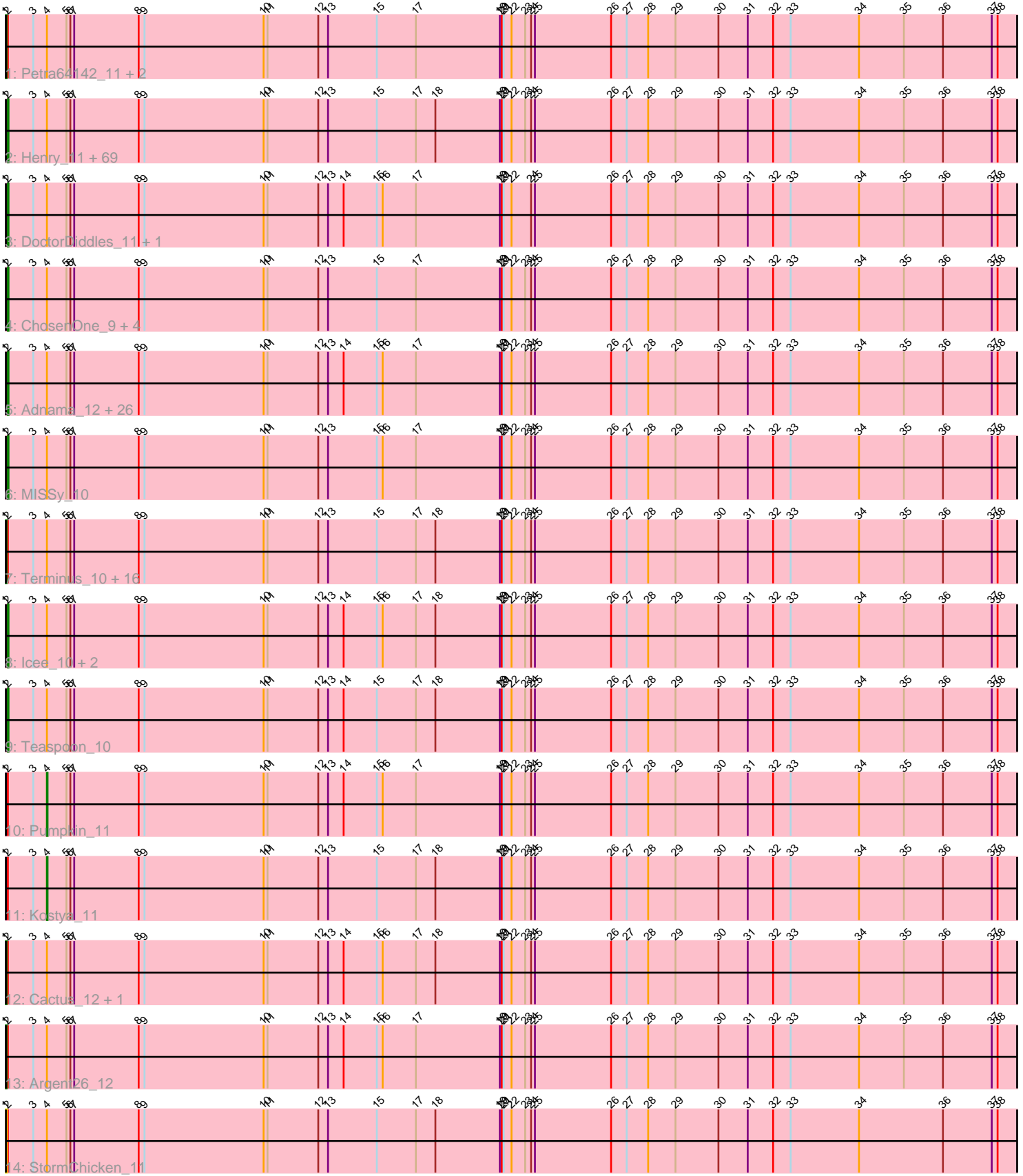


Pham 212409



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 212409 Report

This analysis was run 02/22/25 on database version 588.

Pham number 212409 has 135 members, 10 are drafts.

Phages represented in each track:

- Track 1 : Petra64142\_11, GoldenSpark\_12, Lilpickle\_9
- Track 2 : Henry\_11, BigBubba\_10, Palpatine\_10, Bruin\_10, IHOP\_10, OrionPax\_11, Misfit\_10, Hopey\_11, HanKaySha\_11, Qualification\_12, Rakim\_12, Bench\_12, Balomoji\_10, StellaBean\_11, Miniwave\_11, Command613\_12, Thimble\_11, CrystalP\_11, 244\_11, Mindy\_11, Tomaszewski\_10, Mosby\_10, Pat3\_10, Moldemort\_11, Marshmallow\_11, FairyPath\_11, TBrady12\_12, Becksu\_10, Phaux\_9, Glexan\_9, BaboJay\_10, ShamWow\_11, Sotrice96\_11, Rimmer\_10, Simpliphy\_11, SophKB\_11, Buck\_10, Czyszczo1\_11, NelitzaMV\_11, Highbury\_11, Phaja\_10, Bask21\_10, Kanye\_12, TeardropMSU\_10, Nimrod\_10, SirDuracell\_10, Youngblood\_10, Gator\_9, DrDrey\_11, Tuco\_11, Willez\_10, ChotaBhai\_10, Sassay\_10, MadamMonkfish\_10, Murphy\_10, Policronamos\_10, Inca\_10, Dumbo\_10, Myrale\_11, BugsBunny\_8, Tarkin\_12, Murica\_9, Nala\_10, Cookies\_11, Amao\_11, NoSleep\_11, xkcd\_11, FoghornLeghorn\_10, Saints25\_11, RiverMonster\_10
- Track 3 : DoctorDiddles\_11, Holt\_12
- Track 4 : ChosenOne\_9, Elite2014\_9, Hoonter\_12, ShereKhan\_12, Easy2Say\_11
- Track 5 : Adnama\_12, FireRed\_10, Thresher\_11, Lilizi\_12, Filch\_11, AmericanBeauty\_12, Maxxinista\_11, Stark\_11, Cjw1\_10, Ukulele\_10, MPhalcon\_10, Goku\_11, Eureka\_10, Stank\_12, GooberAzure\_12, Xandras\_12, Wiggin\_12, Elph10\_11, Goldilocks\_12, StolenFromERC\_12, Phrux\_10, PhatBacter\_10, Gemini\_12, Lilac\_12, JeTaime\_12, Gage\_12, Kimchi\_12
- Track 6 : MISSy\_10
- Track 7 : Terminus\_10, Flypotenuse\_9, Dusk\_10, Manda\_10, YassJohnny\_11, ABCat\_10, Emmina\_10, BilboSwaggins\_11, Toto\_11, Paperbeatsrock\_12, Contagion\_10, HuffyPuff\_9, Porky\_9, Harella\_9, BadStone\_10, Pharsalus\_11, Daikon\_9
- Track 8 : Icee\_10, Traaww1\_9, Asriel\_10
- Track 9 : Teaspoon\_10
- Track 10 : Pumpkin\_11
- Track 11 : Kostya\_11
- Track 12 : Cactus\_12, Barbarian\_10
- Track 13 : Argent26\_12
- Track 14 : StormChicken\_11

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

The start number called the most often in the published annotations is 2, it was called in 103 of the 125 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- 244\_11, Adnama\_12, Amao\_11, AmericanBeauty\_12, Asriel\_10, BaboJay\_10, Balomoji\_10, Bask21\_10, Becksu\_10, Bench\_12, BigBubba\_10, Bruin\_10, Buck\_10, BugsBunny\_8, ChosenOne\_9, ChotaBhai\_10, Cjw1\_10, Command613\_12, Cookies\_11, CrystalP\_11, Czyszczo1\_11, DoctorDiddles\_11, DrDrey\_11, Dumbo\_10, Easy2Say\_11, Elite2014\_9, Elph10\_11, Eureka\_10, FairyPath\_11, Filch\_11, FireRed\_10, FoghornLeghorn\_10, Gage\_12, Gator\_9, Gemini\_12, Glexan\_9, Goku\_11, Goldilocks\_12, GooberAzure\_12, HanKaySha\_11, Henry\_11, Highbury\_11, Holt\_12, Hoonter\_12, Hopey\_11, IHOP\_10, Icee\_10, Inca\_10, JeTaime\_12, Kanye\_12, Kimchi\_12, Lilac\_12, Lilizi\_12, MISSy\_10, MPhalcon\_10, MadamMonkfish\_10, Marshmallow\_11, Maxxinista\_11, Mindy\_11, Miniwave\_11, Misfit\_10, Moldemort\_11, Mosby\_10, Murica\_9, Murphy\_10, Myrale\_11, Nala\_10, NelitzaMV\_11, Nimrod\_10, NoSleep\_11, OrionPax\_11, Palpatine\_10, Pat3\_10, Phaja\_10, PhatBacter\_10, Phaux\_9, Phrux\_10, Policronamos\_10, Qualification\_12, Rakim\_12, Rimmer\_10, RiverMonster\_10, Saints25\_11, Sassay\_10, ShamWow\_11, ShereKhan\_12, Simpliphy\_11, SirDuracell\_10, SophKB\_11, Sotrice96\_11, Stank\_12, Stark\_11, StellaBean\_11, StolenFromERC\_12, TBrady12\_12, Tarkin\_12, TeardropMSU\_10, Teaspoon\_10, Thimble\_11, Thresher\_11, Tomaszewski\_10, Traaww1\_9, Tucu\_11, Ukulele\_10, Wiggin\_12, Willez\_10, Xandras\_12, Youngblood\_10, xkcd\_11,

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

- ABCat\_10, Argent26\_12, BadStone\_10, Barbarian\_10, BilboSwaggins\_11, Cactus\_12, Contagion\_10, Daikon\_9, Dusk\_10, Emmina\_10, Flypotenuse\_9, GoldenSpark\_12, Harella\_9, HufflyPuff\_9, Kostya\_11, Lilpickle\_9, Manda\_10, Paperbeatsrock\_12, Petra64142\_11, Pharsalus\_11, Porky\_9, Pumpkin\_11, StormChicken\_11, Terminus\_10, Toto\_11, YassJohnny\_11,

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

- 

### Summary by start number:

Start 1:

- Found in 135 of 135 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 20 of 125
- Called 17.8% of time when present
- Phage (with cluster) where this start called: ABCat\_10 (E), Argent26\_12 (E), BadStone\_10 (E), Barbarian\_10 (E), BilboSwaggins\_11 (E), Cactus\_12 (E), Contagion\_10 (E), Daikon\_9 (E), Dusk\_10 (E), Emmina\_10 (E), Flypotenuse\_9 (E), GoldenSpark\_12 (E), Harella\_9 (E), HufflyPuff\_9 (E), Lilpickle\_9 (E), Manda\_10 (E), Paperbeatsrock\_12 (E), Petra64142\_11 (E), Pharsalus\_11 (E), Porky\_9 (E), StormChicken\_11 (E), Terminus\_10 (E), Toto\_11 (E), YassJohnny\_11 (E),

Start 2:

- Found in 135 of 135 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 103 of 125
- Called 80.7% of time when present

- Phage (with cluster) where this start called: 244\_11 (E), Adnama\_12 (E), Amao\_11 (E), AmericanBeauty\_12 (E), Asriel\_10 (E), BaboJay\_10 (E), Balomoji\_10 (E), Bask21\_10 (E), Becksu\_10 (E), Bench\_12 (E), BigBubba\_10 (E), Bruin\_10 (E), Buck\_10 (E), BugsBunny\_8 (E), ChosenOne\_9 (E), ChotaBhai\_10 (E), Cjw1\_10 (E), Command613\_12 (E), Cookies\_11 (E), CrystalP\_11 (E), Czystczon1\_11 (E), DoctorDiddles\_11 (E), DrDrey\_11 (E), Dumbo\_10 (E), Easy2Say\_11 (E), Elite2014\_9 (E), Elph10\_11 (E), Eureka\_10 (E), FairyPath\_11 (E), Filch\_11 (E), FireRed\_10 (E), FoghornLeghorn\_10 (E), Gage\_12 (E), Gator\_9 (E), Gemini\_12 (E), Glexan\_9 (E), Goku\_11 (E), Goldilocks\_12 (E), GooberAzure\_12 (E), HanKaySha\_11 (E), Henry\_11 (E), Highbury\_11 (E), Holt\_12 (E), Hoonter\_12 (E), Hopey\_11 (E), IHOP\_10 (E), Icee\_10 (E), Inca\_10 (E), JeTaime\_12 (E), Kanye\_12 (E), Kimchi\_12 (E), Lilac\_12 (E), Lilizi\_12 (E), MISSy\_10 (E), MPhalcon\_10 (E), MadamMonkfish\_10 (E), Marshmallow\_11 (E), Maxxinsta\_11 (E), Mindy\_11 (E), Miniwave\_11 (E), Misfit\_10 (E), Moldemort\_11 (E), Mosby\_10 (E), Murica\_9 (E), Murphy\_10 (E), Myrale\_11 (E), Nala\_10 (E), NelitzaMV\_11 (E), Nimrod\_10 (E), NoSleep\_11 (E), OrionPax\_11 (E), Palpatine\_10 (E), Pat3\_10 (E), Phaja\_10 (E), PhatBacter\_10 (E), Phaux\_9 (E), Phrux\_10 (E), Policronamos\_10 (E), Qualification\_12 (E), Rakim\_12 (E), Rimmer\_10 (E), RiverMonster\_10 (E), Saints25\_11 (E), Sassay\_10 (E), ShamWow\_11 (E), ShereKhan\_12 (E), Simpliphy\_11 (E), SirDuracell\_10 (E), SophKB\_11 (E), Sotrice96\_11 (E), Stank\_12 (E), Stark\_11 (E), StellaBean\_11 (E), StolenFromERC\_12 (E), TBrady12\_12 (E), Tarkin\_12 (E), TeardropMSU\_10 (E), Teaspoon\_10 (E), Thimble\_11 (E), Thresher\_11 (E), Tomaszewski\_10 (E), Traaww1\_9 (E), Tuco\_11 (E), Ukulele\_10 (E), Wiggin\_12 (E), Willez\_10 (E), Xandras\_12 (E), Youngblood\_10 (E), xkcd\_11 (E),

Start 4:

- Found in 135 of 135 ( 100.0% ) of genes in pham
- Manual Annotations of this start: 2 of 125
- Called 1.5% of time when present
- Phage (with cluster) where this start called: Kostya\_11 (E), Pumpkin\_11 (E),

### Summary by clusters:

There is one cluster represented in this pham: E

Info for manual annotations of cluster E:

- Start number 1 was manually annotated 20 times for cluster E.
- Start number 2 was manually annotated 103 times for cluster E.
- Start number 4 was manually annotated 2 times for cluster E.

### Gene Information:

Gene: 244\_11 Start: 4167, Stop: 5723, Start Num: 2

Candidate Starts for 244\_11:

(Start: 1 @4164 has 20 MA's), (Start: 2 @4167 has 103 MA's), (3, 4206), (Start: 4 @4227 has 2 MA's), (5, 4257), (6, 4263), (7, 4269), (8, 4368), (9, 4377), (10, 4560), (11, 4566), (12, 4644), (13, 4659), (15, 4734), (17, 4794), (18, 4824), (19, 4923), (20, 4926), (21, 4929), (22, 4941), (23, 4962), (24, 4971), (25, 4977), (26, 5094), (27, 5118), (28, 5151), (29, 5193), (30, 5259), (31, 5304), (32, 5343), (33, 5370), (34, 5475), (35, 5544), (36, 5604), (37, 5679), (38, 5688),

Gene: ABCat\_10 Start: 5183, Stop: 6742, Start Num: 1

Candidate Starts for ABCat\_10:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Adnama\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for Adnama\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: Amao\_11 Start: 4193, Stop: 5749, Start Num: 2

Candidate Starts for Amao\_11:

(Start: 1 @4190 has 20 MA's), (Start: 2 @4193 has 103 MA's), (3, 4232), (Start: 4 @4253 has 2 MA's), (5, 4283), (6, 4289), (7, 4295), (8, 4394), (9, 4403), (10, 4586), (11, 4592), (12, 4670), (13, 4685), (15, 4760), (17, 4820), (18, 4850), (19, 4949), (20, 4952), (21, 4955), (22, 4967), (23, 4988), (24, 4997), (25, 5003), (26, 5120), (27, 5144), (28, 5177), (29, 5219), (30, 5285), (31, 5330), (32, 5369), (33, 5396), (34, 5501), (35, 5570), (36, 5630), (37, 5705), (38, 5714),

Gene: AmericanBeauty\_12 Start: 4396, Stop: 5952, Start Num: 2

Candidate Starts for AmericanBeauty\_12:

(Start: 1 @4393 has 20 MA's), (Start: 2 @4396 has 103 MA's), (3, 4435), (Start: 4 @4456 has 2 MA's), (5, 4486), (6, 4492), (7, 4498), (8, 4597), (9, 4606), (10, 4789), (11, 4795), (12, 4873), (13, 4888), (14, 4912), (15, 4963), (16, 4972), (17, 5023), (19, 5152), (20, 5155), (21, 5158), (22, 5170), (23, 5191), (24, 5200), (25, 5206), (26, 5323), (27, 5347), (28, 5380), (29, 5422), (30, 5488), (31, 5533), (32, 5572), (33, 5599), (34, 5704), (35, 5773), (36, 5833), (37, 5908), (38, 5917),

Gene: Argent26\_12 Start: 4396, Stop: 5955, Start Num: 1

Candidate Starts for Argent26\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: Asriel\_10 Start: 4058, Stop: 5614, Start Num: 2

Candidate Starts for Asriel\_10:

(Start: 1 @4055 has 20 MA's), (Start: 2 @4058 has 103 MA's), (3, 4097), (Start: 4 @4118 has 2 MA's), (5, 4148), (6, 4154), (7, 4160), (8, 4259), (9, 4268), (10, 4451), (11, 4457), (12, 4535), (13, 4550), (14, 4574), (15, 4625), (16, 4634), (17, 4685), (18, 4715), (19, 4814), (20, 4817), (21, 4820), (22, 4832), (23, 4853), (24, 4862), (25, 4868), (26, 4985), (27, 5009), (28, 5042), (29, 5084), (30, 5150), (31, 5195), (32, 5234), (33, 5261), (34, 5366), (35, 5435), (36, 5495), (37, 5570), (38, 5579),

Gene: BaboJay\_10 Start: 4717, Stop: 6273, Start Num: 2

Candidate Starts for BaboJay\_10:

(Start: 1 @4714 has 20 MA's), (Start: 2 @4717 has 103 MA's), (3, 4756), (Start: 4 @4777 has 2 MA's), (5, 4807), (6, 4813), (7, 4819), (8, 4918), (9, 4927), (10, 5110), (11, 5116), (12, 5194), (13, 5209), (15, 5284), (17, 5344), (18, 5374), (19, 5473), (20, 5476), (21, 5479), (22, 5491), (23, 5512), (24, 5521), (25, 5527), (26, 5644), (27, 5668), (28, 5701), (29, 5743), (30, 5809), (31, 5854), (32, 5893), (33, 5920), (34,

6025), (35, 6094), (36, 6154), (37, 6229), (38, 6238),

Gene: BadStone\_10 Start: 5183, Stop: 6742, Start Num: 1

Candidate Starts for BadStone\_10:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Balomoji\_10 Start: 4920, Stop: 6476, Start Num: 2

Candidate Starts for Balomoji\_10:

(Start: 1 @4917 has 20 MA's), (Start: 2 @4920 has 103 MA's), (3, 4959), (Start: 4 @4980 has 2 MA's), (5, 5010), (6, 5016), (7, 5022), (8, 5121), (9, 5130), (10, 5313), (11, 5319), (12, 5397), (13, 5412), (15, 5487), (17, 5547), (18, 5577), (19, 5676), (20, 5679), (21, 5682), (22, 5694), (23, 5715), (24, 5724), (25, 5730), (26, 5847), (27, 5871), (28, 5904), (29, 5946), (30, 6012), (31, 6057), (32, 6096), (33, 6123), (34, 6228), (35, 6297), (36, 6357), (37, 6432), (38, 6441),

Gene: Barbarian\_10 Start: 4055, Stop: 5614, Start Num: 1

Candidate Starts for Barbarian\_10:

(Start: 1 @4055 has 20 MA's), (Start: 2 @4058 has 103 MA's), (3, 4097), (Start: 4 @4118 has 2 MA's), (5, 4148), (6, 4154), (7, 4160), (8, 4259), (9, 4268), (10, 4451), (11, 4457), (12, 4535), (13, 4550), (14, 4574), (15, 4625), (16, 4634), (17, 4685), (18, 4715), (19, 4814), (20, 4817), (21, 4820), (22, 4832), (23, 4853), (24, 4862), (25, 4868), (26, 4985), (27, 5009), (28, 5042), (29, 5084), (30, 5150), (31, 5195), (32, 5234), (33, 5261), (34, 5366), (35, 5435), (36, 5495), (37, 5570), (38, 5579),

Gene: Bask21\_10 Start: 3853, Stop: 5409, Start Num: 2

Candidate Starts for Bask21\_10:

(Start: 1 @3850 has 20 MA's), (Start: 2 @3853 has 103 MA's), (3, 3892), (Start: 4 @3913 has 2 MA's), (5, 3943), (6, 3949), (7, 3955), (8, 4054), (9, 4063), (10, 4246), (11, 4252), (12, 4330), (13, 4345), (15, 4420), (17, 4480), (18, 4510), (19, 4609), (20, 4612), (21, 4615), (22, 4627), (23, 4648), (24, 4657), (25, 4663), (26, 4780), (27, 4804), (28, 4837), (29, 4879), (30, 4945), (31, 4990), (32, 5029), (33, 5056), (34, 5161), (35, 5230), (36, 5290), (37, 5365), (38, 5374),

Gene: Becksu\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for Becksu\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Bench\_12 Start: 4473, Stop: 6029, Start Num: 2

Candidate Starts for Bench\_12:

(Start: 1 @4470 has 20 MA's), (Start: 2 @4473 has 103 MA's), (3, 4512), (Start: 4 @4533 has 2 MA's), (5, 4563), (6, 4569), (7, 4575), (8, 4674), (9, 4683), (10, 4866), (11, 4872), (12, 4950), (13, 4965), (15, 5040), (17, 5100), (18, 5130), (19, 5229), (20, 5232), (21, 5235), (22, 5247), (23, 5268), (24, 5277), (25, 5283), (26, 5400), (27, 5424), (28, 5457), (29, 5499), (30, 5565), (31, 5610), (32, 5649), (33, 5676), (34, 5781), (35, 5850), (36, 5910), (37, 5985), (38, 5994),

Gene: BigBubba\_10 Start: 3853, Stop: 5409, Start Num: 2

Candidate Starts for BigBubba\_10:

(Start: 1 @3850 has 20 MA's), (Start: 2 @3853 has 103 MA's), (3, 3892), (Start: 4 @3913 has 2 MA's), (5, 3943), (6, 3949), (7, 3955), (8, 4054), (9, 4063), (10, 4246), (11, 4252), (12, 4330), (13, 4345), (15, 4420), (17, 4480), (18, 4510), (19, 4609), (20, 4612), (21, 4615), (22, 4627), (23, 4648), (24, 4657), (25, 4663), (26, 4780), (27, 4804), (28, 4837), (29, 4879), (30, 4945), (31, 4990), (32, 5029), (33, 5056), (34, 5161), (35, 5230), (36, 5290), (37, 5365), (38, 5374),

Gene: BilboSwaggins\_11 Start: 5183, Stop: 6742, Start Num: 1

Candidate Starts for BilboSwaggins\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Bruin\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for Bruin\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Buck\_10 Start: 4852, Stop: 6408, Start Num: 2

Candidate Starts for Buck\_10:

(Start: 1 @4849 has 20 MA's), (Start: 2 @4852 has 103 MA's), (3, 4891), (Start: 4 @4912 has 2 MA's), (5, 4942), (6, 4948), (7, 4954), (8, 5053), (9, 5062), (10, 5245), (11, 5251), (12, 5329), (13, 5344), (15, 5419), (17, 5479), (18, 5509), (19, 5608), (20, 5611), (21, 5614), (22, 5626), (23, 5647), (24, 5656), (25, 5662), (26, 5779), (27, 5803), (28, 5836), (29, 5878), (30, 5944), (31, 5989), (32, 6028), (33, 6055), (34, 6160), (35, 6229), (36, 6289), (37, 6364), (38, 6373),

Gene: BugsBunny\_8 Start: 4353, Stop: 5909, Start Num: 2

Candidate Starts for BugsBunny\_8:

(Start: 1 @4350 has 20 MA's), (Start: 2 @4353 has 103 MA's), (3, 4392), (Start: 4 @4413 has 2 MA's), (5, 4443), (6, 4449), (7, 4455), (8, 4554), (9, 4563), (10, 4746), (11, 4752), (12, 4830), (13, 4845), (15, 4920), (17, 4980), (18, 5010), (19, 5109), (20, 5112), (21, 5115), (22, 5127), (23, 5148), (24, 5157), (25, 5163), (26, 5280), (27, 5304), (28, 5337), (29, 5379), (30, 5445), (31, 5490), (32, 5529), (33, 5556), (34, 5661), (35, 5730), (36, 5790), (37, 5865), (38, 5874),

Gene: Cactus\_12 Start: 4396, Stop: 5955, Start Num: 1

Candidate Starts for Cactus\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (18, 5056), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: ChosenOne\_9 Start: 3619, Stop: 5175, Start Num: 2

Candidate Starts for ChosenOne\_9:

(Start: 1 @3616 has 20 MA's), (Start: 2 @3619 has 103 MA's), (3, 3658), (Start: 4 @3679 has 2 MA's), (5, 3709), (6, 3715), (7, 3721), (8, 3820), (9, 3829), (10, 4012), (11, 4018), (12, 4096), (13, 4111), (15, 4186), (17, 4246), (19, 4375), (20, 4378), (21, 4381), (22, 4393), (23, 4414), (24, 4423), (25, 4429), (26, 4546), (27, 4570), (28, 4603), (29, 4645), (30, 4711), (31, 4756), (32, 4795), (33, 4822), (34, 4927), (35, 4996), (36, 5056), (37, 5131), (38, 5140),

Gene: ChotaBhai\_10 Start: 3853, Stop: 5409, Start Num: 2

Candidate Starts for ChotaBhai\_10:

(Start: 1 @3850 has 20 MA's), (Start: 2 @3853 has 103 MA's), (3, 3892), (Start: 4 @3913 has 2 MA's), (5, 3943), (6, 3949), (7, 3955), (8, 4054), (9, 4063), (10, 4246), (11, 4252), (12, 4330), (13, 4345), (15, 4420), (17, 4480), (18, 4510), (19, 4609), (20, 4612), (21, 4615), (22, 4627), (23, 4648), (24, 4657), (25, 4663), (26, 4780), (27, 4804), (28, 4837), (29, 4879), (30, 4945), (31, 4990), (32, 5029), (33, 5056), (34, 5161), (35, 5230), (36, 5290), (37, 5365), (38, 5374),

Gene: Cjw1\_10 Start: 5169, Stop: 6725, Start Num: 2

Candidate Starts for Cjw1\_10:

(Start: 1 @5166 has 20 MA's), (Start: 2 @5169 has 103 MA's), (3, 5208), (Start: 4 @5229 has 2 MA's), (5, 5259), (6, 5265), (7, 5271), (8, 5370), (9, 5379), (10, 5562), (11, 5568), (12, 5646), (13, 5661), (14, 5685), (15, 5736), (16, 5745), (17, 5796), (19, 5925), (20, 5928), (21, 5931), (22, 5943), (23, 5964), (24, 5973), (25, 5979), (26, 6096), (27, 6120), (28, 6153), (29, 6195), (30, 6261), (31, 6306), (32, 6345), (33, 6372), (34, 6477), (35, 6546), (36, 6606), (37, 6681), (38, 6690),

Gene: Command613\_12 Start: 5257, Stop: 6813, Start Num: 2

Candidate Starts for Command613\_12:

(Start: 1 @5254 has 20 MA's), (Start: 2 @5257 has 103 MA's), (3, 5296), (Start: 4 @5317 has 2 MA's), (5, 5347), (6, 5353), (7, 5359), (8, 5458), (9, 5467), (10, 5650), (11, 5656), (12, 5734), (13, 5749), (15, 5824), (17, 5884), (18, 5914), (19, 6013), (20, 6016), (21, 6019), (22, 6031), (23, 6052), (24, 6061), (25, 6067), (26, 6184), (27, 6208), (28, 6241), (29, 6283), (30, 6349), (31, 6394), (32, 6433), (33, 6460), (34, 6565), (35, 6634), (36, 6694), (37, 6769), (38, 6778),

Gene: Contagion\_10 Start: 4784, Stop: 6343, Start Num: 1

Candidate Starts for Contagion\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Cookies\_11 Start: 5059, Stop: 6615, Start Num: 2

Candidate Starts for Cookies\_11:

(Start: 1 @5056 has 20 MA's), (Start: 2 @5059 has 103 MA's), (3, 5098), (Start: 4 @5119 has 2 MA's), (5, 5149), (6, 5155), (7, 5161), (8, 5260), (9, 5269), (10, 5452), (11, 5458), (12, 5536), (13, 5551), (15, 5626), (17, 5686), (18, 5716), (19, 5815), (20, 5818), (21, 5821), (22, 5833), (23, 5854), (24, 5863), (25, 5869), (26, 5986), (27, 6010), (28, 6043), (29, 6085), (30, 6151), (31, 6196), (32, 6235), (33, 6262), (34, 6367), (35, 6436), (36, 6496), (37, 6571), (38, 6580),

Gene: CrystalP\_11 Start: 5186, Stop: 6742, Start Num: 2

Candidate Starts for CrystalP\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Czyszczon1\_11 Start: 4355, Stop: 5911, Start Num: 2

Candidate Starts for Czyszczon1\_11:

(Start: 1 @4352 has 20 MA's), (Start: 2 @4355 has 103 MA's), (3, 4394), (Start: 4 @4415 has 2 MA's), (5, 4445), (6, 4451), (7, 4457), (8, 4556), (9, 4565), (10, 4748), (11, 4754), (12, 4832), (13, 4847), (15,



4922), (17, 4982), (18, 5012), (19, 5111), (20, 5114), (21, 5117), (22, 5129), (23, 5150), (24, 5159), (25, 5165), (26, 5282), (27, 5306), (28, 5339), (29, 5381), (30, 5447), (31, 5492), (32, 5531), (33, 5558), (34, 5663), (35, 5732), (36, 5792), (37, 5867), (38, 5876),

Gene: Daikon\_9 Start: 4917, Stop: 6476, Start Num: 1

Candidate Starts for Daikon\_9:

(Start: 1 @4917 has 20 MA's), (Start: 2 @4920 has 103 MA's), (3, 4959), (Start: 4 @4980 has 2 MA's), (5, 5010), (6, 5016), (7, 5022), (8, 5121), (9, 5130), (10, 5313), (11, 5319), (12, 5397), (13, 5412), (15, 5487), (17, 5547), (18, 5577), (19, 5676), (20, 5679), (21, 5682), (22, 5694), (23, 5715), (24, 5724), (25, 5730), (26, 5847), (27, 5871), (28, 5904), (29, 5946), (30, 6012), (31, 6057), (32, 6096), (33, 6123), (34, 6228), (35, 6297), (36, 6357), (37, 6432), (38, 6441),

Gene: DoctorDiddles\_11 Start: 4352, Stop: 5908, Start Num: 2

Candidate Starts for DoctorDiddles\_11:

(Start: 1 @4349 has 20 MA's), (Start: 2 @4352 has 103 MA's), (3, 4391), (Start: 4 @4412 has 2 MA's), (5, 4442), (6, 4448), (7, 4454), (8, 4553), (9, 4562), (10, 4745), (11, 4751), (12, 4829), (13, 4844), (14, 4868), (15, 4919), (16, 4928), (17, 4979), (19, 5108), (20, 5111), (21, 5114), (22, 5126), (24, 5156), (25, 5162), (26, 5279), (27, 5303), (28, 5336), (29, 5378), (30, 5444), (31, 5489), (32, 5528), (33, 5555), (34, 5660), (35, 5729), (36, 5789), (37, 5864), (38, 5873),

Gene: DrDrey\_11 Start: 5186, Stop: 6742, Start Num: 2

Candidate Starts for DrDrey\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Dumbo\_10 Start: 4167, Stop: 5723, Start Num: 2

Candidate Starts for Dumbo\_10:

(Start: 1 @4164 has 20 MA's), (Start: 2 @4167 has 103 MA's), (3, 4206), (Start: 4 @4227 has 2 MA's), (5, 4257), (6, 4263), (7, 4269), (8, 4368), (9, 4377), (10, 4560), (11, 4566), (12, 4644), (13, 4659), (15, 4734), (17, 4794), (18, 4824), (19, 4923), (20, 4926), (21, 4929), (22, 4941), (23, 4962), (24, 4971), (25, 4977), (26, 5094), (27, 5118), (28, 5151), (29, 5193), (30, 5259), (31, 5304), (32, 5343), (33, 5370), (34, 5475), (35, 5544), (36, 5604), (37, 5679), (38, 5688),

Gene: Dusk\_10 Start: 4843, Stop: 6402, Start Num: 1

Candidate Starts for Dusk\_10:

(Start: 1 @4843 has 20 MA's), (Start: 2 @4846 has 103 MA's), (3, 4885), (Start: 4 @4906 has 2 MA's), (5, 4936), (6, 4942), (7, 4948), (8, 5047), (9, 5056), (10, 5239), (11, 5245), (12, 5323), (13, 5338), (15, 5413), (17, 5473), (18, 5503), (19, 5602), (20, 5605), (21, 5608), (22, 5620), (23, 5641), (24, 5650), (25, 5656), (26, 5773), (27, 5797), (28, 5830), (29, 5872), (30, 5938), (31, 5983), (32, 6022), (33, 6049), (34, 6154), (35, 6223), (36, 6283), (37, 6358), (38, 6367),

Gene: Easy2Say\_11 Start: 5142, Stop: 6698, Start Num: 2

Candidate Starts for Easy2Say\_11:

(Start: 1 @5139 has 20 MA's), (Start: 2 @5142 has 103 MA's), (3, 5181), (Start: 4 @5202 has 2 MA's), (5, 5232), (6, 5238), (7, 5244), (8, 5343), (9, 5352), (10, 5535), (11, 5541), (12, 5619), (13, 5634), (15, 5709), (17, 5769), (19, 5898), (20, 5901), (21, 5904), (22, 5916), (23, 5937), (24, 5946), (25, 5952), (26, 6069), (27, 6093), (28, 6126), (29, 6168), (30, 6234), (31, 6279), (32, 6318), (33, 6345), (34, 6450), (35, 6519), (36, 6579), (37, 6654), (38, 6663),

Gene: Elite2014\_9 Start: 3619, Stop: 5175, Start Num: 2

Candidate Starts for Elite2014\_9:

(Start: 1 @3616 has 20 MA's), (Start: 2 @3619 has 103 MA's), (3, 3658), (Start: 4 @3679 has 2 MA's), (5, 3709), (6, 3715), (7, 3721), (8, 3820), (9, 3829), (10, 4012), (11, 4018), (12, 4096), (13, 4111), (15, 4186), (17, 4246), (19, 4375), (20, 4378), (21, 4381), (22, 4393), (23, 4414), (24, 4423), (25, 4429), (26, 4546), (27, 4570), (28, 4603), (29, 4645), (30, 4711), (31, 4756), (32, 4795), (33, 4822), (34, 4927), (35, 4996), (36, 5056), (37, 5131), (38, 5140),

Gene: Elph10\_11 Start: 4170, Stop: 5726, Start Num: 2

Candidate Starts for Elph10\_11:

(Start: 1 @4167 has 20 MA's), (Start: 2 @4170 has 103 MA's), (3, 4209), (Start: 4 @4230 has 2 MA's), (5, 4260), (6, 4266), (7, 4272), (8, 4371), (9, 4380), (10, 4563), (11, 4569), (12, 4647), (13, 4662), (14, 4686), (15, 4737), (16, 4746), (17, 4797), (19, 4926), (20, 4929), (21, 4932), (22, 4944), (23, 4965), (24, 4974), (25, 4980), (26, 5097), (27, 5121), (28, 5154), (29, 5196), (30, 5262), (31, 5307), (32, 5346), (33, 5373), (34, 5478), (35, 5547), (36, 5607), (37, 5682), (38, 5691),

Gene: Emmina\_10 Start: 3721, Stop: 5280, Start Num: 1

Candidate Starts for Emmina\_10:

(Start: 1 @3721 has 20 MA's), (Start: 2 @3724 has 103 MA's), (3, 3763), (Start: 4 @3784 has 2 MA's), (5, 3814), (6, 3820), (7, 3826), (8, 3925), (9, 3934), (10, 4117), (11, 4123), (12, 4201), (13, 4216), (15, 4291), (17, 4351), (18, 4381), (19, 4480), (20, 4483), (21, 4486), (22, 4498), (23, 4519), (24, 4528), (25, 4534), (26, 4651), (27, 4675), (28, 4708), (29, 4750), (30, 4816), (31, 4861), (32, 4900), (33, 4927), (34, 5032), (35, 5101), (36, 5161), (37, 5236), (38, 5245),

Gene: Eureka\_10 Start: 4890, Stop: 6446, Start Num: 2

Candidate Starts for Eureka\_10:

(Start: 1 @4887 has 20 MA's), (Start: 2 @4890 has 103 MA's), (3, 4929), (Start: 4 @4950 has 2 MA's), (5, 4980), (6, 4986), (7, 4992), (8, 5091), (9, 5100), (10, 5283), (11, 5289), (12, 5367), (13, 5382), (14, 5406), (15, 5457), (16, 5466), (17, 5517), (19, 5646), (20, 5649), (21, 5652), (22, 5664), (23, 5685), (24, 5694), (25, 5700), (26, 5817), (27, 5841), (28, 5874), (29, 5916), (30, 5982), (31, 6027), (32, 6066), (33, 6093), (34, 6198), (35, 6267), (36, 6327), (37, 6402), (38, 6411),

Gene: FairyPath\_11 Start: 5186, Stop: 6742, Start Num: 2

Candidate Starts for FairyPath\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Filch\_11 Start: 4164, Stop: 5720, Start Num: 2

Candidate Starts for Filch\_11:

(Start: 1 @4161 has 20 MA's), (Start: 2 @4164 has 103 MA's), (3, 4203), (Start: 4 @4224 has 2 MA's), (5, 4254), (6, 4260), (7, 4266), (8, 4365), (9, 4374), (10, 4557), (11, 4563), (12, 4641), (13, 4656), (14, 4680), (15, 4731), (16, 4740), (17, 4791), (19, 4920), (20, 4923), (21, 4926), (22, 4938), (23, 4959), (24, 4968), (25, 4974), (26, 5091), (27, 5115), (28, 5148), (29, 5190), (30, 5256), (31, 5301), (32, 5340), (33, 5367), (34, 5472), (35, 5541), (36, 5601), (37, 5676), (38, 5685),

Gene: FireRed\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for FireRed\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (14, 5303), (15, 5354), (16, 5363), (17, 5414), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33,

5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Flypotenuse\_9 Start: 4799, Stop: 6358, Start Num: 1

Candidate Starts for Flypotenuse\_9:

(Start: 1 @4799 has 20 MA's), (Start: 2 @4802 has 103 MA's), (3, 4841), (Start: 4 @4862 has 2 MA's), (5, 4892), (6, 4898), (7, 4904), (8, 5003), (9, 5012), (10, 5195), (11, 5201), (12, 5279), (13, 5294), (15, 5369), (17, 5429), (18, 5459), (19, 5558), (20, 5561), (21, 5564), (22, 5576), (23, 5597), (24, 5606), (25, 5612), (26, 5729), (27, 5753), (28, 5786), (29, 5828), (30, 5894), (31, 5939), (32, 5978), (33, 6005), (34, 6110), (35, 6179), (36, 6239), (37, 6314), (38, 6323),

Gene: FoghornLeghorn\_10 Start: 4784, Stop: 6340, Start Num: 2

Candidate Starts for FoghornLeghorn\_10:

(Start: 1 @4781 has 20 MA's), (Start: 2 @4784 has 103 MA's), (3, 4823), (Start: 4 @4844 has 2 MA's), (5, 4874), (6, 4880), (7, 4886), (8, 4985), (9, 4994), (10, 5177), (11, 5183), (12, 5261), (13, 5276), (15, 5351), (17, 5411), (18, 5441), (19, 5540), (20, 5543), (21, 5546), (22, 5558), (23, 5579), (24, 5588), (25, 5594), (26, 5711), (27, 5735), (28, 5768), (29, 5810), (30, 5876), (31, 5921), (32, 5960), (33, 5987), (34, 6092), (35, 6161), (36, 6221), (37, 6296), (38, 6305),

Gene: Gage\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for Gage\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: Gator\_9 Start: 4802, Stop: 6358, Start Num: 2

Candidate Starts for Gator\_9:

(Start: 1 @4799 has 20 MA's), (Start: 2 @4802 has 103 MA's), (3, 4841), (Start: 4 @4862 has 2 MA's), (5, 4892), (6, 4898), (7, 4904), (8, 5003), (9, 5012), (10, 5195), (11, 5201), (12, 5279), (13, 5294), (15, 5369), (17, 5429), (18, 5459), (19, 5558), (20, 5561), (21, 5564), (22, 5576), (23, 5597), (24, 5606), (25, 5612), (26, 5729), (27, 5753), (28, 5786), (29, 5828), (30, 5894), (31, 5939), (32, 5978), (33, 6005), (34, 6110), (35, 6179), (36, 6239), (37, 6314), (38, 6323),

Gene: Gemini\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for Gemini\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: Glexan\_9 Start: 4802, Stop: 6358, Start Num: 2

Candidate Starts for Glexan\_9:

(Start: 1 @4799 has 20 MA's), (Start: 2 @4802 has 103 MA's), (3, 4841), (Start: 4 @4862 has 2 MA's), (5, 4892), (6, 4898), (7, 4904), (8, 5003), (9, 5012), (10, 5195), (11, 5201), (12, 5279), (13, 5294), (15, 5369), (17, 5429), (18, 5459), (19, 5558), (20, 5561), (21, 5564), (22, 5576), (23, 5597), (24, 5606), (25, 5612), (26, 5729), (27, 5753), (28, 5786), (29, 5828), (30, 5894), (31, 5939), (32, 5978), (33, 6005), (34, 6110), (35, 6179), (36, 6239), (37, 6314), (38, 6323),

Gene: Goku\_11 Start: 4890, Stop: 6446, Start Num: 2

Candidate Starts for Goku\_11:

(Start: 1 @4887 has 20 MA's), (Start: 2 @4890 has 103 MA's), (3, 4929), (Start: 4 @4950 has 2 MA's), (5, 4980), (6, 4986), (7, 4992), (8, 5091), (9, 5100), (10, 5283), (11, 5289), (12, 5367), (13, 5382), (14, 5406), (15, 5457), (16, 5466), (17, 5517), (19, 5646), (20, 5649), (21, 5652), (22, 5664), (23, 5685), (24, 5694), (25, 5700), (26, 5817), (27, 5841), (28, 5874), (29, 5916), (30, 5982), (31, 6027), (32, 6066), (33, 6093), (34, 6198), (35, 6267), (36, 6327), (37, 6402), (38, 6411),

Gene: GoldenSpark\_12 Start: 4396, Stop: 5955, Start Num: 1

Candidate Starts for GoldenSpark\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (15, 4966), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: Goldilocks\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for Goldilocks\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: GooberAzure\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for GooberAzure\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: HanKaySha\_11 Start: 4355, Stop: 5911, Start Num: 2

Candidate Starts for HanKaySha\_11:

(Start: 1 @4352 has 20 MA's), (Start: 2 @4355 has 103 MA's), (3, 4394), (Start: 4 @4415 has 2 MA's), (5, 4445), (6, 4451), (7, 4457), (8, 4556), (9, 4565), (10, 4748), (11, 4754), (12, 4832), (13, 4847), (15, 4922), (17, 4982), (18, 5012), (19, 5111), (20, 5114), (21, 5117), (22, 5129), (23, 5150), (24, 5159), (25, 5165), (26, 5282), (27, 5306), (28, 5339), (29, 5381), (30, 5447), (31, 5492), (32, 5531), (33, 5558), (34, 5663), (35, 5732), (36, 5792), (37, 5867), (38, 5876),

Gene: Harella\_9 Start: 4799, Stop: 6358, Start Num: 1

Candidate Starts for Harella\_9:

(Start: 1 @4799 has 20 MA's), (Start: 2 @4802 has 103 MA's), (3, 4841), (Start: 4 @4862 has 2 MA's), (5, 4892), (6, 4898), (7, 4904), (8, 5003), (9, 5012), (10, 5195), (11, 5201), (12, 5279), (13, 5294), (15, 5369), (17, 5429), (18, 5459), (19, 5558), (20, 5561), (21, 5564), (22, 5576), (23, 5597), (24, 5606), (25, 5612), (26, 5729), (27, 5753), (28, 5786), (29, 5828), (30, 5894), (31, 5939), (32, 5978), (33, 6005), (34, 6110), (35, 6179), (36, 6239), (37, 6314), (38, 6323),

Gene: Henry\_11 Start: 5186, Stop: 6742, Start Num: 2

Candidate Starts for Henry\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Highbury\_11 Start: 4364, Stop: 5920, Start Num: 2

Candidate Starts for Highbury\_11:

(Start: 1 @4361 has 20 MA's), (Start: 2 @4364 has 103 MA's), (3, 4403), (Start: 4 @4424 has 2 MA's), (5, 4454), (6, 4460), (7, 4466), (8, 4565), (9, 4574), (10, 4757), (11, 4763), (12, 4841), (13, 4856), (15, 4931), (17, 4991), (18, 5021), (19, 5120), (20, 5123), (21, 5126), (22, 5138), (23, 5159), (24, 5168), (25, 5174), (26, 5291), (27, 5315), (28, 5348), (29, 5390), (30, 5456), (31, 5501), (32, 5540), (33, 5567), (34, 5672), (35, 5741), (36, 5801), (37, 5876), (38, 5885),

Gene: Holt\_12 Start: 4470, Stop: 6026, Start Num: 2

Candidate Starts for Holt\_12:

(Start: 1 @4467 has 20 MA's), (Start: 2 @4470 has 103 MA's), (3, 4509), (Start: 4 @4530 has 2 MA's), (5, 4560), (6, 4566), (7, 4572), (8, 4671), (9, 4680), (10, 4863), (11, 4869), (12, 4947), (13, 4962), (14, 4986), (15, 5037), (16, 5046), (17, 5097), (19, 5226), (20, 5229), (21, 5232), (22, 5244), (24, 5274), (25, 5280), (26, 5397), (27, 5421), (28, 5454), (29, 5496), (30, 5562), (31, 5607), (32, 5646), (33, 5673), (34, 5778), (35, 5847), (36, 5907), (37, 5982), (38, 5991),

Gene: Hoonter\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for Hoonter\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (15, 4966), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: Hokey\_11 Start: 4164, Stop: 5720, Start Num: 2

Candidate Starts for Hokey\_11:

(Start: 1 @4161 has 20 MA's), (Start: 2 @4164 has 103 MA's), (3, 4203), (Start: 4 @4224 has 2 MA's), (5, 4254), (6, 4260), (7, 4266), (8, 4365), (9, 4374), (10, 4557), (11, 4563), (12, 4641), (13, 4656), (15, 4731), (17, 4791), (18, 4821), (19, 4920), (20, 4923), (21, 4926), (22, 4938), (23, 4959), (24, 4968), (25, 4974), (26, 5091), (27, 5115), (28, 5148), (29, 5190), (30, 5256), (31, 5301), (32, 5340), (33, 5367), (34, 5472), (35, 5541), (36, 5601), (37, 5676), (38, 5685),

Gene: HufflyPuff\_9 Start: 4740, Stop: 6299, Start Num: 1

Candidate Starts for HufflyPuff\_9:

(Start: 1 @4740 has 20 MA's), (Start: 2 @4743 has 103 MA's), (3, 4782), (Start: 4 @4803 has 2 MA's), (5, 4833), (6, 4839), (7, 4845), (8, 4944), (9, 4953), (10, 5136), (11, 5142), (12, 5220), (13, 5235), (15, 5310), (17, 5370), (18, 5400), (19, 5499), (20, 5502), (21, 5505), (22, 5517), (23, 5538), (24, 5547), (25, 5553), (26, 5670), (27, 5694), (28, 5727), (29, 5769), (30, 5835), (31, 5880), (32, 5919), (33, 5946), (34, 6051), (35, 6120), (36, 6180), (37, 6255), (38, 6264),

Gene: IHOP\_10 Start: 4846, Stop: 6402, Start Num: 2

Candidate Starts for IHOP\_10:

(Start: 1 @4843 has 20 MA's), (Start: 2 @4846 has 103 MA's), (3, 4885), (Start: 4 @4906 has 2 MA's), (5, 4936), (6, 4942), (7, 4948), (8, 5047), (9, 5056), (10, 5239), (11, 5245), (12, 5323), (13, 5338), (15, 5413), (17, 5473), (18, 5503), (19, 5602), (20, 5605), (21, 5608), (22, 5620), (23, 5641), (24, 5650), (25, 5656), (26, 5773), (27, 5797), (28, 5830), (29, 5872), (30, 5938), (31, 5983), (32, 6022), (33, 6049), (34, 6154), (35, 6223), (36, 6283), (37, 6358), (38, 6367),

Gene: Icee\_10 Start: 4846, Stop: 6402, Start Num: 2

Candidate Starts for Icee\_10:

(Start: 1 @4843 has 20 MA's), (Start: 2 @4846 has 103 MA's), (3, 4885), (Start: 4 @4906 has 2 MA's), (5, 4936), (6, 4942), (7, 4948), (8, 5047), (9, 5056), (10, 5239), (11, 5245), (12, 5323), (13, 5338), (14,

5362), (15, 5413), (16, 5422), (17, 5473), (18, 5503), (19, 5602), (20, 5605), (21, 5608), (22, 5620), (23, 5641), (24, 5650), (25, 5656), (26, 5773), (27, 5797), (28, 5830), (29, 5872), (30, 5938), (31, 5983), (32, 6022), (33, 6049), (34, 6154), (35, 6223), (36, 6283), (37, 6358), (38, 6367),

Gene: Inca\_10 Start: 3866, Stop: 5422, Start Num: 2

Candidate Starts for Inca\_10:

(Start: 1 @3863 has 20 MA's), (Start: 2 @3866 has 103 MA's), (3, 3905), (Start: 4 @3926 has 2 MA's), (5, 3956), (6, 3962), (7, 3968), (8, 4067), (9, 4076), (10, 4259), (11, 4265), (12, 4343), (13, 4358), (15, 4433), (17, 4493), (18, 4523), (19, 4622), (20, 4625), (21, 4628), (22, 4640), (23, 4661), (24, 4670), (25, 4676), (26, 4793), (27, 4817), (28, 4850), (29, 4892), (30, 4958), (31, 5003), (32, 5042), (33, 5069), (34, 5174), (35, 5243), (36, 5303), (37, 5378), (38, 5387),

Gene: JeTaime\_12 Start: 5204, Stop: 6760, Start Num: 2

Candidate Starts for JeTaime\_12:

(Start: 1 @5201 has 20 MA's), (Start: 2 @5204 has 103 MA's), (3, 5243), (Start: 4 @5264 has 2 MA's), (5, 5294), (6, 5300), (7, 5306), (8, 5405), (9, 5414), (10, 5597), (11, 5603), (12, 5681), (13, 5696), (14, 5720), (15, 5771), (16, 5780), (17, 5831), (19, 5960), (20, 5963), (21, 5966), (22, 5978), (23, 5999), (24, 6008), (25, 6014), (26, 6131), (27, 6155), (28, 6188), (29, 6230), (30, 6296), (31, 6341), (32, 6380), (33, 6407), (34, 6512), (35, 6581), (36, 6641), (37, 6716), (38, 6725),

Gene: Kanye\_12 Start: 5392, Stop: 6948, Start Num: 2

Candidate Starts for Kanye\_12:

(Start: 1 @5389 has 20 MA's), (Start: 2 @5392 has 103 MA's), (3, 5431), (Start: 4 @5452 has 2 MA's), (5, 5482), (6, 5488), (7, 5494), (8, 5593), (9, 5602), (10, 5785), (11, 5791), (12, 5869), (13, 5884), (15, 5959), (17, 6019), (18, 6049), (19, 6148), (20, 6151), (21, 6154), (22, 6166), (23, 6187), (24, 6196), (25, 6202), (26, 6319), (27, 6343), (28, 6376), (29, 6418), (30, 6484), (31, 6529), (32, 6568), (33, 6595), (34, 6700), (35, 6769), (36, 6829), (37, 6904), (38, 6913),

Gene: Kimchi\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for Kimchi\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: Kostya\_11 Start: 5246, Stop: 6742, Start Num: 4

Candidate Starts for Kostya\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Lilac\_12 Start: 4191, Stop: 5747, Start Num: 2

Candidate Starts for Lilac\_12:

(Start: 1 @4188 has 20 MA's), (Start: 2 @4191 has 103 MA's), (3, 4230), (Start: 4 @4251 has 2 MA's), (5, 4281), (6, 4287), (7, 4293), (8, 4392), (9, 4401), (10, 4584), (11, 4590), (12, 4668), (13, 4683), (14, 4707), (15, 4758), (16, 4767), (17, 4818), (19, 4947), (20, 4950), (21, 4953), (22, 4965), (23, 4986), (24, 4995), (25, 5001), (26, 5118), (27, 5142), (28, 5175), (29, 5217), (30, 5283), (31, 5328), (32, 5367), (33, 5394), (34, 5499), (35, 5568), (36, 5628), (37, 5703), (38, 5712),

Gene: Lilizi\_12 Start: 4402, Stop: 5958, Start Num: 2

Candidate Starts for Lilizi\_12:

(Start: 1 @4399 has 20 MA's), (Start: 2 @4402 has 103 MA's), (3, 4441), (Start: 4 @4462 has 2 MA's), (5, 4492), (6, 4498), (7, 4504), (8, 4603), (9, 4612), (10, 4795), (11, 4801), (12, 4879), (13, 4894), (14, 4918), (15, 4969), (16, 4978), (17, 5029), (19, 5158), (20, 5161), (21, 5164), (22, 5176), (23, 5197), (24, 5206), (25, 5212), (26, 5329), (27, 5353), (28, 5386), (29, 5428), (30, 5494), (31, 5539), (32, 5578), (33, 5605), (34, 5710), (35, 5779), (36, 5839), (37, 5914), (38, 5923),

Gene: Lilpickle\_9 Start: 3616, Stop: 5175, Start Num: 1

Candidate Starts for Lilpickle\_9:

(Start: 1 @3616 has 20 MA's), (Start: 2 @3619 has 103 MA's), (3, 3658), (Start: 4 @3679 has 2 MA's), (5, 3709), (6, 3715), (7, 3721), (8, 3820), (9, 3829), (10, 4012), (11, 4018), (12, 4096), (13, 4111), (15, 4186), (17, 4246), (19, 4375), (20, 4378), (21, 4381), (22, 4393), (23, 4414), (24, 4423), (25, 4429), (26, 4546), (27, 4570), (28, 4603), (29, 4645), (30, 4711), (31, 4756), (32, 4795), (33, 4822), (34, 4927), (35, 4996), (36, 5056), (37, 5131), (38, 5140),

Gene: MISSy\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for MISSy\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (16, 5363), (17, 5414), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: MPhalcon\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for MPhalcon\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (14, 5303), (15, 5354), (16, 5363), (17, 5414), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: MadamMonkfish\_10 Start: 4031, Stop: 5587, Start Num: 2

Candidate Starts for MadamMonkfish\_10:

(Start: 1 @4028 has 20 MA's), (Start: 2 @4031 has 103 MA's), (3, 4070), (Start: 4 @4091 has 2 MA's), (5, 4121), (6, 4127), (7, 4133), (8, 4232), (9, 4241), (10, 4424), (11, 4430), (12, 4508), (13, 4523), (15, 4598), (17, 4658), (18, 4688), (19, 4787), (20, 4790), (21, 4793), (22, 4805), (23, 4826), (24, 4835), (25, 4841), (26, 4958), (27, 4982), (28, 5015), (29, 5057), (30, 5123), (31, 5168), (32, 5207), (33, 5234), (34, 5339), (35, 5408), (36, 5468), (37, 5543), (38, 5552),

Gene: Manda\_10 Start: 4679, Stop: 6238, Start Num: 1

Candidate Starts for Manda\_10:

(Start: 1 @4679 has 20 MA's), (Start: 2 @4682 has 103 MA's), (3, 4721), (Start: 4 @4742 has 2 MA's), (5, 4772), (6, 4778), (7, 4784), (8, 4883), (9, 4892), (10, 5075), (11, 5081), (12, 5159), (13, 5174), (15, 5249), (17, 5309), (18, 5339), (19, 5438), (20, 5441), (21, 5444), (22, 5456), (23, 5477), (24, 5486), (25, 5492), (26, 5609), (27, 5633), (28, 5666), (29, 5708), (30, 5774), (31, 5819), (32, 5858), (33, 5885), (34, 5990), (35, 6059), (36, 6119), (37, 6194), (38, 6203),

Gene: Marshmallow\_11 Start: 5186, Stop: 6742, Start Num: 2

Candidate Starts for Marshmallow\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34,

6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Maxxinista\_11 Start: 4170, Stop: 5726, Start Num: 2

Candidate Starts for Maxxinista\_11:

(Start: 1 @4167 has 20 MA's), (Start: 2 @4170 has 103 MA's), (3, 4209), (Start: 4 @4230 has 2 MA's), (5, 4260), (6, 4266), (7, 4272), (8, 4371), (9, 4380), (10, 4563), (11, 4569), (12, 4647), (13, 4662), (14, 4686), (15, 4737), (16, 4746), (17, 4797), (19, 4926), (20, 4929), (21, 4932), (22, 4944), (23, 4965), (24, 4974), (25, 4980), (26, 5097), (27, 5121), (28, 5154), (29, 5196), (30, 5262), (31, 5307), (32, 5346), (33, 5373), (34, 5478), (35, 5547), (36, 5607), (37, 5682), (38, 5691),

Gene: Mindy\_11 Start: 5057, Stop: 6613, Start Num: 2

Candidate Starts for Mindy\_11:

(Start: 1 @5054 has 20 MA's), (Start: 2 @5057 has 103 MA's), (3, 5096), (Start: 4 @5117 has 2 MA's), (5, 5147), (6, 5153), (7, 5159), (8, 5258), (9, 5267), (10, 5450), (11, 5456), (12, 5534), (13, 5549), (15, 5624), (17, 5684), (18, 5714), (19, 5813), (20, 5816), (21, 5819), (22, 5831), (23, 5852), (24, 5861), (25, 5867), (26, 5984), (27, 6008), (28, 6041), (29, 6083), (30, 6149), (31, 6194), (32, 6233), (33, 6260), (34, 6365), (35, 6434), (36, 6494), (37, 6569), (38, 6578),

Gene: Miniwave\_11 Start: 5186, Stop: 6742, Start Num: 2

Candidate Starts for Miniwave\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Misfit\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for Misfit\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Moldemort\_11 Start: 4355, Stop: 5911, Start Num: 2

Candidate Starts for Moldemort\_11:

(Start: 1 @4352 has 20 MA's), (Start: 2 @4355 has 103 MA's), (3, 4394), (Start: 4 @4415 has 2 MA's), (5, 4445), (6, 4451), (7, 4457), (8, 4556), (9, 4565), (10, 4748), (11, 4754), (12, 4832), (13, 4847), (15, 4922), (17, 4982), (18, 5012), (19, 5111), (20, 5114), (21, 5117), (22, 5129), (23, 5150), (24, 5159), (25, 5165), (26, 5282), (27, 5306), (28, 5339), (29, 5381), (30, 5447), (31, 5492), (32, 5531), (33, 5558), (34, 5663), (35, 5732), (36, 5792), (37, 5867), (38, 5876),

Gene: Mosby\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for Mosby\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Murica\_9 Start: 4743, Stop: 6299, Start Num: 2

Candidate Starts for Murica\_9:



(Start: 1 @4740 has 20 MA's), (Start: 2 @4743 has 103 MA's), (3, 4782), (Start: 4 @4803 has 2 MA's), (5, 4833), (6, 4839), (7, 4845), (8, 4944), (9, 4953), (10, 5136), (11, 5142), (12, 5220), (13, 5235), (15, 5310), (17, 5370), (18, 5400), (19, 5499), (20, 5502), (21, 5505), (22, 5517), (23, 5538), (24, 5547), (25, 5553), (26, 5670), (27, 5694), (28, 5727), (29, 5769), (30, 5835), (31, 5880), (32, 5919), (33, 5946), (34, 6051), (35, 6120), (36, 6180), (37, 6255), (38, 6264),

Gene: Murphy\_10 Start: 4072, Stop: 5628, Start Num: 2

Candidate Starts for Murphy\_10:

(Start: 1 @4069 has 20 MA's), (Start: 2 @4072 has 103 MA's), (3, 4111), (Start: 4 @4132 has 2 MA's), (5, 4162), (6, 4168), (7, 4174), (8, 4273), (9, 4282), (10, 4465), (11, 4471), (12, 4549), (13, 4564), (15, 4639), (17, 4699), (18, 4729), (19, 4828), (20, 4831), (21, 4834), (22, 4846), (23, 4867), (24, 4876), (25, 4882), (26, 4999), (27, 5023), (28, 5056), (29, 5098), (30, 5164), (31, 5209), (32, 5248), (33, 5275), (34, 5380), (35, 5449), (36, 5509), (37, 5584), (38, 5593),

Gene: Myrale\_11 Start: 5057, Stop: 6613, Start Num: 2

Candidate Starts for Myrale\_11:

(Start: 1 @5054 has 20 MA's), (Start: 2 @5057 has 103 MA's), (3, 5096), (Start: 4 @5117 has 2 MA's), (5, 5147), (6, 5153), (7, 5159), (8, 5258), (9, 5267), (10, 5450), (11, 5456), (12, 5534), (13, 5549), (15, 5624), (17, 5684), (18, 5714), (19, 5813), (20, 5816), (21, 5819), (22, 5831), (23, 5852), (24, 5861), (25, 5867), (26, 5984), (27, 6008), (28, 6041), (29, 6083), (30, 6149), (31, 6194), (32, 6233), (33, 6260), (34, 6365), (35, 6434), (36, 6494), (37, 6569), (38, 6578),

Gene: Nala\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for Nala\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: NelitzaMV\_11 Start: 5057, Stop: 6613, Start Num: 2

Candidate Starts for NelitzaMV\_11:

(Start: 1 @5054 has 20 MA's), (Start: 2 @5057 has 103 MA's), (3, 5096), (Start: 4 @5117 has 2 MA's), (5, 5147), (6, 5153), (7, 5159), (8, 5258), (9, 5267), (10, 5450), (11, 5456), (12, 5534), (13, 5549), (15, 5624), (17, 5684), (18, 5714), (19, 5813), (20, 5816), (21, 5819), (22, 5831), (23, 5852), (24, 5861), (25, 5867), (26, 5984), (27, 6008), (28, 6041), (29, 6083), (30, 6149), (31, 6194), (32, 6233), (33, 6260), (34, 6365), (35, 6434), (36, 6494), (37, 6569), (38, 6578),

Gene: Nimrod\_10 Start: 4852, Stop: 6408, Start Num: 2

Candidate Starts for Nimrod\_10:

(Start: 1 @4849 has 20 MA's), (Start: 2 @4852 has 103 MA's), (3, 4891), (Start: 4 @4912 has 2 MA's), (5, 4942), (6, 4948), (7, 4954), (8, 5053), (9, 5062), (10, 5245), (11, 5251), (12, 5329), (13, 5344), (15, 5419), (17, 5479), (18, 5509), (19, 5608), (20, 5611), (21, 5614), (22, 5626), (23, 5647), (24, 5656), (25, 5662), (26, 5779), (27, 5803), (28, 5836), (29, 5878), (30, 5944), (31, 5989), (32, 6028), (33, 6055), (34, 6160), (35, 6229), (36, 6289), (37, 6364), (38, 6373),

Gene: NoSleep\_11 Start: 4352, Stop: 5908, Start Num: 2

Candidate Starts for NoSleep\_11:

(Start: 1 @4349 has 20 MA's), (Start: 2 @4352 has 103 MA's), (3, 4391), (Start: 4 @4412 has 2 MA's), (5, 4442), (6, 4448), (7, 4454), (8, 4553), (9, 4562), (10, 4745), (11, 4751), (12, 4829), (13, 4844), (15, 4919), (17, 4979), (18, 5009), (19, 5108), (20, 5111), (21, 5114), (22, 5126), (23, 5147), (24, 5156), (25, 5162), (26, 5279), (27, 5303), (28, 5336), (29, 5378), (30, 5444), (31, 5489), (32, 5528), (33, 5555), (34, 5660), (35, 5729), (36, 5789), (37, 5864), (38, 5873),

Gene: OrionPax\_11 Start: 4355, Stop: 5911, Start Num: 2

Candidate Starts for OrionPax\_11:

(Start: 1 @4352 has 20 MA's), (Start: 2 @4355 has 103 MA's), (3, 4394), (Start: 4 @4415 has 2 MA's), (5, 4445), (6, 4451), (7, 4457), (8, 4556), (9, 4565), (10, 4748), (11, 4754), (12, 4832), (13, 4847), (15, 4922), (17, 4982), (18, 5012), (19, 5111), (20, 5114), (21, 5117), (22, 5129), (23, 5150), (24, 5159), (25, 5165), (26, 5282), (27, 5306), (28, 5339), (29, 5381), (30, 5447), (31, 5492), (32, 5531), (33, 5558), (34, 5663), (35, 5732), (36, 5792), (37, 5867), (38, 5876),

Gene: Palpatine\_10 Start: 4784, Stop: 6340, Start Num: 2

Candidate Starts for Palpatine\_10:

(Start: 1 @4781 has 20 MA's), (Start: 2 @4784 has 103 MA's), (3, 4823), (Start: 4 @4844 has 2 MA's), (5, 4874), (6, 4880), (7, 4886), (8, 4985), (9, 4994), (10, 5177), (11, 5183), (12, 5261), (13, 5276), (15, 5351), (17, 5411), (18, 5441), (19, 5540), (20, 5543), (21, 5546), (22, 5558), (23, 5579), (24, 5588), (25, 5594), (26, 5711), (27, 5735), (28, 5768), (29, 5810), (30, 5876), (31, 5921), (32, 5960), (33, 5987), (34, 6092), (35, 6161), (36, 6221), (37, 6296), (38, 6305),

Gene: Paperbeatsrock\_12 Start: 5383, Stop: 6942, Start Num: 1

Candidate Starts for Paperbeatsrock\_12:

(Start: 1 @5383 has 20 MA's), (Start: 2 @5386 has 103 MA's), (3, 5425), (Start: 4 @5446 has 2 MA's), (5, 5476), (6, 5482), (7, 5488), (8, 5587), (9, 5596), (10, 5779), (11, 5785), (12, 5863), (13, 5878), (15, 5953), (17, 6013), (18, 6043), (19, 6142), (20, 6145), (21, 6148), (22, 6160), (23, 6181), (24, 6190), (25, 6196), (26, 6313), (27, 6337), (28, 6370), (29, 6412), (30, 6478), (31, 6523), (32, 6562), (33, 6589), (34, 6694), (35, 6763), (36, 6823), (37, 6898), (38, 6907),

Gene: Pat3\_10 Start: 3893, Stop: 5449, Start Num: 2

Candidate Starts for Pat3\_10:

(Start: 1 @3890 has 20 MA's), (Start: 2 @3893 has 103 MA's), (3, 3932), (Start: 4 @3953 has 2 MA's), (5, 3983), (6, 3989), (7, 3995), (8, 4094), (9, 4103), (10, 4286), (11, 4292), (12, 4370), (13, 4385), (15, 4460), (17, 4520), (18, 4550), (19, 4649), (20, 4652), (21, 4655), (22, 4667), (23, 4688), (24, 4697), (25, 4703), (26, 4820), (27, 4844), (28, 4877), (29, 4919), (30, 4985), (31, 5030), (32, 5069), (33, 5096), (34, 5201), (35, 5270), (36, 5330), (37, 5405), (38, 5414),

Gene: Petra64142\_11 Start: 5065, Stop: 6624, Start Num: 1

Candidate Starts for Petra64142\_11:

(Start: 1 @5065 has 20 MA's), (Start: 2 @5068 has 103 MA's), (3, 5107), (Start: 4 @5128 has 2 MA's), (5, 5158), (6, 5164), (7, 5170), (8, 5269), (9, 5278), (10, 5461), (11, 5467), (12, 5545), (13, 5560), (15, 5635), (17, 5695), (19, 5824), (20, 5827), (21, 5830), (22, 5842), (23, 5863), (24, 5872), (25, 5878), (26, 5995), (27, 6019), (28, 6052), (29, 6094), (30, 6160), (31, 6205), (32, 6244), (33, 6271), (34, 6376), (35, 6445), (36, 6505), (37, 6580), (38, 6589),

Gene: Phaja\_10 Start: 4846, Stop: 6402, Start Num: 2

Candidate Starts for Phaja\_10:

(Start: 1 @4843 has 20 MA's), (Start: 2 @4846 has 103 MA's), (3, 4885), (Start: 4 @4906 has 2 MA's), (5, 4936), (6, 4942), (7, 4948), (8, 5047), (9, 5056), (10, 5239), (11, 5245), (12, 5323), (13, 5338), (15, 5413), (17, 5473), (18, 5503), (19, 5602), (20, 5605), (21, 5608), (22, 5620), (23, 5641), (24, 5650), (25, 5656), (26, 5773), (27, 5797), (28, 5830), (29, 5872), (30, 5938), (31, 5983), (32, 6022), (33, 6049), (34, 6154), (35, 6223), (36, 6283), (37, 6358), (38, 6367),

Gene: Pharsalus\_11 Start: 5183, Stop: 6742, Start Num: 1

Candidate Starts for Pharsalus\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15,

5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: PhatBacter\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for PhatBacter\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (14, 5303), (15, 5354), (16, 5363), (17, 5414), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Phaux\_9 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for Phaux\_9:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Phrux\_10 Start: 4150, Stop: 5706, Start Num: 2

Candidate Starts for Phrux\_10:

(Start: 1 @4147 has 20 MA's), (Start: 2 @4150 has 103 MA's), (3, 4189), (Start: 4 @4210 has 2 MA's), (5, 4240), (6, 4246), (7, 4252), (8, 4351), (9, 4360), (10, 4543), (11, 4549), (12, 4627), (13, 4642), (14, 4666), (15, 4717), (16, 4726), (17, 4777), (19, 4906), (20, 4909), (21, 4912), (22, 4924), (23, 4945), (24, 4954), (25, 4960), (26, 5077), (27, 5101), (28, 5134), (29, 5176), (30, 5242), (31, 5287), (32, 5326), (33, 5353), (34, 5458), (35, 5527), (36, 5587), (37, 5662), (38, 5671),

Gene: Policronamos\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for Policronamos\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Porky\_9 Start: 3721, Stop: 5280, Start Num: 1

Candidate Starts for Porky\_9:

(Start: 1 @3721 has 20 MA's), (Start: 2 @3724 has 103 MA's), (3, 3763), (Start: 4 @3784 has 2 MA's), (5, 3814), (6, 3820), (7, 3826), (8, 3925), (9, 3934), (10, 4117), (11, 4123), (12, 4201), (13, 4216), (15, 4291), (17, 4351), (18, 4381), (19, 4480), (20, 4483), (21, 4486), (22, 4498), (23, 4519), (24, 4528), (25, 4534), (26, 4651), (27, 4675), (28, 4708), (29, 4750), (30, 4816), (31, 4861), (32, 4900), (33, 4927), (34, 5032), (35, 5101), (36, 5161), (37, 5236), (38, 5245),

Gene: Pumpkin\_11 Start: 4228, Stop: 5724, Start Num: 4

Candidate Starts for Pumpkin\_11:

(Start: 1 @4165 has 20 MA's), (Start: 2 @4168 has 103 MA's), (3, 4207), (Start: 4 @4228 has 2 MA's), (5, 4258), (6, 4264), (7, 4270), (8, 4369), (9, 4378), (10, 4561), (11, 4567), (12, 4645), (13, 4660), (14, 4684), (15, 4735), (16, 4744), (17, 4795), (19, 4924), (20, 4927), (21, 4930), (22, 4942), (23, 4963), (24, 4972), (25, 4978), (26, 5095), (27, 5119), (28, 5152), (29, 5194), (30, 5260), (31, 5305), (32, 5344), (33, 5371), (34, 5476), (35, 5545), (36, 5605), (37, 5680), (38, 5689),

Gene: Quallification\_12 Start: 5392, Stop: 6948, Start Num: 2

Candidate Starts for Quallification\_12:

(Start: 1 @5389 has 20 MA's), (Start: 2 @5392 has 103 MA's), (3, 5431), (Start: 4 @5452 has 2 MA's), (5, 5482), (6, 5488), (7, 5494), (8, 5593), (9, 5602), (10, 5785), (11, 5791), (12, 5869), (13, 5884), (15, 5959), (17, 6019), (18, 6049), (19, 6148), (20, 6151), (21, 6154), (22, 6166), (23, 6187), (24, 6196), (25, 6202), (26, 6319), (27, 6343), (28, 6376), (29, 6418), (30, 6484), (31, 6529), (32, 6568), (33, 6595), (34, 6700), (35, 6769), (36, 6829), (37, 6904), (38, 6913),

Gene: Rakim\_12 Start: 5392, Stop: 6948, Start Num: 2

Candidate Starts for Rakim\_12:

(Start: 1 @5389 has 20 MA's), (Start: 2 @5392 has 103 MA's), (3, 5431), (Start: 4 @5452 has 2 MA's), (5, 5482), (6, 5488), (7, 5494), (8, 5593), (9, 5602), (10, 5785), (11, 5791), (12, 5869), (13, 5884), (15, 5959), (17, 6019), (18, 6049), (19, 6148), (20, 6151), (21, 6154), (22, 6166), (23, 6187), (24, 6196), (25, 6202), (26, 6319), (27, 6343), (28, 6376), (29, 6418), (30, 6484), (31, 6529), (32, 6568), (33, 6595), (34, 6700), (35, 6769), (36, 6829), (37, 6904), (38, 6913),

Gene: Rimmer\_10 Start: 4846, Stop: 6402, Start Num: 2

Candidate Starts for Rimmer\_10:

(Start: 1 @4843 has 20 MA's), (Start: 2 @4846 has 103 MA's), (3, 4885), (Start: 4 @4906 has 2 MA's), (5, 4936), (6, 4942), (7, 4948), (8, 5047), (9, 5056), (10, 5239), (11, 5245), (12, 5323), (13, 5338), (15, 5413), (17, 5473), (18, 5503), (19, 5602), (20, 5605), (21, 5608), (22, 5620), (23, 5641), (24, 5650), (25, 5656), (26, 5773), (27, 5797), (28, 5830), (29, 5872), (30, 5938), (31, 5983), (32, 6022), (33, 6049), (34, 6154), (35, 6223), (36, 6283), (37, 6358), (38, 6367),

Gene: RiverMonster\_10 Start: 4164, Stop: 5720, Start Num: 2

Candidate Starts for RiverMonster\_10:

(Start: 1 @4161 has 20 MA's), (Start: 2 @4164 has 103 MA's), (3, 4203), (Start: 4 @4224 has 2 MA's), (5, 4254), (6, 4260), (7, 4266), (8, 4365), (9, 4374), (10, 4557), (11, 4563), (12, 4641), (13, 4656), (15, 4731), (17, 4791), (18, 4821), (19, 4920), (20, 4923), (21, 4926), (22, 4938), (23, 4959), (24, 4968), (25, 4974), (26, 5091), (27, 5115), (28, 5148), (29, 5190), (30, 5256), (31, 5301), (32, 5340), (33, 5367), (34, 5472), (35, 5541), (36, 5601), (37, 5676), (38, 5685),

Gene: Saints25\_11 Start: 4364, Stop: 5920, Start Num: 2

Candidate Starts for Saints25\_11:

(Start: 1 @4361 has 20 MA's), (Start: 2 @4364 has 103 MA's), (3, 4403), (Start: 4 @4424 has 2 MA's), (5, 4454), (6, 4460), (7, 4466), (8, 4565), (9, 4574), (10, 4757), (11, 4763), (12, 4841), (13, 4856), (15, 4931), (17, 4991), (18, 5021), (19, 5120), (20, 5123), (21, 5126), (22, 5138), (23, 5159), (24, 5168), (25, 5174), (26, 5291), (27, 5315), (28, 5348), (29, 5390), (30, 5456), (31, 5501), (32, 5540), (33, 5567), (34, 5672), (35, 5741), (36, 5801), (37, 5876), (38, 5885),

Gene: Sassay\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for Sassay\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: ShamWow\_11 Start: 5186, Stop: 6742, Start Num: 2

Candidate Starts for ShamWow\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34,

6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: ShereKhan\_12 Start: 5392, Stop: 6948, Start Num: 2

Candidate Starts for ShereKhan\_12:

(Start: 1 @5389 has 20 MA's), (Start: 2 @5392 has 103 MA's), (3, 5431), (Start: 4 @5452 has 2 MA's), (5, 5482), (6, 5488), (7, 5494), (8, 5593), (9, 5602), (10, 5785), (11, 5791), (12, 5869), (13, 5884), (15, 5959), (17, 6019), (19, 6148), (20, 6151), (21, 6154), (22, 6166), (23, 6187), (24, 6196), (25, 6202), (26, 6319), (27, 6343), (28, 6376), (29, 6418), (30, 6484), (31, 6529), (32, 6568), (33, 6595), (34, 6700), (35, 6769), (36, 6829), (37, 6904), (38, 6913),

Gene: Simpliphy\_11 Start: 4355, Stop: 5911, Start Num: 2

Candidate Starts for Simpliphy\_11:

(Start: 1 @4352 has 20 MA's), (Start: 2 @4355 has 103 MA's), (3, 4394), (Start: 4 @4415 has 2 MA's), (5, 4445), (6, 4451), (7, 4457), (8, 4556), (9, 4565), (10, 4748), (11, 4754), (12, 4832), (13, 4847), (15, 4922), (17, 4982), (18, 5012), (19, 5111), (20, 5114), (21, 5117), (22, 5129), (23, 5150), (24, 5159), (25, 5165), (26, 5282), (27, 5306), (28, 5339), (29, 5381), (30, 5447), (31, 5492), (32, 5531), (33, 5558), (34, 5663), (35, 5732), (36, 5792), (37, 5867), (38, 5876),

Gene: SirDuracell\_10 Start: 3853, Stop: 5409, Start Num: 2

Candidate Starts for SirDuracell\_10:

(Start: 1 @3850 has 20 MA's), (Start: 2 @3853 has 103 MA's), (3, 3892), (Start: 4 @3913 has 2 MA's), (5, 3943), (6, 3949), (7, 3955), (8, 4054), (9, 4063), (10, 4246), (11, 4252), (12, 4330), (13, 4345), (15, 4420), (17, 4480), (18, 4510), (19, 4609), (20, 4612), (21, 4615), (22, 4627), (23, 4648), (24, 4657), (25, 4663), (26, 4780), (27, 4804), (28, 4837), (29, 4879), (30, 4945), (31, 4990), (32, 5029), (33, 5056), (34, 5161), (35, 5230), (36, 5290), (37, 5365), (38, 5374),

Gene: SophKB\_11 Start: 5186, Stop: 6742, Start Num: 2

Candidate Starts for SophKB\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Sotrice96\_11 Start: 5142, Stop: 6698, Start Num: 2

Candidate Starts for Sotrice96\_11:

(Start: 1 @5139 has 20 MA's), (Start: 2 @5142 has 103 MA's), (3, 5181), (Start: 4 @5202 has 2 MA's), (5, 5232), (6, 5238), (7, 5244), (8, 5343), (9, 5352), (10, 5535), (11, 5541), (12, 5619), (13, 5634), (15, 5709), (17, 5769), (18, 5799), (19, 5898), (20, 5901), (21, 5904), (22, 5916), (23, 5937), (24, 5946), (25, 5952), (26, 6069), (27, 6093), (28, 6126), (29, 6168), (30, 6234), (31, 6279), (32, 6318), (33, 6345), (34, 6450), (35, 6519), (36, 6579), (37, 6654), (38, 6663),

Gene: Stank\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for Stank\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: Stark\_11 Start: 4167, Stop: 5723, Start Num: 2

Candidate Starts for Stark\_11:

(Start: 1 @4164 has 20 MA's), (Start: 2 @4167 has 103 MA's), (3, 4206), (Start: 4 @4227 has 2 MA's), (5, 4257), (6, 4263), (7, 4269), (8, 4368), (9, 4377), (10, 4560), (11, 4566), (12, 4644), (13, 4659), (14, 4683), (15, 4734), (16, 4743), (17, 4794), (19, 4923), (20, 4926), (21, 4929), (22, 4941), (23, 4962), (24, 4971), (25, 4977), (26, 5094), (27, 5118), (28, 5151), (29, 5193), (30, 5259), (31, 5304), (32, 5343), (33, 5370), (34, 5475), (35, 5544), (36, 5604), (37, 5679), (38, 5688),

Gene: StellaBean\_11 Start: 5186, Stop: 6742, Start Num: 2

Candidate Starts for StellaBean\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: StolenFromERC\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for StolenFromERC\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: StormChicken\_11 Start: 5065, Stop: 6624, Start Num: 1

Candidate Starts for StormChicken\_11:

(Start: 1 @5065 has 20 MA's), (Start: 2 @5068 has 103 MA's), (3, 5107), (Start: 4 @5128 has 2 MA's), (5, 5158), (6, 5164), (7, 5170), (8, 5269), (9, 5278), (10, 5461), (11, 5467), (12, 5545), (13, 5560), (15, 5635), (17, 5695), (18, 5725), (19, 5824), (20, 5827), (21, 5830), (22, 5842), (23, 5863), (24, 5872), (25, 5878), (26, 5995), (27, 6019), (28, 6052), (29, 6094), (30, 6160), (31, 6205), (32, 6244), (33, 6271), (34, 6376), (36, 6505), (37, 6580), (38, 6589),

Gene: TBrady12\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for TBrady12\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (15, 4966), (17, 5026), (18, 5056), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: Tarkin\_12 Start: 5395, Stop: 6951, Start Num: 2

Candidate Starts for Tarkin\_12:

(Start: 1 @5392 has 20 MA's), (Start: 2 @5395 has 103 MA's), (3, 5434), (Start: 4 @5455 has 2 MA's), (5, 5485), (6, 5491), (7, 5497), (8, 5596), (9, 5605), (10, 5788), (11, 5794), (12, 5872), (13, 5887), (15, 5962), (17, 6022), (18, 6052), (19, 6151), (20, 6154), (21, 6157), (22, 6169), (23, 6190), (24, 6199), (25, 6205), (26, 6322), (27, 6346), (28, 6379), (29, 6421), (30, 6487), (31, 6532), (32, 6571), (33, 6598), (34, 6703), (35, 6772), (36, 6832), (37, 6907), (38, 6916),

Gene: TeardropMSU\_10 Start: 5186, Stop: 6742, Start Num: 2

Candidate Starts for TeardropMSU\_10:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Teaspoon\_10 Start: 3893, Stop: 5449, Start Num: 2

Candidate Starts for Teaspoon\_10:

(Start: 1 @3890 has 20 MA's), (Start: 2 @3893 has 103 MA's), (3, 3932), (Start: 4 @3953 has 2 MA's), (5, 3983), (6, 3989), (7, 3995), (8, 4094), (9, 4103), (10, 4286), (11, 4292), (12, 4370), (13, 4385), (14, 4409), (15, 4460), (17, 4520), (18, 4550), (19, 4649), (20, 4652), (21, 4655), (22, 4667), (23, 4688), (24, 4697), (25, 4703), (26, 4820), (27, 4844), (28, 4877), (29, 4919), (30, 4985), (31, 5030), (32, 5069), (33, 5096), (34, 5201), (35, 5270), (36, 5330), (37, 5405), (38, 5414),

Gene: Terminus\_10 Start: 4784, Stop: 6343, Start Num: 1

Candidate Starts for Terminus\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Thimble\_11 Start: 4146, Stop: 5702, Start Num: 2

Candidate Starts for Thimble\_11:

(Start: 1 @4143 has 20 MA's), (Start: 2 @4146 has 103 MA's), (3, 4185), (Start: 4 @4206 has 2 MA's), (5, 4236), (6, 4242), (7, 4248), (8, 4347), (9, 4356), (10, 4539), (11, 4545), (12, 4623), (13, 4638), (15, 4713), (17, 4773), (18, 4803), (19, 4902), (20, 4905), (21, 4908), (22, 4920), (23, 4941), (24, 4950), (25, 4956), (26, 5073), (27, 5097), (28, 5130), (29, 5172), (30, 5238), (31, 5283), (32, 5322), (33, 5349), (34, 5454), (35, 5523), (36, 5583), (37, 5658), (38, 5667),

Gene: Thresher\_11 Start: 5157, Stop: 6713, Start Num: 2

Candidate Starts for Thresher\_11:

(Start: 1 @5154 has 20 MA's), (Start: 2 @5157 has 103 MA's), (3, 5196), (Start: 4 @5217 has 2 MA's), (5, 5247), (6, 5253), (7, 5259), (8, 5358), (9, 5367), (10, 5550), (11, 5556), (12, 5634), (13, 5649), (14, 5673), (15, 5724), (16, 5733), (17, 5784), (19, 5913), (20, 5916), (21, 5919), (22, 5931), (23, 5952), (24, 5961), (25, 5967), (26, 6084), (27, 6108), (28, 6141), (29, 6183), (30, 6249), (31, 6294), (32, 6333), (33, 6360), (34, 6465), (35, 6534), (36, 6594), (37, 6669), (38, 6678),

Gene: Tomaszewski\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for Tomaszewski\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Toto\_11 Start: 5183, Stop: 6742, Start Num: 1

Candidate Starts for Toto\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Traaww1\_9 Start: 4832, Stop: 6388, Start Num: 2

Candidate Starts for Traaww1\_9:

(Start: 1 @4829 has 20 MA's), (Start: 2 @4832 has 103 MA's), (3, 4871), (Start: 4 @4892 has 2 MA's), (5, 4922), (6, 4928), (7, 4934), (8, 5033), (9, 5042), (10, 5225), (11, 5231), (12, 5309), (13, 5324), (14,

5348), (15, 5399), (16, 5408), (17, 5459), (18, 5489), (19, 5588), (20, 5591), (21, 5594), (22, 5606), (23, 5627), (24, 5636), (25, 5642), (26, 5759), (27, 5783), (28, 5816), (29, 5858), (30, 5924), (31, 5969), (32, 6008), (33, 6035), (34, 6140), (35, 6209), (36, 6269), (37, 6344), (38, 6353),

Gene: Tuco\_11 Start: 5186, Stop: 6742, Start Num: 2

Candidate Starts for Tuco\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Ukulele\_10 Start: 4167, Stop: 5723, Start Num: 2

Candidate Starts for Ukulele\_10:

(Start: 1 @4164 has 20 MA's), (Start: 2 @4167 has 103 MA's), (3, 4206), (Start: 4 @4227 has 2 MA's), (5, 4257), (6, 4263), (7, 4269), (8, 4368), (9, 4377), (10, 4560), (11, 4566), (12, 4644), (13, 4659), (14, 4683), (15, 4734), (16, 4743), (17, 4794), (19, 4923), (20, 4926), (21, 4929), (22, 4941), (23, 4962), (24, 4971), (25, 4977), (26, 5094), (27, 5118), (28, 5151), (29, 5193), (30, 5259), (31, 5304), (32, 5343), (33, 5370), (34, 5475), (35, 5544), (36, 5604), (37, 5679), (38, 5688),

Gene: Wiggin\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for Wiggin\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: Willez\_10 Start: 4787, Stop: 6343, Start Num: 2

Candidate Starts for Willez\_10:

(Start: 1 @4784 has 20 MA's), (Start: 2 @4787 has 103 MA's), (3, 4826), (Start: 4 @4847 has 2 MA's), (5, 4877), (6, 4883), (7, 4889), (8, 4988), (9, 4997), (10, 5180), (11, 5186), (12, 5264), (13, 5279), (15, 5354), (17, 5414), (18, 5444), (19, 5543), (20, 5546), (21, 5549), (22, 5561), (23, 5582), (24, 5591), (25, 5597), (26, 5714), (27, 5738), (28, 5771), (29, 5813), (30, 5879), (31, 5924), (32, 5963), (33, 5990), (34, 6095), (35, 6164), (36, 6224), (37, 6299), (38, 6308),

Gene: Xandras\_12 Start: 4399, Stop: 5955, Start Num: 2

Candidate Starts for Xandras\_12:

(Start: 1 @4396 has 20 MA's), (Start: 2 @4399 has 103 MA's), (3, 4438), (Start: 4 @4459 has 2 MA's), (5, 4489), (6, 4495), (7, 4501), (8, 4600), (9, 4609), (10, 4792), (11, 4798), (12, 4876), (13, 4891), (14, 4915), (15, 4966), (16, 4975), (17, 5026), (19, 5155), (20, 5158), (21, 5161), (22, 5173), (23, 5194), (24, 5203), (25, 5209), (26, 5326), (27, 5350), (28, 5383), (29, 5425), (30, 5491), (31, 5536), (32, 5575), (33, 5602), (34, 5707), (35, 5776), (36, 5836), (37, 5911), (38, 5920),

Gene: YassJohnny\_11 Start: 5183, Stop: 6742, Start Num: 1

Candidate Starts for YassJohnny\_11:

(Start: 1 @5183 has 20 MA's), (Start: 2 @5186 has 103 MA's), (3, 5225), (Start: 4 @5246 has 2 MA's), (5, 5276), (6, 5282), (7, 5288), (8, 5387), (9, 5396), (10, 5579), (11, 5585), (12, 5663), (13, 5678), (15, 5753), (17, 5813), (18, 5843), (19, 5942), (20, 5945), (21, 5948), (22, 5960), (23, 5981), (24, 5990), (25, 5996), (26, 6113), (27, 6137), (28, 6170), (29, 6212), (30, 6278), (31, 6323), (32, 6362), (33, 6389), (34, 6494), (35, 6563), (36, 6623), (37, 6698), (38, 6707),

Gene: Youngblood\_10 Start: 4778, Stop: 6334, Start Num: 2



Candidate Starts for Youngblood\_10:

(Start: 1 @4775 has 20 MA's), (Start: 2 @4778 has 103 MA's), (3, 4817), (Start: 4 @4838 has 2 MA's), (5, 4868), (6, 4874), (7, 4880), (8, 4979), (9, 4988), (10, 5171), (11, 5177), (12, 5255), (13, 5270), (15, 5345), (17, 5405), (18, 5435), (19, 5534), (20, 5537), (21, 5540), (22, 5552), (23, 5573), (24, 5582), (25, 5588), (26, 5705), (27, 5729), (28, 5762), (29, 5804), (30, 5870), (31, 5915), (32, 5954), (33, 5981), (34, 6086), (35, 6155), (36, 6215), (37, 6290), (38, 6299),

Gene: xkcd\_11 Start: 4939, Stop: 6495, Start Num: 2

Candidate Starts for xkcd\_11:

(Start: 1 @4936 has 20 MA's), (Start: 2 @4939 has 103 MA's), (3, 4978), (Start: 4 @4999 has 2 MA's), (5, 5029), (6, 5035), (7, 5041), (8, 5140), (9, 5149), (10, 5332), (11, 5338), (12, 5416), (13, 5431), (15, 5506), (17, 5566), (18, 5596), (19, 5695), (20, 5698), (21, 5701), (22, 5713), (23, 5734), (24, 5743), (25, 5749), (26, 5866), (27, 5890), (28, 5923), (29, 5965), (30, 6031), (31, 6076), (32, 6115), (33, 6142), (34, 6247), (35, 6316), (36, 6376), (37, 6451), (38, 6460),