32891), (68, 32903), (72, 32933), (88, 33125), (90, 33134), (92, 33152), (98, 33194), (102, 33242), (105, 33254), (121, 33383),

Gene: SchottB\_46 Start: 41605, Stop: 42732, Start Num: 24

Candidate Starts for SchottB\_46:

(19, 41536), (Start: 24 @41605 has 51 MA's), (31, 41644), (35, 41737), (37, 41779), (38, 41785), (41, 41836), (47, 41875), (59, 41965), (73, 42121), (76, 42142), (79, 42175), (81, 42217), (90, 42355), (104, 42469), (106, 42496), (114, 42556), (119, 42622), (124, 42655),

Gene: Scioto\_51 Start: 42410, Stop: 43564, Start Num: 25

Candidate Starts for Scioto\_51:

(Start: 25 @42410 has 9 MA's), (31, 42449), (35, 42542), (36, 42551), (37, 42584), (38, 42590), (40, 42626), (41, 42641), (46, 42674), (47, 42680), (59, 42773), (73, 42929), (75, 42944), (80, 43013), (81, 43025), (82, 43043), (95, 43214), (104, 43289), (112, 43373), (118, 43445), (119, 43451), (125, 43532),

Gene: Scitech\_44 Start: 30478, Stop: 31488, Start Num: 30

Candidate Starts for Scitech\_44:

(Start: 30 @30478 has 38 MA's), (33, 30553), (35, 30592), (36, 30601), (37, 30628), (41, 30679), (42, 30682), (45, 30706), (63, 30832), (65, 30883), (67, 30907), (68, 30919), (72, 30949), (88, 31141), (90, 31150), (92, 31168), (98, 31210), (102, 31258), (105, 31270), (121, 31399),

Gene: Sedona\_48 Start: 41923, Stop: 43047, Start Num: 24

Candidate Starts for Sedona\_48:

(21, 41884), (Start: 24 @41923 has 51 MA's), (31, 41959), (35, 42052), (37, 42094), (38, 42100), (41, 42151), (46, 42184), (57, 42259), (59, 42280), (70, 42403), (73, 42436), (76, 42457), (81, 42532), (90, 42670), (104, 42784), (114, 42871), (119, 42937), (121, 42952), (124, 42970),

Gene: Shivanishola\_48 Start: 40593, Stop: 41753, Start Num: 24

Candidate Starts for Shivanishola\_48:

(21, 40554), (Start: 24 @40593 has 51 MA's), (31, 40629), (35, 40722), (37, 40764), (38, 40770), (41, 40821), (46, 40854), (57, 40929), (59, 40950), (70, 41073), (73, 41106), (76, 41127), (81, 41202), (90, 41340), (104, 41454), (107, 41502), (109, 41517), (114, 41577), (119, 41643), (121, 41658), (124,

41676),

Gene: ShrimpFriedEgg\_51 Start: 33347, Stop: 34357, Start Num: 30

Candidate Starts for ShrimpFriedEgg\_51:

(Start: 30 @33347 has 38 MA's), (35, 33461), (36, 33470), (37, 33497), (41, 33548), (42, 33551), (51, 33617), (56, 33644), (65, 33752), (66, 33770), (68, 33788), (92, 34037), (102, 34127), (105, 34139), (113, 34187), (121, 34268),

Gene: Shweta\_45 Start: 31406, Stop: 32416, Start Num: 30

Candidate Starts for Shweta\_45:

(Start: 30 @31406 has 38 MA's), (35, 31520), (36, 31529), (37, 31556), (41, 31607), (42, 31610), (45, 31634), (48, 31649), (61, 31742), (63, 31760), (65, 31811), (67, 31835), (68, 31847), (70, 31853), (72, 31877), (74, 31889), (92, 32096), (102, 32186), (105, 32198), (113, 32246), (121, 32327),

Gene: Silvafighter\_48 Start: 32435, Stop: 33445, Start Num: 30

Candidate Starts for Silvafighter\_48:

(Start: 30 @32435 has 38 MA's), (33, 32510), (35, 32549), (36, 32558), (37, 32585), (41, 32636), (42, 32639), (45, 32663), (63, 32789), (65, 32840), (67, 32864), (68, 32876), (72, 32906), (88, 33098), (90, 33107), (92, 33125), (98, 33167), (102, 33215), (105, 33227), (121, 33356),

Gene: Sitar\_48 Start: 42278, Stop: 43441, Start Num: 24

Candidate Starts for Sitar\_48:

(Start: 24 @42278 has 51 MA's), (31, 42317), (35, 42410), (37, 42452), (38, 42458), (41, 42509), (46, 42542), (57, 42617), (59, 42638), (70, 42761), (73, 42794), (76, 42815), (81, 42890), (90, 43028), (104, 43142), (107, 43190), (109, 43205), (114, 43265), (119, 43331), (121, 43346), (124, 43364),

Gene: Smurph\_47 Start: 32462, Stop: 33472, Start Num: 30

Candidate Starts for Smurph\_47:

(Start: 30 @32462 has 38 MA's), (33, 32537), (35, 32576), (36, 32585), (37, 32612), (41, 32663), (42, 32666), (45, 32690), (63, 32816), (65, 32867), (67, 32891), (68, 32903), (72, 32933), (88, 33125), (90, 33134), (92, 33152), (98, 33194), (102, 33242), (105, 33254), (121, 33383),

Gene: Snekmaggedon\_45 Start: 31639, Stop: 32649, Start Num: 30

Candidate Starts for Snekmaggedon\_45:

(Start: 30 @31639 has 38 MA's), (33, 31714), (35, 31753), (36, 31762), (37, 31789), (41, 31840), (42, 31843), (51, 31909), (56, 31936), (65, 32044), (66, 32062), (68, 32080), (92, 32329), (102, 32419), (105, 32431), (113, 32479), (121, 32560),

Gene: SpongeBob\_45 Start: 31639, Stop: 32649, Start Num: 30

Candidate Starts for SpongeBob\_45:

(Start: 30 @31639 has 38 MA's), (33, 31714), (35, 31753), (36, 31762), (37, 31789), (41, 31840), (42, 31843), (51, 31909), (56, 31936), (65, 32044), (66, 32062), (68, 32080), (92, 32329), (102, 32419), (105, 32431), (113, 32479), (121, 32560),

Gene: StorminNorm\_47 Start: 40696, Stop: 41823, Start Num: 24

Candidate Starts for StorminNorm\_47:

(19, 40627), (Start: 24 @40696 has 51 MA's), (31, 40735), (35, 40828), (37, 40870), (38, 40876), (41, 40927), (47, 40966), (59, 41056), (73, 41212), (76, 41233), (79, 41266), (81, 41308), (90, 41446), (104, 41560), (106, 41587), (114, 41647), (119, 41713), (124, 41746),

Gene: Stultus\_47 Start: 41231, Stop: 42394, Start Num: 24

Candidate Starts for Stultus\_47:

(Start: 24 @41231 has 51 MA's), (31, 41270), (35, 41363), (37, 41405), (38, 41411), (41, 41462), (46, 41495), (57, 41570), (59, 41591), (70, 41714), (73, 41747), (76, 41768), (81, 41843), (90, 41981), (104, 42095), (107, 42143), (109, 42158), (114, 42218), (119, 42284), (121, 42299), (124, 42317),

Gene: Tangent\_49 Start: 41305, Stop: 42432, Start Num: 24

Candidate Starts for Tangent\_49:

(Start: 24 @41305 has 51 MA's), (31, 41344), (35, 41437), (37, 41479), (38, 41485), (41, 41536), (46, 41569), (57, 41644), (59, 41665), (70, 41788), (73, 41821), (76, 41842), (81, 41917), (90, 42055), (104, 42169), (106, 42196), (114, 42256), (119, 42322), (121, 42337), (124, 42355),

Gene: Tangerine\_47 Start: 40477, Stop: 41601, Start Num: 24

Candidate Starts for Tangerine\_47:

(19, 40408), (Start: 24 @40477 has 51 MA's), (31, 40513), (35, 40606), (37, 40648), (38, 40654), (41, 40705), (47, 40744), (59, 40834), (65, 40915), (73, 40990), (76, 41011), (81, 41086), (90, 41224), (104, 41338), (106, 41365), (111, 41404), (114, 41425), (119, 41491), (124, 41524),

Gene: Tapioca\_49 Start: 32428, Stop: 33438, Start Num: 30

Candidate Starts for Tapioca\_49:

(Start: 30 @32428 has 38 MA's), (33, 32503), (35, 32542), (36, 32551), (37, 32578), (41, 32629), (42, 32632), (45, 32656), (63, 32782), (65, 32833), (67, 32857), (68, 32869), (72, 32899), (88, 33091), (90, 33100), (92, 33118), (98, 33160), (102, 33208), (105, 33220), (121, 33349),

Gene: Tardus\_52 Start: 42085, Stop: 43260, Start Num: 25

Candidate Starts for Tardus\_52:

(Start: 25 @42085 has 9 MA's), (31, 42124), (35, 42217), (36, 42226), (37, 42259), (38, 42265), (41, 42316), (46, 42349), (47, 42355), (59, 42448), (60, 42457), (70, 42592), (73, 42625), (75, 42640), (76, 42646), (80, 42709), (82, 42739), (95, 42910), (104, 42985), (112, 43069), (118, 43141), (119, 43147), (125, 43228),

Gene: Thing3\_46 Start: 40534, Stop: 41661, Start Num: 24

Candidate Starts for Thing3\_46:

(Start: 24 @40534 has 51 MA's), (31, 40573), (35, 40666), (37, 40708), (38, 40714), (41, 40765), (46, 40798), (57, 40873), (59, 40894), (70, 41017), (73, 41050), (76, 41071), (81, 41146), (90, 41284), (104, 41398), (106, 41425), (114, 41485), (119, 41551), (121, 41566), (124, 41584),

Gene: ThulaThula\_52 Start: 36104, Stop: 37114, Start Num: 30

Candidate Starts for ThulaThula\_52:

(Start: 30 @36104 has 38 MA's), (35, 36218), (36, 36227), (37, 36254), (41, 36305), (42, 36308), (45, 36332), (63, 36458), (65, 36509), (68, 36545), (72, 36575), (90, 36776), (92, 36794), (94, 36812), (102, 36884), (105, 36896), (119, 37010), (121, 37025),

Gene: Tiamoceli\_46 Start: 38786, Stop: 39940, Start Num: 24

Candidate Starts for Tiamoceli\_46:

(15, 38645), (Start: 24 @38786 has 51 MA's), (35, 38915), (37, 38957), (38, 38963), (41, 39014), (59, 39143), (61, 39149), (65, 39227), (70, 39269), (73, 39302), (76, 39323), (89, 39542), (95, 39587), (99, 39611), (100, 39635), (106, 39686), (114, 39755), (116, 39767), (117, 39806), (118, 39815), (119, 39821), (121, 39836), (122, 39845), (125, 39902),

Gene: TurkishDelight\_59 Start: 49631, Stop: 50719, Start Num: 22

Candidate Starts for TurkishDelight\_59:

(Start: 22 @49631 has 2 MA's), (34, 49781), (36, 49799), (37, 49826), (41, 49874), (47, 49913), (58, 49991), (62, 50042), (68, 50150), (70, 50156), (72, 50180), (77, 50222), (78, 50240), (86, 50312), (91, 50384), (104, 50483), (120, 50621),

Gene: Twonlo\_43 Start: 37416, Stop: 38570, Start Num: 24

Candidate Starts for Twonlo\_43:

(15, 37275), (Start: 24 @37416 has 51 MA's), (35, 37545), (37, 37587), (38, 37593), (41, 37644), (59, 37773), (70, 37899), (73, 37932), (76, 37953), (89, 38172), (95, 38217), (99, 38241), (100, 38265), (106, 38316), (114, 38385), (116, 38397), (117, 38436), (118, 38445), (119, 38451), (121, 38466), (122, 38475), (125, 38532),

Gene: Tycho\_47 Start: 40564, Stop: 41691, Start Num: 24

Candidate Starts for Tycho\_47:

(19, 40495), (Start: 24 @40564 has 51 MA's), (31, 40603), (35, 40696), (37, 40738), (38, 40744), (41, 40795), (47, 40834), (59, 40924), (73, 41080), (76, 41101), (79, 41134), (81, 41176), (90, 41314), (104, 41428), (106, 41455), (114, 41515), (119, 41581), (124, 41614),

Gene: Verity\_50 Start: 43180, Stop: 44334, Start Num: 25

Candidate Starts for Verity\_50:

(Start: 25 @43180 has 9 MA's), (31, 43219), (35, 43312), (36, 43321), (37, 43354), (38, 43360), (41, 43411), (46, 43444), (47, 43450), (59, 43543), (70, 43666), (73, 43699), (75, 43714), (76, 43720), (80, 43783), (81, 43795), (82, 43813), (95, 43984), (112, 44143), (119, 44221), (125, 44302),

Gene: ViaConlectus\_50 Start: 41038, Stop: 42213, Start Num: 25

Candidate Starts for ViaConlectus\_50:

(Start: 25 @41038 has 9 MA's), (28, 41050), (31, 41077), (35, 41170), (36, 41179), (37, 41212), (38, 41218), (40, 41254), (41, 41269), (46, 41302), (47, 41308), (59, 41401), (60, 41410), (70, 41545), (73, 41578), (74, 41581), (75, 41593), (76, 41599), (80, 41662), (82, 41692), (95, 41863), (104, 41938), (112, 42022), (118, 42094), (119, 42100), (121, 42115),

Gene: Vivi2\_51 Start: 42332, Stop: 43459, Start Num: 24

Candidate Starts for Vivi2\_51:

(Start: 24 @42332 has 51 MA's), (31, 42371), (35, 42464), (37, 42506), (38, 42512), (41, 42563), (46, 42596), (57, 42671), (59, 42692), (70, 42815), (73, 42848), (76, 42869), (81, 42944), (90, 43082), (104, 43196), (106, 43223), (114, 43283), (119, 43349), (121, 43364), (124, 43382),

Gene: Xerxes\_47 Start: 32459, Stop: 33469, Start Num: 30

Candidate Starts for Xerxes\_47:

(Start: 30 @32459 has 38 MA's), (33, 32534), (35, 32573), (36, 32582), (37, 32609), (41, 32660), (42, 32663), (45, 32687), (63, 32813), (65, 32864), (67, 32888), (68, 32900), (72, 32930), (88, 33122), (90, 33131), (92, 33149), (98, 33191), (102, 33239), (105, 33251), (121, 33380),

Gene: YorkOnyx\_48 Start: 40821, Stop: 41948, Start Num: 24

Candidate Starts for YorkOnyx\_48:

(19, 40752), (Start: 24 @40821 has 51 MA's), (31, 40860), (35, 40953), (37, 40995), (38, 41001), (41, 41052), (47, 41091), (59, 41181), (73, 41337), (76, 41358), (79, 41391), (81, 41433), (90, 41571), (96, 41616), (104, 41685), (112, 41760), (114, 41772), (119, 41838), (121, 41853), (124, 41871),

Gene: Zipp\_51 Start: 43095, Stop: 44249, Start Num: 25

Candidate Starts for Zipp\_51:

(Start: 25 @43095 has 9 MA's), (31, 43134), (35, 43227), (36, 43236), (37, 43269), (38, 43275), (41, 43326), (46, 43359), (47, 43365), (59, 43458), (70, 43581), (73, 43614), (75, 43629), (76, 43635), (80, 43698), (81, 43710), (82, 43728), (95, 43899), (112, 44058), (119, 44136), (125, 44217),

Gene: Zitch\_53 Start: 41194, Stop: 42369, Start Num: 25

Candidate Starts for Zitch\_53:

(Start: 25 @41194 has 9 MA's), (28, 41206), (31, 41233), (35, 41326), (36, 41335), (37, 41368), (38, 41374), (41, 41425), (46, 41458), (47, 41464), (59, 41557), (60, 41566), (70, 41701), (73, 41734), (75, 41749), (76, 41755), (80, 41818), (82, 41848), (95, 42019), (104, 42094), (112, 42178), (118, 42250), (119, 42256), (125, 42337),