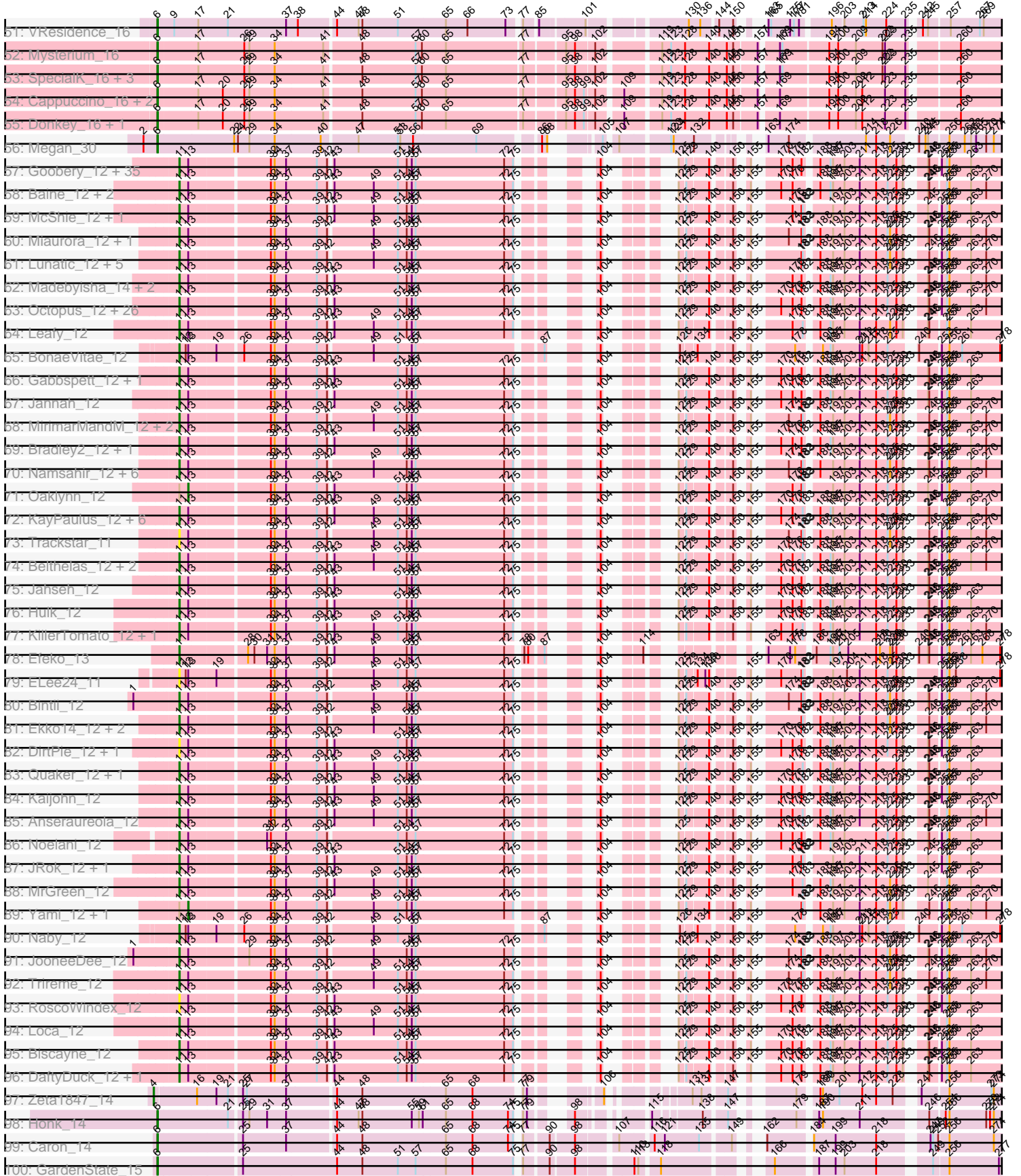
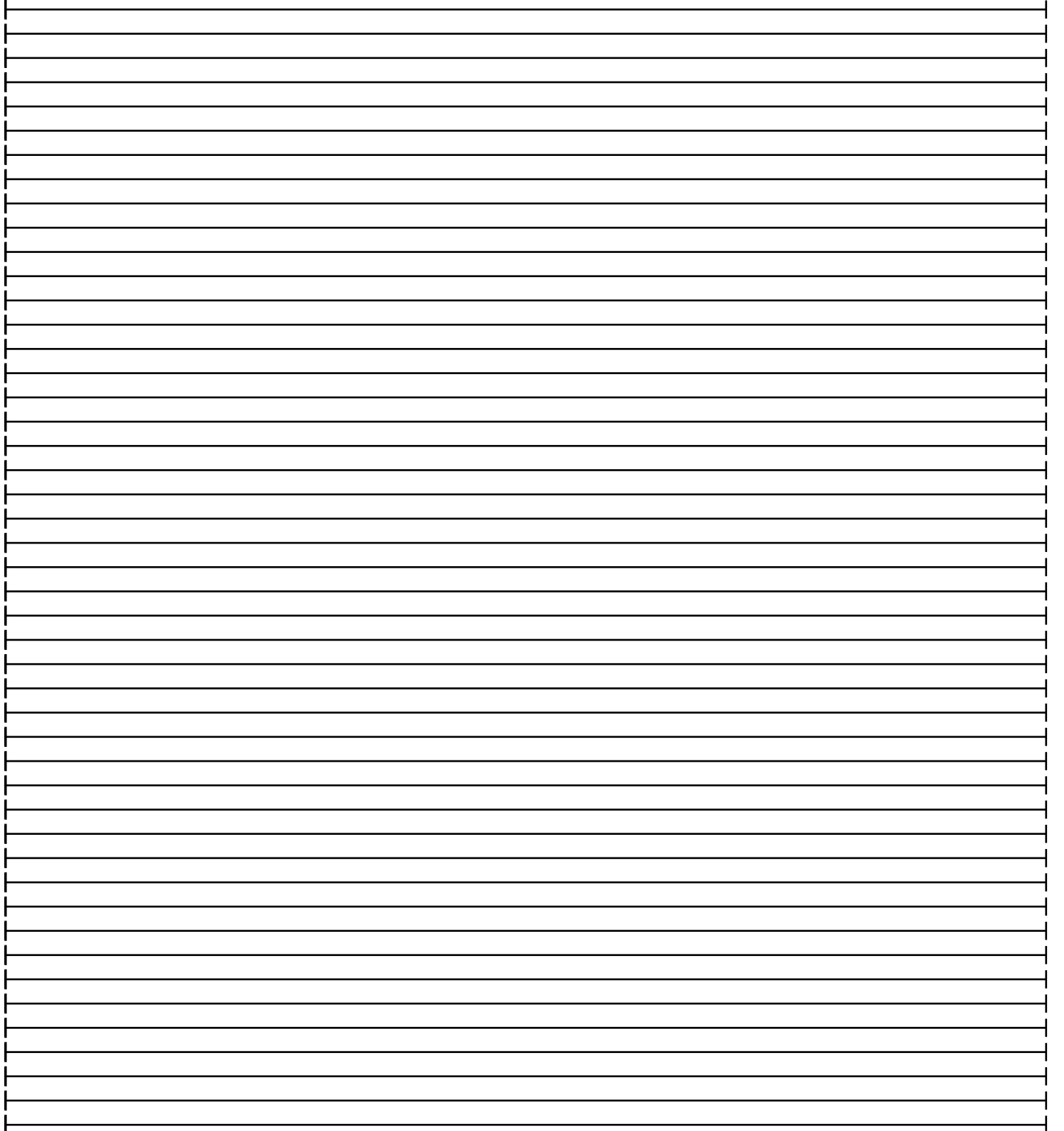
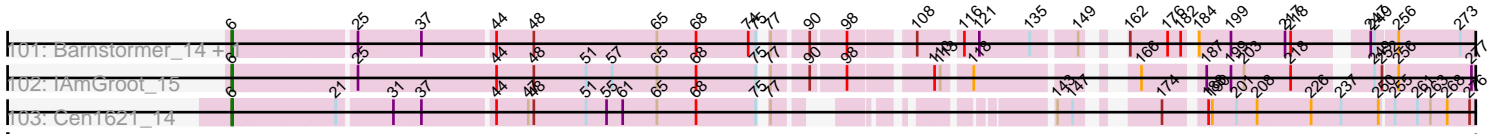




# Zoomed Pham 199971



# Zoomed Pham 199971



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 199971 Report

This analysis was run 01/18/25 on database version 583.

Pham number 199971 has 242 members, 13 are drafts.

Phages represented in each track:

- Track 1 : Kittykat\_14
- Track 2 : Makoto\_14
- Track 3 : EstebanJulior\_14, MamaPearl\_14
- Track 4 : BigMack\_14
- Track 5 : OMalley\_14, Eunoia\_14, Aledel\_14, Chridison\_14, Riovina\_14
- Track 6 : Carpal\_18, Dino\_18, Kalizoi\_18, Zorro\_18
- Track 7 : Oxynfrius\_18, Albanese\_18
- Track 8 : CristinaYang\_14, Lasagna\_14, Nancia\_14, Bodacious\_14
- Track 9 : Scuttle\_18
- Track 10 : Suppi\_18, Canowicakte\_18
- Track 11 : Sergei\_14, KingBob\_14, Herb\_14, Temper16\_14, Maria1952\_14, Daiboju\_14
- Track 12 : AustinPowers\_14
- Track 13 : Moki\_14, Bennie\_14, HeadNerd\_14, Huckleberry\_14
- Track 14 : Beethoven\_18
- Track 15 : HunterDalle\_14, Vulture\_14
- Track 16 : RAP15\_18, Vallejo\_18, Jumboset\_18, MeganNoll\_18
- Track 17 : LilStuart\_14, Lennox\_14
- Track 18 : Greenhouse\_18
- Track 19 : Potatoes\_18, Cholula\_18, Immaculata\_18
- Track 20 : AppleCider\_18
- Track 21 : PinkFriday\_14
- Track 22 : Lakshmi\_18
- Track 23 : Fluke\_18, Glenn\_18, TattModd\_18, Savage2526\_18
- Track 24 : Lucy\_14
- Track 25 : Wawa\_18
- Track 26 : Korra\_19
- Track 27 : Gisselle\_14, DreamTeam\_14
- Track 28 : GreenHearts\_18
- Track 29 : CallieOMalley\_18
- Track 30 : DrRobert\_14
- Track 31 : Nubia\_18
- Track 32 : OurGirlNessie\_14
- Track 33 : RcigaStruga\_18, Huntingdon\_18
- Track 34 : Pumancara\_14
- Track 35 : Litotes\_18
- Track 36 : Wayne\_18, PartyCup\_18

- Track 37 : PitaDog\_14
- Track 38 : Rozby\_18
- Track 39 : Christian\_14
- Track 40 : MrGloopy\_18
- Track 41 : Riverdale\_18
- Track 42 : Pterodactyl\_14
- Track 43 : Joann\_18
- Track 44 : Preamble\_14
- Track 45 : ChewChew\_14
- Track 46 : Supakev\_14
- Track 47 : Misaeng\_18
- Track 48 : Urla\_14
- Track 49 : WonderBoy\_14
- Track 50 : BrotherBLo\_18
- Track 51 : VResidence\_16
- Track 52 : Mysterium\_16
- Track 53 : SpecialK\_16, Halsey\_16, Ashes\_16, Moss\_16
- Track 54 : Cappuccino\_16, Kalimba\_16, Sooty\_16
- Track 55 : Donkey\_16, Gambol\_16
- Track 56 : Megan\_30
- Track 57 : Goobery\_12, JaimeB\_12, BurtonThePup\_12, Otwor\_12, Burgy\_12, Rhogar\_12, Slentz\_12, Rhysand\_12, Ciel\_12, NeumannU\_12, BinkBonk\_12, Josuke\_12, SantasSleigh\_12, Owens\_12, Cheesecake\_12, Godfather\_12, Luxx\_12, Scrunchy\_12, Danno\_12, Charbie\_12, Vanisius\_12, LionelHutz\_12, Scamander\_12, Maneater\_12, Aries55\_12, Majesty\_12, Sage7\_12, BarBear\_12, Kojax4\_12, Astro16\_12, TeddyBoy\_12, Avvas\_12, Yasuo\_12, LaviMo\_12, Eightball\_12, TimoTea\_12
- Track 58 : Baine\_12, Lola20\_12, Cayde6\_12
- Track 59 : McShie\_12, BrokMonster\_12
- Track 60 : Miaurora\_12, Stem\_12
- Track 61 : Lunatic\_12, Nobel\_12, PuffyCat\_12, TinyTruffula\_12, Clownery\_12, Niffler\_12
- Track 62 : Madebyisha\_14, Jerky\_12, VitulaEligans\_12
- Track 63 : Octopus\_12, Sara\_12, Alucard\_12, EdElric\_12, Puddles3\_12, Horacetta\_12, Erin\_12, PaoPu\_12, Aztec\_12, Danimal\_12, Gardevoir\_12, Dooby\_12, Chatham\_12, Picnic\_12, GoldenBlanche\_12, Minima\_12, LemonPepper\_12, ManAs\_12, KyriosFaba\_12, Pondwater\_12, JoBros\_12, Dongwon\_12, Witch\_12, Myram\_12, YertPhresh\_12, SeaWolves\_12, Yubaba\_12
- Track 64 : Leafy\_12
- Track 65 : Bonaevitae\_12
- Track 66 : Gabbspett\_12, Hernandez44\_12
- Track 67 : Jannah\_12
- Track 68 : MirimarMandM\_12, Upsilon\_12, PoRanda\_12
- Track 69 : Bradley2\_12, Gillker\_12
- Track 70 : Namsahir\_12, Bullzi2019\_12, TomBrady12\_12, Snuffles\_13, Publix\_12, IzzyPants24\_11, Slizam\_12
- Track 71 : Oaklynn\_12
- Track 72 : KayPaulus\_12, MelBee03\_12, Bodhi17\_12, Wolfpack\_12, Sippinontea\_12, Douggie\_12, Kevanna\_12
- Track 73 : Trackstar\_11
- Track 74 : Belthelas\_12, Concrete\_12, BoomRoasted\_12
- Track 75 : Jahseh\_12
- Track 76 : Hulk\_12

- Track 77 : KillerTomato\_12, Bri160\_12
- Track 78 : Efeke\_13
- Track 79 : ELee24\_11
- Track 80 : Bintii\_12
- Track 81 : Ekko14\_12, HarperAnne\_12, Elspeth\_12
- Track 82 : DirtPie\_12, Zahlia\_12
- Track 83 : Quaker\_12, Livingwater\_12
- Track 84 : Kaijohn\_12
- Track 85 : Anseraureola\_12
- Track 86 : Noelani\_12
- Track 87 : JRok\_12, Azizam\_12
- Track 88 : MrGreen\_12
- Track 89 : Yami\_12, Cazares\_12
- Track 90 : Naby\_12
- Track 91 : JooneeDee\_12
- Track 92 : Trireme\_12
- Track 93 : RoscoWindex\_12
- Track 94 : Loca\_12
- Track 95 : Biscayne\_12
- Track 96 : DaftyDuck\_12, MasterPitts\_12
- Track 97 : Zeta1847\_14
- Track 98 : Honk\_14
- Track 99 : Caron\_14
- Track 100 : GardenState\_15
- Track 101 : Barnstormer\_14, UtzChips\_14
- Track 102 : IAmGroot\_15
- Track 103 : Cen1621\_14

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

The start number called the most often in the published annotations is 11, it was called in 123 of the 229 non-draft genes in the pham.

Genes that call this "Most Annotated" start:

- Alucard\_12, Anseraureola\_12, Aries55\_12, Astro16\_12, Avvas\_12, Azizam\_12, Aztec\_12, Baine\_12, BarBear\_12, Belthelas\_12, BinkBonk\_12, Bintii\_12, Biscayne\_12, Bodhi17\_12, BonaeVitae\_12, BoomRoasted\_12, Bradley2\_12, Bri160\_12, BrokMonster\_12, Bullzi2019\_12, Burgy\_12, BurtonThePup\_12, Cayde6\_12, Charbie\_12, Chatham\_12, Cheesecake\_12, Ciel\_12, Clownery\_12, Concrete\_12, DaftyDuck\_12, Danimal\_12, Danno\_12, DirtPie\_12, Dongwon\_12, Dooby\_12, Duggie\_12, ELee24\_11, EdElric\_12, Efeke\_13, Eightball\_12, Ekko14\_12, Elspeth\_12, Erin\_12, Gabbspett\_12, Gardevoir\_12, Gillker\_12, Godfather\_12, GoldenBlanche\_12, Goobery\_12, HarperAnne\_12, Hernandez44\_12, Horacetta\_12, Hulk\_12, IzzyPants24\_11, JRok\_12, Jahseh\_12, JaimeB\_12, Jannah\_12, Jerky\_12, JoBros\_12, JooneeDee\_12, Josuke\_12, Kaijohn\_12, KayPaulus\_12, Kevanna\_12, KillerTomato\_12, Kojax4\_12, KyriosFaba\_12, LaviMo\_12, Leafy\_12, LemonPepper\_12, LionelHutz\_12, Livingwater\_12, Loca\_12, Lola20\_12, Lunatic\_12, Luxx\_12, Madebyisha\_14, Majesty\_12, ManAs\_12, Maneater\_12, MasterPitts\_12, McShie\_12, MelBee03\_12, Miaurora\_12, Minima\_12, MirimarMandM\_12, MrGreen\_12, Myram\_12, Naby\_12, Namsahir\_12,

NeumannU\_12, Niffler\_12, Nobel\_12, Noelani\_12, Octopus\_12, Otwor\_12, Owens\_12, PaoPu\_12, Picnic\_12, PoRanda\_12, Pondwater\_12, Publix\_12, Puddles3\_12, PuffyCat\_12, Quaker\_12, Rhogar\_12, Rhysand\_12, RoscoWindex\_12, Sage7\_12, SantasSleigh\_12, Sara\_12, Scamander\_12, Scrunchy\_12, SeaWolves\_12, Sippinontea\_12, Slentz\_12, Slizam\_12, Snuffles\_13, Stem\_12, TeddyBoy\_12, TimoTea\_12, TinyTruffula\_12, TomBrady12\_12, Trackstar\_11, Trireme\_12, Upsilon\_12, Vanisius\_12, VitulaEligans\_12, Witch\_12, Wolfpack\_12, Yasuo\_12, YertPhresh\_12, Yubaba\_12, Zahlia\_12,

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

- Cazares\_12, Oaklynn\_12, Yami\_12,

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

- Albanese\_18, Aledel\_14, AppleCider\_18, Ashes\_16, AustinPowers\_14, Barnstormer\_14, Beethoven\_18, Bennie\_14, BigMack\_14, Bodacious\_14, BrotherBLo\_18, CallieOMalley\_18, Canowicakte\_18, Cappuccino\_16, Caron\_14, Carpal\_18, Cen1621\_14, ChewChew\_14, Cholula\_18, Chridison\_14, Christian\_14, CristinaYang\_14, Daiboju\_14, Dino\_18, Donkey\_16, DrRobert\_14, DreamTeam\_14, EstebanJulior\_14, Eunoia\_14, Fluke\_18, Gambol\_16, GardenState\_15, Gisselle\_14, Glenn\_18, GreenHearts\_18, Greenhouse\_18, Halsey\_16, HeadNerd\_14, Herb\_14, Honk\_14, Huckleberry\_14, HunterDalle\_14, Huntingdon\_18, IAmGroot\_15, Immaculata\_18, Joann\_18, Jumboset\_18, Kalimba\_16, Kalizoi\_18, KingBob\_14, Kittykat\_14, Korra\_19, Lakshmi\_18, Lasagna\_14, Lennox\_14, LilStuart\_14, Litotes\_18, Lucy\_14, Makoto\_14, MamaPearl\_14, Maria1952\_14, MeganNoll\_18, Megan\_30, Misaeng\_18, Moki\_14, Moss\_16, MrGloopy\_18, Mysterium\_16, Nancia\_14, Nubia\_18, OMalley\_14, OurGirlNessie\_14, Oxyfrius\_18, PartyCup\_18, PinkFriday\_14, PitaDog\_14, Potatoes\_18, Preamble\_14, Pterodactyl\_14, Pumancara\_14, RAP15\_18, RcigaStruga\_18, Rivovina\_14, Riverdale\_18, Rozby\_18, Savage2526\_18, Scuttle\_18, Sergei\_14, Sooty\_16, SpecialK\_16, Supakev\_14, Suppi\_18, TattModd\_18, Temper16\_14, Urla\_14, UtzChips\_14, VResidence\_16, Vallejo\_18, Vulture\_14, Wawa\_18, Wayne\_18, WonderBoy\_14, Zeta1847\_14, Zorro\_18,

### Summary by start number:

Start 4:

- Found in 1 of 242 ( 0.4% ) of genes in pham
- Manual Annotations of this start: 1 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Zeta1847\_14 (EH),

Start 5:

- Found in 84 of 242 ( 34.7% ) of genes in pham
- Manual Annotations of this start: 83 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Albanese\_18 (AK), Aledel\_14 (AK), AppleCider\_18 (AK), AustinPowers\_14 (AK), Beethoven\_18 (AK), Bennie\_14 (AK), BigMack\_14 (AK), Bodacious\_14 (AK), BrotherBLo\_18 (AK), CallieOMalley\_18 (AK), Canowicakte\_18 (AK), Carpal\_18 (AK), ChewChew\_14 (AK), Cholula\_18 (AK), Chridison\_14 (AK), Christian\_14 (AK), CristinaYang\_14 (AK), Daiboju\_14 (AK), Dino\_18 (AK), DrRobert\_14 (AK), DreamTeam\_14 (AK), EstebanJulior\_14 (AK), Eunoia\_14 (AK), Fluke\_18 (AK), Gisselle\_14 (AK), Glenn\_18 (AK), GreenHearts\_18 (AK), Greenhouse\_18 (AK), HeadNerd\_14 (AK), Herb\_14 (AK), Huckleberry\_14 (AK),



HunterDalle\_14 (AK), Huntingdon\_18 (AK), Immaculata\_18 (AK), Joann\_18 (AK), Jumboset\_18 (AK), Kalizoi\_18 (AK), KingBob\_14 (AK), Kittykat\_14 (AK), Korra\_19 (AK), Lakshmi\_18 (AK), Lasagna\_14 (AK), Lennox\_14 (AK), LiStuart\_14 (AK), Litotes\_18 (AK), Lucy\_14 (AK), Makoto\_14 (AK), MamaPearl\_14 (AK), Maria1952\_14 (AK), MeganNoll\_18 (AK), Misaeng\_18 (AK), Moki\_14 (AK), MrGloopy\_18 (AK), Nancia\_14 (AK), Nubia\_18 (AK), OMalley\_14 (AK), OurGirlNessie\_14 (AK), Oxynfrius\_18 (AK), PartyCup\_18 (AK), PinkFriday\_14 (AK), PitaDog\_14 (AK), Potatoes\_18 (AK), Preamble\_14 (AK), Pterodactyl\_14 (AK), Pumancara\_14 (AK), RAP15\_18 (AK), RcigaStruga\_18 (AK), Riovina\_14 (AK), Riverdale\_18 (AK), Rozby\_18 (AK), Savage2526\_18 (AK), Scuttle\_18 (AK), Sergei\_14 (AK), Supakev\_14 (AK), Suppi\_18 (AK), TattModd\_18 (AK), Temper16\_14 (AK), Urla\_14 (AK), Vallejo\_18 (AK), Vulture\_14 (AK), Wawa\_18 (AK), Wayne\_18 (AK), WonderBoy\_14 (AK), Zorro\_18 (AK),

#### Start 6:

- Found in 19 of 242 ( 7.9% ) of genes in pham
- Manual Annotations of this start: 19 of 229
- Called 100.0% of time when present
- Phage (with cluster) where this start called: Ashes\_16 (AZ5), Barnstormer\_14 (EH), Cappuccino\_16 (AZ5), Caron\_14 (EH), Cen1621\_14 (EH), Donkey\_16 (AZ5), Gambol\_16 (AZ5), GardenState\_15 (EH), Halsey\_16 (AZ5), Honk\_14 (EH), IAmGroot\_15 (EH), Kalimba\_16 (AZ5), Megan\_30 (EC), Moss\_16 (AZ5), Mysterium\_16 (AZ5), Sooty\_16 (AZ5), SpecialK\_16 (AZ5), UtzChips\_14 (EH), VResidence\_16 (AZ1),

#### Start 11:

- Found in 138 of 242 ( 57.0% ) of genes in pham
- Manual Annotations of this start: 123 of 229
- Called 97.8% of time when present
- Phage (with cluster) where this start called: Alucard\_12 (EE), Anseraureola\_12 (EE), Aries55\_12 (EE), Astro16\_12 (EE), Avvas\_12 (EE), Azizam\_12 (EE), Aztec\_12 (EE), Baine\_12 (EE), BarBear\_12 (EE), Belthelas\_12 (EE), BinkBonk\_12 (EE), Binti\_12 (EE), Biscayne\_12 (EE), Bodhi17\_12 (EE), BonaeVitae\_12 (EE), BoomRoasted\_12 (EE), Bradley2\_12 (EE), Bri160\_12 (EE), BrokMonster\_12 (EE), Bullzi2019\_12 (EE), Burgy\_12 (EE), BurtonThePup\_12 (EE), Cayde6\_12 (EE), Charbie\_12 (EE), Chatham\_12 (EE), Cheesecake\_12 (EE), Ciel\_12 (EE), Clownery\_12 (EE), Concrete\_12 (EE), DaftyDuck\_12 (EE), Danimal\_12 (EE), Danno\_12 (EE), DirtPie\_12 (EE), Dongwon\_12 (EE), Dooby\_12 (EE), Douggie\_12 (EE), ELee24\_11 (EE), EdElric\_12 (EE), Efeko\_13 (EE), Eightball\_12 (EE), Ekko14\_12 (EE), Elspeth\_12 (EE), Erin\_12 (EE), Gabbspett\_12 (EE), Gardevoir\_12 (EE), Gillker\_12 (EE), Godfather\_12 (EE), GoldenBlanche\_12 (EE), Goobery\_12 (EE), HarperAnne\_12 (EE), Hernandez44\_12 (EE), Horacetta\_12 (EE), Hulk\_12 (EE), IzzyPants24\_11 (EE), JRok\_12 (EE), Jahseh\_12 (EE), JaimeB\_12 (EE), Jannah\_12 (EE), Jerky\_12 (EE), JoBros\_12 (EE), JooneeDee\_12 (EE), Josuke\_12 (EE), Kaijohn\_12 (EE), KayPaulus\_12 (EE), Kevanna\_12 (EE), KillerTomato\_12 (EE), Kojax4\_12 (EE), KyriosFaba\_12 (EE), LaviMo\_12 (EE), Leafy\_12 (EE), LemonPepper\_12 (EE), LionelHutz\_12 (EE), Livingwater\_12 (EE), Loca\_12 (EE), Lola20\_12 (EE), Lunatic\_12 (EE), Luxx\_12 (EE), Madebyisha\_14 (EE), Majesty\_12 (EE), ManAs\_12 (EE), Maneater\_12 (EE), MasterPitts\_12 (EE), McShie\_12 (EE), MelBee03\_12 (EE), Miaurora\_12 (EE), Minima\_12 (EE), MirimarMandM\_12 (EE), MrGreen\_12 (EE), Myram\_12 (EE), Naby\_12 (EE), Namsahir\_12 (EE), NeumannU\_12 (EE), Niffler\_12 (EE), Nobel\_12 (EE), Noelani\_12 (EE), Octopus\_12 (EE), Otwor\_12 (EE), Owens\_12 (EE), PaoPu\_12 (EE), Picnic\_12 (EE), PoRanda\_12 (EE), Pondwater\_12 (EE),



Publix\_12 (EE), Puddles3\_12 (EE), PuffyCat\_12 (EE), Quaker\_12 (EE), Rhogar\_12 (EE), Rhysand\_12 (EE), RoscoWindex\_12 (EE), Sage7\_12 (EE), SantasSleigh\_12 (EE), Sara\_12 (EE), Scamander\_12 (EE), Scrunchy\_12 (EE), SeaWolves\_12 (EE), Sippinontea\_12 (EE), Slentz\_12 (EE), Slizam\_12 (EE), Snuffles\_13 (EE), Stem\_12 (EE), TeddyBoy\_12 (EE), TimoTea\_12 (EE), TinyTruffula\_12 (EE), TomBrady12\_12 (EE), Trackstar\_11 (EE), Trireme\_12 (EE), Upsilon\_12 (EE), Vanisius\_12 (EE), VitulaEligans\_12 (EE), Witch\_12 (EE), Wolfpack\_12 (EE), Yasuo\_12 (EE), YertPhresh\_12 (EE), Yubaba\_12 (EE), Zahlia\_12 (EE),

Start 13:

- Found in 137 of 242 ( 56.6% ) of genes in pham
- Manual Annotations of this start: 3 of 229
- Called 2.2% of time when present
- Phage (with cluster) where this start called: Cazares\_12 (EE), Oaklynn\_12 (EE), Yami\_12 (EE),

### **Summary by clusters:**

There are 6 clusters represented in this pham: EH, EE, AK, EC, AZ1, AZ5,

Info for manual annotations of cluster AK:

- Start number 5 was manually annotated 83 times for cluster AK.

Info for manual annotations of cluster AZ1:

- Start number 6 was manually annotated 1 time for cluster AZ1.

Info for manual annotations of cluster AZ5:

- Start number 6 was manually annotated 10 times for cluster AZ5.

Info for manual annotations of cluster EC:

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

Info for manual annotations of cluster EE:

- Start number 11 was manually annotated 123 times for cluster EE.
- Start number 13 was manually annotated 3 times for cluster EE.

Info for manual annotations of cluster EH:

- Start number 4 was manually annotated 1 time for cluster EH.
- Start number 6 was manually annotated 7 times for cluster EH.

### **Gene Information:**

Gene: Albanese\_18 Start: 12660, Stop: 15221, Start Num: 5

Candidate Starts for Albanese\_18:

(3, 12639), (Start: 5 @12660 has 83 MA's), (15, 12750), (18, 12789), (21, 12825), (30, 12885), (34, 12933), (35, 12948), (47, 13116), (50, 13161), (52, 13212), (53, 13215), (62, 13299), (76, 13485), (81, 13521), (83, 13533), (91, 13575), (103, 13686), (127, 13884), (145, 13977), (149, 14001), (150, 14004), (161, 14082), (163, 14088), (169, 14115), (176, 14145), (187, 14208), (192, 14223), (194, 14232), (195, 14235), (198, 14244), (203, 14268), (206, 14280), (207, 14286), (211, 14301), (212, 14307), (213, 14310), (217, 14331), (219, 14346), (223, 14361), (228, 14379), (229, 14385), (232, 14400), (235, 14409), (236, 14418), (242, 14451), (243, 14454), (246, 14466), (248, 14472), (251,

14484), (262, 14550), (263, 14565), (269, 14595), (271, 14604), (290, 14715), (296, 14751), (299, 14772), (308, 14847), (309, 14850), (315, 14904), (318, 14943), (326, 15000), (328, 15024), (334, 15066), (338, 15093), (348, 15162),

Gene: Aledel\_14 Start: 9738, Stop: 12296, Start Num: 5

Candidate Starts for Aledel\_14:

(Start: 5 @9738 has 83 MA's), (7, 9747), (8, 9777), (18, 9867), (30, 9963), (33, 10008), (35, 10026), (47, 10194), (52, 10290), (53, 10293), (54, 10308), (64, 10395), (81, 10599), (82, 10602), (95, 10686), (133, 10992), (145, 11052), (148, 11070), (149, 11076), (154, 11109), (155, 11121), (161, 11157), (167, 11184), (173, 11208), (175, 11214), (184, 11271), (191, 11295), (193, 11304), (198, 11319), (203, 11343), (206, 11355), (211, 11376), (212, 11382), (216, 11403), (221, 11427), (223, 11436), (228, 11454), (232, 11475), (234, 11481), (236, 11493), (242, 11526), (243, 11529), (246, 11541), (250, 11556), (251, 11559), (264, 11646), (283, 11736), (284, 11739), (290, 11790), (299, 11847), (300, 11856), (303, 11868), (308, 11922), (309, 11925), (315, 11979), (318, 12018), (325, 12066), (326, 12075), (328, 12099), (330, 12111), (345, 12207), (348, 12237),

Gene: Alucard\_12 Start: 7541, Stop: 9646, Start Num: 11

Candidate Starts for Alucard\_12:

(Start: 11 @7541 has 123 MA's), (Start: 13 @7562 has 3 MA's), (32, 7739), (34, 7748), (37, 7772), (39, 7844), (42, 7868), (43, 7874), (51, 8024), (54, 8045), (55, 8057), (57, 8066), (72, 8273), (75, 8291), (104, 8378), (125, 8447), (129, 8459), (140, 8507), (150, 8537), (155, 8552), (170, 8588), (176, 8615), (182, 8636), (188, 8660), (195, 8684), (197, 8690), (203, 8717), (211, 8750), (218, 8789), (225, 8816), (230, 8837), (233, 8852), (245, 8879), (246, 8882), (253, 8903), (255, 8915), (256, 8921), (263, 8969), (270, 9005), (281, 9053), (286, 9080), (287, 9101), (297, 9164), (301, 9188), (307, 9245), (320, 9350), (322, 9371), (324, 9383), (328, 9425), (332, 9446), (334, 9467), (350, 9596),

Gene: Anseraureola\_12 Start: 7563, Stop: 9671, Start Num: 11

Candidate Starts for Anseraureola\_12:

(Start: 11 @7563 has 123 MA's), (Start: 13 @7584 has 3 MA's), (32, 7761), (34, 7770), (37, 7794), (39, 7866), (42, 7890), (43, 7896), (49, 7989), (51, 8046), (54, 8067), (55, 8079), (57, 8088), (72, 8295), (75, 8313), (104, 8400), (125, 8469), (129, 8481), (140, 8529), (150, 8559), (155, 8574), (170, 8610), (176, 8637), (183, 8661), (188, 8682), (195, 8706), (197, 8712), (203, 8739), (211, 8772), (218, 8811), (225, 8838), (230, 8859), (233, 8874), (245, 8901), (246, 8904), (255, 8937), (256, 8943), (263, 8991), (270, 9027), (281, 9075), (286, 9102), (287, 9123), (297, 9186), (301, 9210), (307, 9267), (320, 9372), (322, 9393), (324, 9405), (328, 9447), (334, 9489), (350, 9621),

Gene: AppleCider\_18 Start: 12612, Stop: 15167, Start Num: 5

Candidate Starts for AppleCider\_18:

(3, 12591), (Start: 5 @12612 has 83 MA's), (10, 12660), (18, 12741), (20, 12765), (30, 12837), (34, 12885), (35, 12900), (36, 12906), (47, 13068), (50, 13113), (52, 13164), (53, 13167), (56, 13197), (62, 13251), (67, 13335), (77, 13458), (89, 13518), (92, 13536), (94, 13551), (100, 13602), (127, 13833), (142, 13902), (145, 13926), (148, 13944), (149, 13950), (156, 14004), (158, 14016), (163, 14037), (168, 14061), (185, 14148), (192, 14172), (193, 14178), (194, 14181), (198, 14193), (202, 14214), (203, 14217), (204, 14223), (206, 14229), (210, 14247), (211, 14250), (212, 14256), (217, 14280), (221, 14301), (223, 14310), (228, 14328), (232, 14349), (235, 14358), (236, 14367), (242, 14400), (243, 14403), (245, 14412), (246, 14415), (257, 14466), (290, 14664), (292, 14676), (295, 14697), (296, 14700), (308, 14796), (309, 14799), (315, 14853), (318, 14892), (326, 14949), (331, 14991), (338, 15039), (345, 15081), (348, 15111),

Gene: Aries55\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Aries55\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302),

(104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: Ashes\_16 Start: 10335, Stop: 12755, Start Num: 6

Candidate Starts for Ashes\_16:

(Start: 6 @10335 has 19 MA's), (17, 10422), (26, 10527), (29, 10539), (34, 10599), (41, 10710), (48, 10791), (57, 10917), (60, 10932), (65, 10986), (77, 11160), (95, 11244), (98, 11265), (102, 11307), (119, 11433), (123, 11454), (128, 11487), (140, 11544), (146, 11586), (150, 11601), (157, 11652), (169, 11688), (171, 11694), (194, 11796), (200, 11817), (209, 11859), (222, 11919), (223, 11925), (235, 11973), (260, 12069), (292, 12246), (294, 12258), (302, 12309), (311, 12390), (318, 12459), (323, 12495), (333, 12576), (336, 12591), (346, 12663), (349, 12687),

Gene: Astro16\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for Astro16\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: AustinPowers\_14 Start: 9739, Stop: 12297, Start Num: 5

Candidate Starts for AustinPowers\_14:

(Start: 5 @9739 has 83 MA's), (7, 9748), (8, 9778), (18, 9868), (30, 9964), (33, 10009), (35, 10027), (47, 10195), (52, 10291), (53, 10294), (54, 10309), (64, 10396), (67, 10462), (81, 10600), (82, 10603), (95, 10687), (133, 10993), (145, 11053), (148, 11071), (149, 11077), (154, 11110), (155, 11122), (161, 11158), (167, 11185), (173, 11209), (175, 11215), (184, 11272), (191, 11296), (193, 11305), (198, 11320), (203, 11344), (206, 11356), (211, 11377), (212, 11383), (216, 11404), (223, 11437), (228, 11455), (232, 11476), (234, 11482), (236, 11494), (242, 11527), (243, 11530), (246, 11542), (250, 11557), (251, 11560), (264, 11647), (283, 11737), (284, 11740), (290, 11791), (295, 11824), (299, 11848), (300, 11857), (308, 11923), (309, 11926), (315, 11980), (318, 12019), (325, 12067), (326, 12076), (328, 12100), (330, 12112), (345, 12208), (348, 12238),

Gene: Avvas\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Avvas\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: Azizam\_12 Start: 7534, Stop: 9639, Start Num: 11

Candidate Starts for Azizam\_12:

(Start: 11 @7534 has 123 MA's), (Start: 13 @7555 has 3 MA's), (32, 7732), (34, 7741), (37, 7765), (39, 7837), (42, 7861), (43, 7867), (51, 8017), (54, 8038), (55, 8050), (57, 8059), (72, 8266), (75, 8284), (104, 8371), (125, 8440), (129, 8452), (140, 8500), (150, 8530), (155, 8545), (176, 8608), (182, 8629), (183, 8632), (197, 8683), (203, 8710), (211, 8743), (218, 8782), (225, 8809), (230, 8830), (233, 8845),

(245, 8872), (253, 8896), (255, 8908), (256, 8914), (263, 8962), (281, 9046), (286, 9073), (287, 9094), (297, 9157), (301, 9181), (305, 9205), (306, 9226), (320, 9343), (322, 9364), (324, 9376), (328, 9418), (332, 9439), (334, 9460), (350, 9589),

Gene: Aztec\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Aztec\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Baine\_12 Start: 7538, Stop: 9646, Start Num: 11

Candidate Starts for Baine\_12:

(Start: 11 @7538 has 123 MA's), (Start: 13 @7559 has 3 MA's), (32, 7736), (34, 7745), (37, 7769), (39, 7841), (42, 7865), (43, 7871), (49, 7964), (51, 8021), (54, 8042), (55, 8054), (57, 8063), (72, 8270), (75, 8288), (104, 8375), (125, 8444), (129, 8456), (140, 8504), (150, 8534), (155, 8549), (170, 8585), (176, 8612), (188, 8657), (195, 8681), (197, 8687), (203, 8714), (211, 8747), (218, 8786), (225, 8813), (230, 8834), (233, 8849), (245, 8876), (246, 8879), (255, 8912), (256, 8918), (263, 8966), (270, 9002), (281, 9050), (286, 9077), (287, 9098), (297, 9161), (301, 9185), (307, 9242), (320, 9347), (322, 9368), (324, 9380), (328, 9422), (334, 9464), (350, 9596),

Gene: BarBear\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for BarBear\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Barnstormer\_14 Start: 9927, Stop: 12275, Start Num: 6

Candidate Starts for Barnstormer\_14:

(Start: 6 @9927 has 19 MA's), (25, 10110), (37, 10206), (44, 10314), (48, 10374), (65, 10569), (68, 10632), (74, 10716), (75, 10728), (77, 10731), (90, 10782), (98, 10833), (108, 10920), (116, 10980), (121, 11004), (135, 11085), (149, 11145), (162, 11166), (176, 11226), (182, 11247), (184, 11256), (199, 11307), (217, 11394), (218, 11403), (247, 11499), (249, 11505), (256, 11538), (273, 11634), (281, 11673), (301, 11811), (308, 11874), (321, 11985), (334, 12090), (338, 12126),

Gene: Beethoven\_18 Start: 12567, Stop: 15128, Start Num: 5

Candidate Starts for Beethoven\_18:

(3, 12546), (Start: 5 @12567 has 83 MA's), (10, 12615), (14, 12648), (18, 12696), (20, 12720), (21, 12732), (30, 12792), (34, 12840), (35, 12855), (36, 12861), (45, 12981), (47, 13023), (52, 13119), (53, 13122), (56, 13152), (62, 13206), (71, 13347), (72, 13368), (76, 13392), (77, 13413), (79, 13422), (89, 13473), (92, 13491), (111, 13677), (133, 13821), (141, 13854), (145, 13881), (148, 13899), (149, 13905), (152, 13929), (154, 13938), (161, 13986), (167, 14013), (175, 14043), (176, 14049), (184, 14100), (188, 14115), (192, 14127), (193, 14133), (194, 14136), (197, 14145), (203, 14172), (206, 14184), (208, 14193), (211, 14205), (212, 14211), (216, 14232), (221, 14256), (223, 14265), (231, 14301), (232, 14304), (236, 14322), (242, 14355), (243, 14358), (245, 14367), (246, 14370), (250, 14385), (264, 14475), (290, 14619), (296, 14655), (308, 14751), (309, 14754), (315, 14808), (318,

14847), (325, 14895), (326, 14904), (328, 14928), (331, 14946), (338, 14997), (342, 15021), (345, 15039), (348, 15069),

Gene: Belthelas\_12 Start: 7590, Stop: 9695, Start Num: 11

Candidate Starts for Belthelas\_12:

(Start: 11 @7590 has 123 MA's), (Start: 13 @7611 has 3 MA's), (32, 7788), (34, 7797), (37, 7821), (39, 7893), (42, 7917), (43, 7923), (49, 8016), (51, 8073), (54, 8094), (55, 8106), (57, 8115), (72, 8322), (75, 8340), (104, 8427), (125, 8496), (129, 8508), (140, 8556), (150, 8586), (155, 8601), (170, 8637), (176, 8664), (183, 8688), (188, 8709), (195, 8733), (197, 8739), (203, 8766), (211, 8799), (218, 8838), (225, 8865), (230, 8886), (233, 8901), (245, 8928), (246, 8931), (253, 8952), (255, 8964), (256, 8970), (263, 9018), (270, 9054), (281, 9102), (286, 9129), (287, 9150), (297, 9213), (301, 9237), (307, 9294), (320, 9399), (322, 9420), (324, 9432), (328, 9474), (332, 9495), (334, 9516), (350, 9645),

Gene: Bennie\_14 Start: 9720, Stop: 12287, Start Num: 5

Candidate Starts for Bennie\_14:

(3, 9699), (Start: 5 @9720 has 83 MA's), (10, 9768), (18, 9849), (20, 9873), (30, 9945), (34, 9993), (35, 10008), (36, 10014), (47, 10176), (51, 10269), (52, 10272), (53, 10275), (56, 10305), (63, 10362), (71, 10500), (72, 10521), (77, 10566), (83, 10593), (89, 10626), (92, 10644), (98, 10686), (103, 10743), (141, 11007), (145, 11034), (148, 11052), (149, 11058), (152, 11082), (155, 11103), (161, 11139), (167, 11166), (175, 11196), (176, 11202), (184, 11253), (193, 11286), (203, 11325), (204, 11331), (206, 11337), (208, 11346), (211, 11358), (212, 11364), (217, 11388), (221, 11409), (223, 11418), (232, 11457), (236, 11475), (242, 11508), (243, 11511), (246, 11523), (250, 11538), (259, 11589), (263, 11622), (266, 11640), (272, 11664), (281, 11706), (290, 11772), (292, 11784), (299, 11829), (308, 11904), (309, 11907), (315, 11961), (318, 12000), (322, 12027), (326, 12057), (327, 12069), (328, 12081), (329, 12090), (338, 12156), (345, 12198), (348, 12228),

Gene: BigMack\_14 Start: 9716, Stop: 12277, Start Num: 5

Candidate Starts for BigMack\_14:

(3, 9695), (Start: 5 @9716 has 83 MA's), (10, 9764), (18, 9845), (20, 9869), (30, 9941), (34, 9989), (35, 10004), (36, 10010), (45, 10130), (47, 10172), (51, 10265), (52, 10268), (53, 10271), (56, 10301), (71, 10496), (72, 10517), (77, 10562), (89, 10622), (92, 10640), (120, 10892), (141, 11003), (145, 11030), (148, 11048), (149, 11054), (152, 11078), (154, 11087), (161, 11135), (167, 11162), (168, 11165), (175, 11192), (176, 11198), (180, 11210), (184, 11249), (188, 11264), (192, 11276), (193, 11282), (194, 11285), (197, 11294), (203, 11321), (204, 11327), (206, 11333), (208, 11342), (211, 11354), (212, 11360), (213, 11363), (223, 11414), (231, 11450), (232, 11453), (242, 11504), (243, 11507), (245, 11516), (246, 11519), (250, 11534), (263, 11618), (285, 11726), (290, 11768), (308, 11900), (309, 11903), (315, 11957), (318, 11996), (325, 12044), (326, 12053), (328, 12077), (338, 12146), (339, 12152), (348, 12218),

Gene: BinkBonk\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for BinkBonk\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Bintii\_12 Start: 7572, Stop: 9677, Start Num: 11

Candidate Starts for Bintii\_12:

(1, 7476), (Start: 11 @7572 has 123 MA's), (Start: 13 @7593 has 3 MA's), (32, 7770), (34, 7779), (37, 7803), (39, 7875), (42, 7899), (49, 7998), (54, 8076), (55, 8088), (57, 8097), (72, 8304), (75, 8322),

(104, 8409), (125, 8478), (129, 8490), (140, 8538), (150, 8568), (155, 8583), (174, 8637), (182, 8667), (183, 8670), (188, 8691), (197, 8721), (203, 8748), (211, 8781), (218, 8820), (225, 8847), (226, 8853), (230, 8868), (233, 8883), (245, 8910), (246, 8913), (253, 8934), (255, 8946), (256, 8952), (263, 9000), (270, 9036), (281, 9084), (286, 9111), (287, 9132), (297, 9195), (301, 9219), (307, 9276), (320, 9381), (322, 9402), (324, 9414), (328, 9456), (332, 9477), (334, 9498),

Gene: Biscayne\_12 Start: 7608, Stop: 9713, Start Num: 11

Candidate Starts for Biscayne\_12:

(Start: 11 @7608 has 123 MA's), (Start: 13 @7629 has 3 MA's), (32, 7806), (34, 7815), (37, 7839), (39, 7911), (42, 7935), (43, 7941), (51, 8091), (54, 8112), (55, 8124), (57, 8133), (72, 8340), (75, 8358), (104, 8445), (125, 8514), (129, 8526), (140, 8574), (150, 8604), (155, 8619), (170, 8655), (176, 8682), (182, 8703), (188, 8727), (195, 8751), (197, 8757), (203, 8784), (211, 8817), (218, 8856), (225, 8883), (230, 8904), (233, 8919), (245, 8946), (246, 8949), (253, 8970), (255, 8982), (256, 8988), (263, 9036), (281, 9120), (286, 9147), (287, 9168), (297, 9231), (301, 9255), (307, 9312), (320, 9417), (322, 9438), (324, 9450), (328, 9492), (332, 9513), (334, 9534), (350, 9663),

Gene: Bodacious\_14 Start: 9717, Stop: 12278, Start Num: 5

Candidate Starts for Bodacious\_14:

(3, 9696), (Start: 5 @9717 has 83 MA's), (10, 9765), (18, 9846), (20, 9870), (30, 9942), (34, 9990), (35, 10005), (36, 10011), (45, 10131), (47, 10173), (52, 10269), (53, 10272), (56, 10302), (67, 10440), (72, 10518), (77, 10563), (79, 10572), (89, 10623), (92, 10641), (93, 10653), (97, 10677), (120, 10893), (137, 10983), (141, 11004), (145, 11031), (148, 11049), (149, 11055), (152, 11079), (154, 11088), (161, 11136), (167, 11163), (175, 11193), (184, 11250), (188, 11265), (192, 11277), (193, 11283), (194, 11286), (197, 11295), (203, 11322), (206, 11334), (208, 11343), (211, 11355), (212, 11361), (217, 11385), (221, 11406), (223, 11415), (227, 11430), (232, 11454), (242, 11505), (243, 11508), (246, 11520), (260, 11595), (264, 11625), (272, 11661), (290, 11769), (292, 11781), (296, 11805), (308, 11901), (309, 11904), (313, 11937), (315, 11958), (318, 11997), (321, 12015), (325, 12045), (326, 12054), (328, 12078), (339, 12153), (348, 12219),

Gene: Bodhi17\_12 Start: 7533, Stop: 9638, Start Num: 11

Candidate Starts for Bodhi17\_12:

(Start: 11 @7533 has 123 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (42, 7860), (43, 7866), (49, 7959), (51, 8016), (54, 8037), (55, 8049), (57, 8058), (72, 8265), (75, 8283), (104, 8370), (125, 8439), (129, 8451), (140, 8499), (150, 8529), (155, 8544), (170, 8580), (176, 8607), (183, 8631), (188, 8652), (195, 8676), (197, 8682), (203, 8709), (211, 8742), (218, 8781), (225, 8808), (230, 8829), (233, 8844), (245, 8871), (246, 8874), (255, 8907), (256, 8913), (263, 8961), (270, 8997), (281, 9045), (286, 9072), (287, 9093), (297, 9156), (301, 9180), (307, 9237), (320, 9342), (322, 9363), (324, 9375), (328, 9417), (332, 9438), (334, 9459), (350, 9588),

Gene: BonaeVitae\_12 Start: 7240, Stop: 9339, Start Num: 11

Candidate Starts for BonaeVitae\_12:

(Start: 11 @7240 has 123 MA's), (12, 7255), (Start: 13 @7261 has 3 MA's), (19, 7321), (26, 7375), (32, 7438), (34, 7447), (37, 7471), (39, 7543), (42, 7567), (49, 7666), (51, 7723), (55, 7756), (57, 7765), (87, 8032), (104, 8077), (126, 8149), (134, 8179), (150, 8236), (155, 8251), (178, 8320), (190, 8365), (195, 8383), (197, 8389), (211, 8449), (212, 8455), (215, 8470), (218, 8488), (225, 8515), (240, 8557), (253, 8602), (256, 8620), (261, 8647), (278, 8734), (281, 8752), (286, 8779), (291, 8821), (297, 8863), (298, 8866), (301, 8887), (314, 8998), (322, 9070), (324, 9082), (327, 9112), (328, 9124), (332, 9145), (347, 9253), (350, 9289),

Gene: BoomRoasted\_12 Start: 7587, Stop: 9692, Start Num: 11

Candidate Starts for BoomRoasted\_12:

(Start: 11 @7587 has 123 MA's), (Start: 13 @7608 has 3 MA's), (32, 7785), (34, 7794), (37, 7818), (39, 7890), (42, 7914), (43, 7920), (49, 8013), (51, 8070), (54, 8091), (55, 8103), (57, 8112), (72, 8319), (75,

8337), (104, 8424), (125, 8493), (129, 8505), (140, 8553), (150, 8583), (155, 8598), (170, 8634), (176, 8661), (183, 8685), (188, 8706), (195, 8730), (197, 8736), (203, 8763), (211, 8796), (218, 8835), (225, 8862), (230, 8883), (233, 8898), (245, 8925), (246, 8928), (253, 8949), (255, 8961), (256, 8967), (263, 9015), (270, 9051), (281, 9099), (286, 9126), (287, 9147), (297, 9210), (301, 9234), (307, 9291), (320, 9396), (322, 9417), (324, 9429), (328, 9471), (332, 9492), (334, 9513), (350, 9642),

Gene: Bradley2\_12 Start: 7539, Stop: 9644, Start Num: 11

Candidate Starts for Bradley2\_12:

(Start: 11 @7539 has 123 MA's), (Start: 13 @7560 has 3 MA's), (32, 7737), (34, 7746), (37, 7770), (39, 7842), (42, 7866), (43, 7872), (51, 8022), (54, 8043), (55, 8055), (57, 8064), (72, 8271), (75, 8289), (104, 8376), (125, 8445), (129, 8457), (140, 8505), (150, 8535), (155, 8550), (170, 8586), (176, 8613), (182, 8634), (188, 8658), (195, 8682), (197, 8688), (203, 8715), (211, 8748), (218, 8787), (225, 8814), (230, 8835), (233, 8850), (245, 8877), (246, 8880), (253, 8901), (255, 8913), (256, 8919), (263, 8967), (270, 9003), (281, 9051), (286, 9078), (287, 9099), (297, 9162), (301, 9186), (307, 9243), (320, 9348), (322, 9369), (324, 9381), (328, 9423), (332, 9444), (334, 9465), (350, 9594),

Gene: Bri160\_12 Start: 7586, Stop: 9691, Start Num: 11

Candidate Starts for Bri160\_12:

(Start: 11 @7586 has 123 MA's), (Start: 13 @7607 has 3 MA's), (32, 7784), (34, 7793), (37, 7817), (39, 7889), (42, 7913), (43, 7919), (49, 8012), (51, 8069), (54, 8090), (55, 8102), (57, 8111), (72, 8318), (75, 8336), (104, 8423), (125, 8492), (129, 8504), (140, 8552), (150, 8582), (155, 8597), (170, 8633), (176, 8660), (183, 8684), (188, 8705), (195, 8729), (197, 8735), (203, 8762), (211, 8795), (218, 8834), (225, 8861), (230, 8882), (233, 8897), (245, 8924), (246, 8927), (253, 8948), (255, 8960), (256, 8966), (263, 9014), (270, 9050), (281, 9098), (286, 9125), (287, 9146), (297, 9209), (301, 9233), (307, 9290), (320, 9395), (322, 9416), (324, 9428), (328, 9470), (332, 9491), (334, 9512), (350, 9641),

Gene: BrokMonster\_12 Start: 7529, Stop: 9634, Start Num: 11

Candidate Starts for BrokMonster\_12:

(Start: 11 @7529 has 123 MA's), (Start: 13 @7550 has 3 MA's), (32, 7727), (34, 7736), (37, 7760), (39, 7832), (42, 7856), (43, 7862), (49, 7955), (51, 8012), (54, 8033), (55, 8045), (57, 8054), (72, 8261), (75, 8279), (104, 8366), (125, 8435), (129, 8447), (140, 8495), (150, 8525), (155, 8540), (176, 8603), (182, 8624), (183, 8627), (197, 8678), (203, 8705), (211, 8738), (218, 8777), (225, 8804), (230, 8825), (233, 8840), (245, 8867), (253, 8891), (255, 8903), (256, 8909), (263, 8957), (281, 9041), (286, 9068), (287, 9089), (297, 9152), (301, 9176), (307, 9233), (320, 9338), (322, 9359), (324, 9371), (328, 9413), (332, 9434), (334, 9455), (350, 9584),

Gene: BrotherBLo\_18 Start: 12573, Stop: 15134, Start Num: 5

Candidate Starts for BrotherBLo\_18:

(3, 12552), (Start: 5 @12573 has 83 MA's), (10, 12621), (14, 12654), (18, 12702), (20, 12726), (21, 12738), (30, 12798), (34, 12846), (35, 12861), (36, 12867), (45, 12987), (47, 13029), (52, 13125), (53, 13128), (56, 13158), (62, 13212), (71, 13353), (72, 13374), (76, 13398), (77, 13419), (79, 13428), (89, 13479), (92, 13497), (111, 13683), (133, 13827), (141, 13860), (145, 13887), (148, 13905), (149, 13911), (152, 13935), (154, 13944), (161, 13992), (167, 14019), (168, 14022), (173, 14043), (175, 14049), (176, 14055), (184, 14106), (188, 14121), (192, 14133), (193, 14139), (194, 14142), (197, 14151), (203, 14178), (206, 14190), (208, 14199), (211, 14211), (212, 14217), (216, 14238), (221, 14262), (223, 14271), (232, 14310), (236, 14328), (242, 14361), (243, 14364), (245, 14373), (246, 14376), (250, 14391), (264, 14481), (272, 14517), (290, 14625), (296, 14661), (299, 14682), (308, 14757), (309, 14760), (315, 14814), (318, 14853), (325, 14901), (326, 14910), (328, 14934), (331, 14952), (338, 15003), (342, 15027), (345, 15045), (348, 15075),

Gene: Bullzi2019\_12 Start: 7561, Stop: 9666, Start Num: 11

Candidate Starts for Bullzi2019\_12:



(Start: 11 @7561 has 123 MA's), (Start: 13 @7582 has 3 MA's), (32, 7759), (34, 7768), (37, 7792), (39, 7864), (42, 7888), (49, 7987), (54, 8065), (55, 8077), (57, 8086), (72, 8293), (75, 8311), (104, 8398), (125, 8467), (129, 8479), (140, 8527), (150, 8557), (155, 8572), (174, 8626), (182, 8656), (183, 8659), (188, 8680), (197, 8710), (203, 8737), (211, 8770), (218, 8809), (225, 8836), (226, 8842), (230, 8857), (233, 8872), (245, 8899), (246, 8902), (253, 8923), (255, 8935), (256, 8941), (263, 8989), (270, 9025), (281, 9073), (286, 9100), (287, 9121), (297, 9184), (301, 9208), (307, 9265), (320, 9370), (322, 9391), (328, 9445), (332, 9466), (334, 9487),

Gene: Burgy\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Burgy\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: BurtonThePup\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for BurtonThePup\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: CallieOMalley\_18 Start: 12612, Stop: 15167, Start Num: 5

Candidate Starts for CallieOMalley\_18:

(3, 12591), (Start: 5 @12612 has 83 MA's), (10, 12660), (18, 12741), (20, 12765), (23, 12795), (30, 12837), (35, 12900), (36, 12906), (47, 13068), (52, 13164), (53, 13167), (56, 13197), (67, 13335), (77, 13458), (89, 13518), (92, 13536), (94, 13551), (100, 13602), (127, 13833), (142, 13902), (145, 13926), (148, 13944), (149, 13950), (156, 14004), (158, 14016), (163, 14037), (168, 14061), (185, 14148), (192, 14172), (193, 14178), (194, 14181), (198, 14193), (202, 14214), (203, 14217), (204, 14223), (206, 14229), (208, 14238), (210, 14247), (211, 14250), (212, 14256), (217, 14280), (221, 14301), (223, 14310), (228, 14328), (232, 14349), (235, 14358), (236, 14367), (242, 14400), (243, 14403), (245, 14412), (246, 14415), (257, 14466), (272, 14556), (290, 14664), (292, 14676), (295, 14697), (296, 14700), (308, 14796), (309, 14799), (315, 14853), (318, 14892), (326, 14949), (331, 14991), (338, 15039), (345, 15081), (348, 15111),

Gene: Canowicakte\_18 Start: 12647, Stop: 15202, Start Num: 5

Candidate Starts for Canowicakte\_18:

(3, 12626), (Start: 5 @12647 has 83 MA's), (10, 12695), (18, 12776), (20, 12800), (30, 12872), (34, 12920), (35, 12935), (36, 12941), (47, 13103), (50, 13148), (52, 13199), (53, 13202), (56, 13232), (67, 13370), (77, 13493), (89, 13553), (92, 13571), (94, 13586), (100, 13637), (127, 13868), (142, 13937), (145, 13961), (148, 13979), (149, 13985), (156, 14039), (158, 14051), (163, 14072), (168, 14096), (185, 14183), (192, 14207), (193, 14213), (194, 14216), (198, 14228), (202, 14249), (203, 14252), (204, 14258), (206, 14264), (208, 14273), (210, 14282), (211, 14285), (212, 14291), (217, 14315), (221, 14336), (223, 14345), (228, 14363), (232, 14384), (235, 14393), (236, 14402), (242, 14435), (243, 14438), (245, 14447), (246, 14450), (257, 14501), (272, 14591), (290, 14699), (292, 14711), (295, 14732), (296, 14735), (308, 14831), (309, 14834), (315, 14888), (318, 14927), (326, 14984), (331, 15026), (338, 15074), (345, 15116), (348, 15146),

Gene: Cappuccino\_16 Start: 10243, Stop: 12663, Start Num: 6

Candidate Starts for Cappuccino\_16:

(Start: 6 @10243 has 19 MA's), (17, 10330), (20, 10387), (26, 10435), (29, 10447), (34, 10507), (41, 10618), (48, 10699), (57, 10825), (60, 10840), (65, 10894), (77, 11068), (95, 11152), (98, 11173), (99, 11194), (102, 11215), (109, 11266), (119, 11341), (123, 11362), (128, 11395), (140, 11452), (146, 11494), (150, 11509), (157, 11560), (169, 11596), (194, 11704), (200, 11725), (209, 11767), (212, 11779), (223, 11833), (235, 11881), (260, 11977), (288, 12133), (292, 12154), (294, 12166), (302, 12217), (318, 12367), (323, 12403), (327, 12436), (349, 12595),

Gene: Caron\_14 Start: 9969, Stop: 12317, Start Num: 6

Candidate Starts for Caron\_14:

(Start: 6 @9969 has 19 MA's), (25, 10152), (37, 10248), (44, 10356), (48, 10416), (65, 10611), (68, 10674), (74, 10758), (75, 10770), (77, 10773), (90, 10824), (98, 10875), (107, 10956), (116, 11022), (121, 11046), (135, 11127), (149, 11187), (162, 11208), (184, 11298), (199, 11349), (218, 11445), (247, 11541), (249, 11547), (252, 11559), (256, 11580), (274, 11682), (281, 11715), (287, 11763), (301, 11853), (308, 11916), (310, 11928), (321, 12027), (334, 12132), (338, 12168),

Gene: Carpal\_18 Start: 12574, Stop: 15135, Start Num: 5

Candidate Starts for Carpal\_18:

(3, 12553), (Start: 5 @12574 has 83 MA's), (10, 12622), (14, 12655), (18, 12703), (20, 12727), (21, 12739), (30, 12799), (34, 12847), (35, 12862), (36, 12868), (45, 12988), (47, 13030), (52, 13126), (53, 13129), (56, 13159), (62, 13213), (71, 13354), (72, 13375), (76, 13399), (77, 13420), (79, 13429), (89, 13480), (92, 13498), (111, 13684), (133, 13828), (141, 13861), (145, 13888), (148, 13906), (149, 13912), (152, 13936), (154, 13945), (161, 13993), (167, 14020), (168, 14023), (173, 14044), (176, 14056), (184, 14107), (188, 14122), (192, 14134), (194, 14143), (197, 14152), (203, 14179), (206, 14191), (208, 14200), (211, 14212), (212, 14218), (216, 14239), (221, 14263), (223, 14272), (232, 14311), (242, 14362), (243, 14365), (245, 14374), (246, 14377), (250, 14392), (264, 14482), (272, 14518), (290, 14626), (296, 14662), (308, 14758), (309, 14761), (315, 14815), (318, 14854), (325, 14902), (326, 14911), (328, 14935), (331, 14953), (338, 15004), (342, 15028), (345, 15046), (348, 15076),

Gene: Cayde6\_12 Start: 7538, Stop: 9646, Start Num: 11

Candidate Starts for Cayde6\_12:

(Start: 11 @7538 has 123 MA's), (Start: 13 @7559 has 3 MA's), (32, 7736), (34, 7745), (37, 7769), (39, 7841), (42, 7865), (43, 7871), (49, 7964), (51, 8021), (54, 8042), (55, 8054), (57, 8063), (72, 8270), (75, 8288), (104, 8375), (125, 8444), (129, 8456), (140, 8504), (150, 8534), (155, 8549), (170, 8585), (176, 8612), (188, 8657), (195, 8681), (197, 8687), (203, 8714), (211, 8747), (218, 8786), (225, 8813), (230, 8834), (233, 8849), (245, 8876), (246, 8879), (255, 8912), (256, 8918), (263, 8966), (270, 9002), (281, 9050), (286, 9077), (287, 9098), (297, 9161), (301, 9185), (307, 9242), (320, 9347), (322, 9368), (324, 9380), (328, 9422), (334, 9464), (350, 9596),

Gene: Cazares\_12 Start: 7552, Stop: 9636, Start Num: 13

Candidate Starts for Cazares\_12:

(Start: 11 @7531 has 123 MA's), (Start: 13 @7552 has 3 MA's), (32, 7729), (34, 7738), (37, 7762), (39, 7834), (42, 7858), (49, 7957), (51, 8014), (54, 8035), (55, 8047), (57, 8056), (72, 8263), (75, 8281), (104, 8368), (125, 8437), (129, 8449), (140, 8497), (150, 8527), (155, 8542), (182, 8626), (183, 8629), (188, 8650), (197, 8680), (203, 8707), (211, 8740), (218, 8779), (225, 8806), (226, 8812), (230, 8827), (233, 8842), (246, 8872), (253, 8893), (255, 8905), (256, 8911), (263, 8959), (270, 8995), (281, 9043), (286, 9070), (287, 9091), (297, 9154), (301, 9178), (307, 9235), (320, 9340), (322, 9361), (328, 9415), (332, 9436), (334, 9457),

Gene: Cen1621\_14 Start: 9057, Stop: 11342, Start Num: 6

Candidate Starts for Cen1621\_14:

(Start: 6 @9057 has 19 MA's), (21, 9216), (31, 9294), (37, 9336), (44, 9444), (47, 9495), (48, 9504), (51, 9588), (55, 9621), (61, 9645), (65, 9699), (68, 9762), (75, 9858), (77, 9861), (143, 10152), (147, 10173), (174, 10254), (188, 10308), (190, 10314), (201, 10353), (208, 10386), (226, 10470), (237, 10518), (250, 10578), (255, 10596), (261, 10629), (263, 10650), (268, 10677), (276, 10710), (281, 10734), (282, 10743), (297, 10845), (308, 10932), (319, 11028), (326, 11082), (327, 11094), (340, 11187),

Gene: Charbie\_12 Start: 7528, Stop: 9633, Start Num: 11

Candidate Starts for Charbie\_12:

(Start: 11 @7528 has 123 MA's), (Start: 13 @7549 has 3 MA's), (32, 7726), (34, 7735), (37, 7759), (39, 7831), (42, 7855), (43, 7861), (51, 8011), (54, 8032), (55, 8044), (57, 8053), (72, 8260), (75, 8278), (104, 8365), (125, 8434), (129, 8446), (140, 8494), (150, 8524), (155, 8539), (170, 8575), (176, 8602), (182, 8623), (188, 8647), (195, 8671), (197, 8677), (203, 8704), (211, 8737), (218, 8776), (225, 8803), (230, 8824), (233, 8839), (245, 8866), (246, 8869), (253, 8890), (255, 8902), (256, 8908), (263, 8956), (279, 9031), (281, 9040), (286, 9067), (287, 9088), (297, 9151), (301, 9175), (307, 9232), (320, 9337), (322, 9358), (324, 9370), (328, 9412), (332, 9433), (334, 9454),

Gene: Chatham\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Chatham\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Cheesecake\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Cheesecake\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: ChewChew\_14 Start: 9716, Stop: 12277, Start Num: 5

Candidate Starts for ChewChew\_14:

(3, 9695), (Start: 5 @9716 has 83 MA's), (10, 9764), (18, 9845), (20, 9869), (30, 9941), (34, 9989), (35, 10004), (36, 10010), (47, 10172), (52, 10268), (53, 10271), (56, 10301), (67, 10439), (72, 10517), (77, 10562), (79, 10571), (89, 10622), (92, 10640), (93, 10652), (97, 10676), (120, 10892), (137, 10982), (141, 11003), (145, 11030), (148, 11048), (149, 11054), (152, 11078), (154, 11087), (161, 11135), (167, 11162), (175, 11192), (184, 11249), (188, 11264), (192, 11276), (193, 11282), (194, 11285), (197, 11294), (203, 11321), (206, 11333), (208, 11342), (211, 11354), (212, 11360), (217, 11384), (221, 11405), (223, 11414), (227, 11429), (231, 11450), (232, 11453), (242, 11504), (243, 11507), (246, 11519), (260, 11594), (264, 11624), (272, 11660), (290, 11768), (292, 11780), (296, 11804), (308, 11900), (309, 11903), (313, 11936), (315, 11957), (318, 11996), (321, 12014), (325, 12044), (326, 12053), (328, 12077), (339, 12152), (348, 12218),

Gene: Cholula\_18 Start: 12619, Stop: 15180, Start Num: 5

Candidate Starts for Cholula\_18:

(3, 12598), (Start: 5 @12619 has 83 MA's), (10, 12667), (14, 12700), (18, 12748), (20, 12772), (21, 12784), (30, 12844), (34, 12892), (35, 12907), (36, 12913), (45, 13033), (47, 13075), (51, 13168), (52, 13171), (53, 13174), (56, 13204), (62, 13258), (71, 13399), (72, 13420), (76, 13444), (77, 13465), (79, 13474), (89, 13525), (92, 13543), (96, 13567), (111, 13729), (133, 13873), (141, 13906), (145, 13933), (148, 13951), (149, 13957), (152, 13981), (154, 13990), (161, 14038), (167, 14065), (173, 14089), (175, 14095), (176, 14101), (184, 14152), (188, 14167), (192, 14179), (193, 14185), (194, 14188), (197, 14197), (203, 14224), (206, 14236), (208, 14245), (211, 14257), (212, 14263), (216, 14284), (223, 14317), (232, 14356), (242, 14407), (243, 14410), (245, 14419), (246, 14422), (250, 14437), (263, 14521), (264, 14527), (272, 14563), (290, 14671), (292, 14683), (296, 14707), (308, 14803), (309, 14806), (315, 14860), (318, 14899), (325, 14947), (326, 14956), (328, 14980), (331, 14998), (338, 15049), (342, 15073), (345, 15091), (348, 15121),

Gene: Chridison\_14 Start: 9739, Stop: 12297, Start Num: 5

Candidate Starts for Chridison\_14:

(Start: 5 @9739 has 83 MA's), (7, 9748), (8, 9778), (18, 9868), (30, 9964), (33, 10009), (35, 10027), (47, 10195), (52, 10291), (53, 10294), (54, 10309), (64, 10396), (81, 10600), (82, 10603), (95, 10687), (133, 10993), (145, 11053), (148, 11071), (149, 11077), (154, 11110), (155, 11122), (161, 11158), (167, 11185), (173, 11209), (175, 11215), (184, 11272), (191, 11296), (193, 11305), (198, 11320), (203, 11344), (206, 11356), (211, 11377), (212, 11383), (216, 11404), (221, 11428), (223, 11437), (228, 11455), (232, 11476), (234, 11482), (236, 11494), (242, 11527), (243, 11530), (246, 11542), (250, 11557), (251, 11560), (264, 11647), (283, 11737), (284, 11740), (290, 11791), (299, 11848), (300, 11857), (303, 11869), (308, 11923), (309, 11926), (315, 11980), (318, 12019), (325, 12067), (326, 12076), (328, 12100), (330, 12112), (345, 12208), (348, 12238),

Gene: Christian\_14 Start: 9717, Stop: 12278, Start Num: 5

Candidate Starts for Christian\_14:

(3, 9696), (Start: 5 @9717 has 83 MA's), (10, 9765), (18, 9846), (20, 9870), (30, 9942), (34, 9990), (35, 10005), (36, 10011), (47, 10173), (52, 10269), (53, 10272), (56, 10302), (67, 10440), (72, 10518), (77, 10563), (79, 10572), (89, 10623), (92, 10641), (93, 10653), (97, 10677), (120, 10893), (137, 10983), (141, 11004), (145, 11031), (148, 11049), (149, 11055), (152, 11079), (154, 11088), (161, 11136), (167, 11163), (175, 11193), (184, 11250), (193, 11283), (197, 11295), (203, 11322), (204, 11328), (206, 11334), (208, 11343), (211, 11355), (212, 11361), (217, 11385), (221, 11406), (223, 11415), (227, 11430), (232, 11454), (242, 11505), (243, 11508), (246, 11520), (260, 11595), (264, 11625), (272, 11661), (290, 11769), (292, 11781), (296, 11805), (308, 11901), (309, 11904), (313, 11937), (315, 11958), (318, 11997), (321, 12015), (325, 12045), (326, 12054), (328, 12078), (339, 12153), (348, 12219),

Gene: Ciel\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for Ciel\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Clownery\_12 Start: 7648, Stop: 9753, Start Num: 11

Candidate Starts for Clownery\_12:

(Start: 11 @7648 has 123 MA's), (Start: 13 @7669 has 3 MA's), (32, 7846), (34, 7855), (37, 7879), (39, 7951), (42, 7975), (49, 8074), (51, 8131), (54, 8152), (55, 8164), (57, 8173), (72, 8380), (75, 8398), (104, 8485), (125, 8554), (129, 8566), (140, 8614), (150, 8644), (155, 8659), (182, 8743), (183, 8746), (188, 8767), (197, 8797), (203, 8824), (211, 8857), (218, 8896), (225, 8923), (226, 8929), (230, 8944),

(233, 8959), (246, 8989), (253, 9010), (255, 9022), (256, 9028), (263, 9076), (270, 9112), (281, 9160), (286, 9187), (287, 9208), (297, 9271), (301, 9295), (307, 9352), (320, 9457), (322, 9478), (328, 9532), (332, 9553), (334, 9574),

Gene: Concrete\_12 Start: 7587, Stop: 9692, Start Num: 11

Candidate Starts for Concrete\_12:

(Start: 11 @7587 has 123 MA's), (Start: 13 @7608 has 3 MA's), (32, 7785), (34, 7794), (37, 7818), (39, 7890), (42, 7914), (43, 7920), (49, 8013), (51, 8070), (54, 8091), (55, 8103), (57, 8112), (72, 8319), (75, 8337), (104, 8424), (125, 8493), (129, 8505), (140, 8553), (150, 8583), (155, 8598), (170, 8634), (176, 8661), (183, 8685), (188, 8706), (195, 8730), (197, 8736), (203, 8763), (211, 8796), (218, 8835), (225, 8862), (230, 8883), (233, 8898), (245, 8925), (246, 8928), (253, 8949), (255, 8961), (256, 8967), (263, 9015), (270, 9051), (281, 9099), (286, 9126), (287, 9147), (297, 9210), (301, 9234), (307, 9291), (320, 9396), (322, 9417), (324, 9429), (328, 9471), (332, 9492), (334, 9513), (350, 9642),

Gene: CristinaYang\_14 Start: 9717, Stop: 12278, Start Num: 5

Candidate Starts for CristinaYang\_14:

(3, 9696), (Start: 5 @9717 has 83 MA's), (10, 9765), (18, 9846), (20, 9870), (30, 9942), (34, 9990), (35, 10005), (36, 10011), (45, 10131), (47, 10173), (52, 10269), (53, 10272), (56, 10302), (67, 10440), (72, 10518), (77, 10563), (79, 10572), (89, 10623), (92, 10641), (93, 10653), (97, 10677), (120, 10893), (137, 10983), (141, 11004), (145, 11031), (148, 11049), (149, 11055), (152, 11079), (154, 11088), (161, 11136), (167, 11163), (175, 11193), (184, 11250), (188, 11265), (192, 11277), (193, 11283), (194, 11286), (197, 11295), (203, 11322), (206, 11334), (208, 11343), (211, 11355), (212, 11361), (217, 11385), (221, 11406), (223, 11415), (227, 11430), (232, 11454), (242, 11505), (243, 11508), (246, 11520), (260, 11595), (264, 11625), (272, 11661), (290, 11769), (292, 11781), (296, 11805), (308, 11901), (309, 11904), (313, 11937), (315, 11958), (318, 11997), (321, 12015), (325, 12045), (326, 12054), (328, 12078), (339, 12153), (348, 12219),

Gene: DaftyDuck\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for DaftyDuck\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472), (350, 9601),

Gene: Daiboju\_14 Start: 9744, Stop: 12302, Start Num: 5

Candidate Starts for Daiboju\_14:

(Start: 5 @9744 has 83 MA's), (7, 9753), (8, 9783), (18, 9873), (21, 9909), (34, 10017), (35, 10032), (47, 10200), (52, 10296), (76, 10569), (77, 10590), (84, 10620), (89, 10650), (100, 10737), (112, 10860), (122, 10935), (133, 10998), (141, 11031), (144, 11052), (145, 11058), (148, 11076), (149, 11082), (152, 11106), (158, 11148), (161, 11163), (163, 11169), (169, 11196), (182, 11247), (185, 11280), (187, 11289), (193, 11310), (197, 11322), (203, 11349), (206, 11361), (208, 11370), (211, 11382), (212, 11388), (213, 11391), (217, 11412), (223, 11442), (228, 11460), (232, 11481), (235, 11490), (236, 11499), (242, 11532), (243, 11535), (246, 11547), (250, 11562), (263, 11646), (264, 11652), (272, 11688), (284, 11745), (285, 11754), (290, 11796), (299, 11853), (308, 11928), (309, 11931), (312, 11961), (315, 11985), (321, 12042), (325, 12072), (326, 12081), (328, 12105), (330, 12117), (348, 12243),

Gene: Danimal\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Danimal\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Danno\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Danno\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: Dino\_18 Start: 12572, Stop: 15133, Start Num: 5

Candidate Starts for Dino\_18:

(3, 12551), (Start: 5 @12572 has 83 MA's), (10, 12620), (14, 12653), (18, 12701), (20, 12725), (21, 12737), (30, 12797), (34, 12845), (35, 12860), (36, 12866), (45, 12986), (47, 13028), (52, 13124), (53, 13127), (56, 13157), (62, 13211), (71, 13352), (72, 13373), (76, 13397), (77, 13418), (79, 13427), (89, 13478), (92, 13496), (111, 13682), (133, 13826), (141, 13859), (145, 13886), (148, 13904), (149, 13910), (152, 13934), (154, 13943), (161, 13991), (167, 14018), (168, 14021), (173, 14042), (176, 14054), (184, 14105), (188, 14120), (192, 14132), (194, 14141), (197, 14150), (203, 14177), (206, 14189), (208, 14198), (211, 14210), (212, 14216), (216, 14237), (221, 14261), (223, 14270), (232, 14309), (242, 14360), (243, 14363), (245, 14372), (246, 14375), (250, 14390), (264, 14480), (272, 14516), (290, 14624), (296, 14660), (308, 14756), (309, 14759), (315, 14813), (318, 14852), (325, 14900), (326, 14909), (328, 14933), (331, 14951), (338, 15002), (342, 15026), (345, 15044), (348, 15074),

Gene: DirtPie\_12 Start: 7639, Stop: 9744, Start Num: 11

Candidate Starts for DirtPie\_12:

(Start: 11 @7639 has 123 MA's), (Start: 13 @7660 has 3 MA's), (32, 7837), (34, 7846), (37, 7870), (39, 7942), (42, 7966), (43, 7972), (51, 8122), (54, 8143), (55, 8155), (57, 8164), (72, 8371), (75, 8389), (104, 8476), (125, 8545), (129, 8557), (140, 8605), (150, 8635), (155, 8650), (170, 8686), (176, 8713), (182, 8734), (188, 8758), (195, 8782), (197, 8788), (203, 8815), (211, 8848), (218, 8887), (225, 8914), (230, 8935), (233, 8950), (245, 8977), (246, 8980), (253, 9001), (255, 9013), (256, 9019), (263, 9067), (279, 9142), (281, 9151), (286, 9178), (287, 9199), (297, 9262), (301, 9286), (307, 9343), (320, 9448), (322, 9469), (324, 9481), (328, 9523), (332, 9544), (334, 9565), (350, 9694),

Gene: Dongwon\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Dongwon\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Donkey\_16 Start: 10243, Stop: 12663, Start Num: 6

Candidate Starts for Donkey\_16:

(Start: 6 @10243 has 19 MA's), (17, 10330), (20, 10387), (26, 10435), (29, 10447), (34, 10507), (41, 10618), (48, 10699), (57, 10825), (60, 10840), (65, 10894), (77, 11068), (95, 11152), (98, 11173), (99, 11194), (102, 11215), (109, 11266), (119, 11341), (123, 11362), (128, 11395), (140, 11452), (146, 11494), (150, 11509), (157, 11560), (169, 11596), (194, 11704), (200, 11725), (209, 11767), (212, 11779), (223, 11833), (235, 11881), (260, 11977), (288, 12133), (292, 12154), (294, 12166), (302, 12217), (318, 12367), (323, 12403), (333, 12484), (349, 12595),

Gene: Dooby\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Dooby\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Douggie\_12 Start: 7533, Stop: 9638, Start Num: 11

Candidate Starts for Douggie\_12:

(Start: 11 @7533 has 123 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (42, 7860), (43, 7866), (49, 7959), (51, 8016), (54, 8037), (55, 8049), (57, 8058), (72, 8265), (75, 8283), (104, 8370), (125, 8439), (129, 8451), (140, 8499), (150, 8529), (155, 8544), (170, 8580), (176, 8607), (183, 8631), (188, 8652), (195, 8676), (197, 8682), (203, 8709), (211, 8742), (218, 8781), (225, 8808), (230, 8829), (233, 8844), (245, 8871), (246, 8874), (255, 8907), (256, 8913), (263, 8961), (270, 8997), (281, 9045), (286, 9072), (287, 9093), (297, 9156), (301, 9180), (307, 9237), (320, 9342), (322, 9363), (324, 9375), (328, 9417), (332, 9438), (334, 9459), (350, 9588),

Gene: DrRobert\_14 Start: 9717, Stop: 12278, Start Num: 5

Candidate Starts for DrRobert\_14:

(3, 9696), (Start: 5 @9717 has 83 MA's), (10, 9765), (18, 9846), (20, 9870), (30, 9942), (34, 9990), (35, 10005), (36, 10011), (47, 10173), (52, 10269), (53, 10272), (56, 10302), (67, 10440), (72, 10518), (77, 10563), (79, 10572), (89, 10623), (92, 10641), (93, 10653), (97, 10677), (120, 10893), (137, 10983), (141, 11004), (145, 11031), (148, 11049), (152, 11079), (154, 11088), (161, 11136), (167, 11163), (175, 11193), (184, 11250), (188, 11265), (192, 11277), (193, 11283), (194, 11286), (197, 11295), (203, 11322), (206, 11334), (208, 11343), (211, 11355), (212, 11361), (217, 11385), (221, 11406), (223, 11415), (227, 11430), (232, 11454), (242, 11505), (243, 11508), (246, 11520), (260, 11595), (264, 11625), (272, 11661), (290, 11769), (292, 11781), (295, 11802), (296, 11805), (308, 11901), (309, 11904), (313, 11937), (315, 11958), (321, 12015), (325, 12045), (326, 12054), (328, 12078), (339, 12153), (348, 12219),

Gene: DreamTeam\_14 Start: 9784, Stop: 12330, Start Num: 5

Candidate Starts for DreamTeam\_14:

(3, 9763), (Start: 5 @9784 has 83 MA's), (10, 9832), (18, 9913), (23, 9967), (30, 10009), (34, 10057), (35, 10072), (36, 10078), (47, 10240), (50, 10285), (52, 10336), (53, 10339), (71, 10564), (72, 10585), (79, 10639), (83, 10657), (84, 10660), (89, 10690), (133, 11026), (144, 11080), (145, 11086), (148, 11104), (149, 11110), (155, 11155), (160, 11188), (161, 11191), (172, 11239), (173, 11242), (176, 11254), (179, 11263), (185, 11308), (187, 11317), (193, 11338), (197, 11350), (198, 11353), (203, 11377), (204, 11383), (206, 11389), (211, 11410), (212, 11416), (216, 11437), (221, 11461), (223, 11470), (228, 11488), (232, 11509), (234, 11515), (242, 11560), (243, 11563), (245, 11572), (246, 11575), (263, 11674), (264, 11680), (276, 11734), (290, 11824), (308, 11956), (309, 11959), (315, 12013), (318, 12052), (321, 12070), (325, 12100), (326, 12109), (331, 12151), (348, 12271),



Gene: ELee24\_11 Start: 7568, Stop: 9673, Start Num: 11

Candidate Starts for ELee24\_11:

(Start: 11 @7568 has 123 MA's), (12, 7583), (Start: 13 @7589 has 3 MA's), (19, 7649), (32, 7766), (34, 7775), (37, 7799), (39, 7871), (42, 7895), (49, 7994), (51, 8051), (54, 8072), (57, 8093), (72, 8300), (75, 8318), (104, 8405), (125, 8474), (129, 8486), (134, 8507), (139, 8525), (140, 8534), (155, 8579), (170, 8615), (182, 8663), (183, 8666), (197, 8717), (204, 8750), (211, 8777), (218, 8816), (225, 8843), (230, 8864), (233, 8879), (253, 8930), (255, 8942), (256, 8948), (258, 8960), (278, 9062), (279, 9071), (281, 9080), (286, 9107), (297, 9191), (301, 9215), (322, 9398), (324, 9410), (328, 9452), (332, 9473), (334, 9494), (350, 9623),

Gene: EdElric\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for EdElric\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Efeke\_13 Start: 7413, Stop: 9512, Start Num: 11

Candidate Starts for Efeke\_13:

(Start: 11 @7413 has 123 MA's), (28, 7557), (30, 7572), (31, 7602), (34, 7620), (37, 7644), (39, 7716), (42, 7740), (43, 7746), (49, 7839), (54, 7917), (55, 7929), (57, 7938), (72, 8145), (78, 8169), (80, 8178), (87, 8205), (104, 8250), (114, 8295), (163, 8430), (175, 8478), (178, 8490), (186, 8523), (195, 8556), (197, 8562), (201, 8577), (205, 8598), (218, 8661), (220, 8670), (226, 8694), (228, 8700), (230, 8709), (240, 8730), (245, 8751), (246, 8754), (253, 8775), (255, 8787), (256, 8793), (261, 8820), (263, 8841), (268, 8868), (278, 8907), (281, 8925), (286, 8952), (287, 8973), (297, 9036), (298, 9039), (301, 9060), (306, 9105), (314, 9171), (320, 9222), (322, 9243), (324, 9255), (328, 9297), (346, 9420), (347, 9426),

Gene: Eightball\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for Eightball\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Ekko14\_12 Start: 7529, Stop: 9634, Start Num: 11

Candidate Starts for Ekko14\_12:

(Start: 11 @7529 has 123 MA's), (Start: 13 @7550 has 3 MA's), (32, 7727), (34, 7736), (37, 7760), (39, 7832), (42, 7856), (49, 7955), (54, 8033), (55, 8045), (57, 8054), (72, 8261), (75, 8279), (104, 8366), (125, 8435), (129, 8447), (140, 8495), (150, 8525), (155, 8540), (182, 8624), (183, 8627), (188, 8648), (197, 8678), (203, 8705), (211, 8738), (218, 8777), (225, 8804), (226, 8810), (230, 8825), (233, 8840), (246, 8870), (253, 8891), (255, 8903), (256, 8909), (263, 8957), (270, 8993), (281, 9041), (286, 9068), (287, 9089), (297, 9152), (301, 9176), (307, 9233), (320, 9338), (322, 9359), (328, 9413), (332, 9434), (334, 9455),

Gene: Elspeth\_12 Start: 7529, Stop: 9634, Start Num: 11

Candidate Starts for Elspeth\_12:

(Start: 11 @7529 has 123 MA's), (Start: 13 @7550 has 3 MA's), (32, 7727), (34, 7736), (37, 7760), (39, 7832), (42, 7856), (49, 7955), (54, 8033), (55, 8045), (57, 8054), (72, 8261), (75, 8279), (104, 8366), (125, 8435), (129, 8447), (140, 8495), (150, 8525), (155, 8540), (182, 8624), (183, 8627), (188, 8648), (197, 8678), (203, 8705), (211, 8738), (218, 8777), (225, 8804), (226, 8810), (230, 8825), (233, 8840), (246, 8870), (253, 8891), (255, 8903), (256, 8909), (263, 8957), (270, 8993), (281, 9041), (286, 9068), (287, 9089), (297, 9152), (301, 9176), (307, 9233), (320, 9338), (322, 9359), (328, 9413), (332, 9434), (334, 9455),

Gene: Erin\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Erin\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: EstebanJulior\_14 Start: 9752, Stop: 12301, Start Num: 5

Candidate Starts for EstebanJulior\_14:

(2, 9722), (Start: 5 @9752 has 83 MA's), (18, 9881), (21, 9917), (34, 10025), (35, 10040), (46, 10187), (47, 10208), (52, 10304), (63, 10394), (69, 10487), (77, 10598), (89, 10658), (91, 10667), (124, 10940), (133, 10994), (141, 11027), (144, 11048), (145, 11054), (148, 11072), (161, 11159), (176, 11222), (185, 11276), (187, 11285), (193, 11306), (197, 11318), (198, 11321), (203, 11345), (204, 11351), (206, 11357), (208, 11366), (211, 11378), (212, 11384), (216, 11405), (223, 11438), (227, 11453), (228, 11456), (232, 11477), (234, 11483), (236, 11495), (242, 11528), (243, 11531), (245, 11540), (246, 11543), (250, 11558), (263, 11642), (271, 11681), (290, 11792), (292, 11804), (299, 11849), (308, 11924), (309, 11927), (315, 11981), (325, 12068), (326, 12077), (328, 12101), (330, 12113), (338, 12170), (339, 12176), (348, 12242), (351, 12284),

Gene: Eunoia\_14 Start: 9738, Stop: 12296, Start Num: 5

Candidate Starts for Eunoia\_14:

(Start: 5 @9738 has 83 MA's), (7, 9747), (8, 9777), (18, 9867), (30, 9963), (33, 10008), (35, 10026), (47, 10194), (52, 10290), (53, 10293), (54, 10308), (64, 10395), (81, 10599), (82, 10602), (95, 10686), (133, 10992), (145, 11052), (148, 11070), (149, 11076), (154, 11109), (155, 11121), (161, 11157), (167, 11184), (173, 11208), (175, 11214), (184, 11271), (191, 11295), (193, 11304), (198, 11319), (203, 11343), (206, 11355), (211, 11376), (212, 11382), (216, 11403), (221, 11427), (223, 11436), (228, 11454), (232, 11475), (234, 11481), (236, 11493), (242, 11526), (243, 11529), (246, 11541), (250, 11556), (251, 11559), (264, 11646), (283, 11736), (284, 11739), (290, 11790), (299, 11847), (300, 11856), (303, 11868), (308, 11922), (309, 11925), (315, 11979), (318, 12018), (325, 12066), (326, 12075), (328, 12099), (330, 12111), (345, 12207), (348, 12237),

Gene: Fluke\_18 Start: 12615, Stop: 15176, Start Num: 5

Candidate Starts for Fluke\_18:

(3, 12594), (Start: 5 @12615 has 83 MA's), (10, 12663), (14, 12696), (18, 12744), (20, 12768), (21, 12780), (30, 12840), (34, 12888), (35, 12903), (36, 12909), (45, 13029), (47, 13071), (52, 13167), (53, 13170), (56, 13200), (62, 13254), (71, 13395), (72, 13416), (76, 13440), (77, 13461), (79, 13470), (89, 13521), (92, 13539), (111, 13725), (133, 13869), (141, 13902), (145, 13929), (148, 13947), (149, 13953), (152, 13977), (154, 13986), (161, 14034), (167, 14061), (175, 14091), (176, 14097), (184, 14148), (188, 14163), (192, 14175), (193, 14181), (194, 14184), (197, 14193), (203, 14220), (206, 14232), (208, 14241), (211, 14253), (212, 14259), (216, 14280), (221, 14304), (223, 14313), (232, 14352), (236, 14370), (242, 14403), (243, 14406), (245, 14415), (246, 14418), (250, 14433), (264, 14523), (272, 14559), (290, 14667), (296, 14703), (308, 14799), (309, 14802), (315, 14856), (318,

14895), (325, 14943), (326, 14952), (328, 14976), (331, 14994), (338, 15045), (342, 15069), (345, 15087), (348, 15117),

Gene: Gabbspett\_12 Start: 7641, Stop: 9746, Start Num: 11

Candidate Starts for Gabbspett\_12:

(Start: 11 @7641 has 123 MA's), (Start: 13 @7662 has 3 MA's), (32, 7839), (34, 7848), (37, 7872), (39, 7944), (42, 7968), (43, 7974), (51, 8124), (54, 8145), (55, 8157), (57, 8166), (72, 8373), (75, 8391), (104, 8478), (125, 8547), (129, 8559), (140, 8607), (150, 8637), (155, 8652), (170, 8688), (176, 8715), (182, 8736), (188, 8760), (195, 8784), (197, 8790), (203, 8817), (211, 8850), (218, 8889), (225, 8916), (230, 8937), (233, 8952), (245, 8979), (246, 8982), (253, 9003), (255, 9015), (256, 9021), (263, 9069), (279, 9144), (281, 9153), (286, 9180), (287, 9201), (297, 9264), (301, 9288), (307, 9345), (320, 9450), (322, 9471), (324, 9483), (328, 9525), (332, 9546), (334, 9567),

Gene: Gambol\_16 Start: 10243, Stop: 12663, Start Num: 6

Candidate Starts for Gambol\_16:

(Start: 6 @10243 has 19 MA's), (17, 10330), (20, 10387), (26, 10435), (29, 10447), (34, 10507), (41, 10618), (48, 10699), (57, 10825), (60, 10840), (65, 10894), (77, 11068), (95, 11152), (98, 11173), (99, 11194), (102, 11215), (109, 11266), (119, 11341), (123, 11362), (128, 11395), (140, 11452), (146, 11494), (150, 11509), (157, 11560), (169, 11596), (194, 11704), (200, 11725), (209, 11767), (212, 11779), (223, 11833), (235, 11881), (260, 11977), (288, 12133), (292, 12154), (294, 12166), (302, 12217), (318, 12367), (323, 12403), (333, 12484), (349, 12595),

Gene: GardenState\_15 Start: 10196, Stop: 12547, Start Num: 6

Candidate Starts for GardenState\_15:

(Start: 6 @10196 has 19 MA's), (25, 10379), (44, 10595), (48, 10655), (51, 10739), (57, 10781), (65, 10850), (68, 10913), (75, 11009), (77, 11012), (90, 11063), (98, 11114), (110, 11228), (113, 11237), (118, 11276), (166, 11465), (187, 11549), (199, 11588), (203, 11609), (218, 11684), (249, 11786), (256, 11819), (277, 11933), (280, 11948), (281, 11954), (304, 12104), (307, 12149), (308, 12155), (321, 12266), (326, 12305), (334, 12371),

Gene: Gardevoir\_12 Start: 7574, Stop: 9679, Start Num: 11

Candidate Starts for Gardevoir\_12:

(Start: 11 @7574 has 123 MA's), (Start: 13 @7595 has 3 MA's), (32, 7772), (34, 7781), (37, 7805), (39, 7877), (42, 7901), (43, 7907), (51, 8057), (54, 8078), (55, 8090), (57, 8099), (72, 8306), (75, 8324), (104, 8411), (125, 8480), (129, 8492), (140, 8540), (150, 8570), (155, 8585), (170, 8621), (176, 8648), (182, 8669), (188, 8693), (195, 8717), (197, 8723), (203, 8750), (211, 8783), (218, 8822), (225, 8849), (230, 8870), (233, 8885), (245, 8912), (246, 8915), (253, 8936), (255, 8948), (256, 8954), (263, 9002), (270, 9038), (281, 9086), (286, 9113), (287, 9134), (297, 9197), (301, 9221), (307, 9278), (320, 9383), (322, 9404), (324, 9416), (328, 9458), (332, 9479), (334, 9500), (350, 9629),

Gene: Gillker\_12 Start: 7539, Stop: 9644, Start Num: 11

Candidate Starts for Gillker\_12:

(Start: 11 @7539 has 123 MA's), (Start: 13 @7560 has 3 MA's), (32, 7737), (34, 7746), (37, 7770), (39, 7842), (42, 7866), (43, 7872), (51, 8022), (54, 8043), (55, 8055), (57, 8064), (72, 8271), (75, 8289), (104, 8376), (125, 8445), (129, 8457), (140, 8505), (150, 8535), (155, 8550), (170, 8586), (176, 8613), (182, 8634), (188, 8658), (195, 8682), (197, 8688), (203, 8715), (211, 8748), (218, 8787), (225, 8814), (230, 8835), (233, 8850), (245, 8877), (246, 8880), (253, 8901), (255, 8913), (256, 8919), (263, 8967), (270, 9003), (281, 9051), (286, 9078), (287, 9099), (297, 9162), (301, 9186), (307, 9243), (320, 9348), (322, 9369), (324, 9381), (328, 9423), (332, 9444), (334, 9465), (350, 9594),

Gene: Gisselle\_14 Start: 9784, Stop: 12330, Start Num: 5

Candidate Starts for Gisselle\_14:

(3, 9763), (Start: 5 @9784 has 83 MA's), (10, 9832), (18, 9913), (23, 9967), (30, 10009), (34, 10057), (35, 10072), (36, 10078), (47, 10240), (50, 10285), (52, 10336), (53, 10339), (71, 10564), (72, 10585), (79, 10639), (83, 10657), (84, 10660), (89, 10690), (133, 11026), (144, 11080), (145, 11086), (148, 11104), (149, 11110), (155, 11155), (160, 11188), (161, 11191), (172, 11239), (173, 11242), (176, 11254), (179, 11263), (185, 11308), (187, 11317), (193, 11338), (197, 11350), (198, 11353), (203, 11377), (204, 11383), (206, 11389), (211, 11410), (212, 11416), (216, 11437), (221, 11461), (223, 11470), (228, 11488), (232, 11509), (234, 11515), (242, 11560), (243, 11563), (245, 11572), (246, 11575), (263, 11674), (264, 11680), (276, 11734), (290, 11824), (308, 11956), (309, 11959), (315, 12013), (318, 12052), (321, 12070), (325, 12100), (326, 12109), (331, 12151), (348, 12271),

Gene: Glenn\_18 Start: 12624, Stop: 15185, Start Num: 5

Candidate Starts for Glenn\_18:

(3, 12603), (Start: 5 @12624 has 83 MA's), (10, 12672), (14, 12705), (18, 12753), (20, 12777), (21, 12789), (30, 12849), (34, 12897), (35, 12912), (36, 12918), (45, 13038), (47, 13080), (52, 13176), (53, 13179), (56, 13209), (62, 13263), (71, 13404), (72, 13425), (76, 13449), (77, 13470), (79, 13479), (89, 13530), (92, 13548), (111, 13734), (133, 13878), (141, 13911), (145, 13938), (148, 13956), (149, 13962), (152, 13986), (154, 13995), (161, 14043), (167, 14070), (175, 14100), (176, 14106), (184, 14157), (188, 14172), (192, 14184), (193, 14190), (194, 14193), (197, 14202), (203, 14229), (206, 14241), (208, 14250), (211, 14262), (212, 14268), (216, 14289), (221, 14313), (223, 14322), (232, 14361), (236, 14379), (242, 14412), (243, 14415), (245, 14424), (246, 14427), (250, 14442), (264, 14532), (272, 14568), (290, 14676), (296, 14712), (308, 14808), (309, 14811), (315, 14865), (318, 14904), (325, 14952), (326, 14961), (328, 14985), (331, 15003), (338, 15054), (342, 15078), (345, 15096), (348, 15126),

Gene: Godfather\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Godfather\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: GoldenBlanche\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for GoldenBlanche\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Goobery\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for Goobery\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: GreenHearts\_18 Start: 12707, Stop: 15268, Start Num: 5

Candidate Starts for GreenHearts\_18:

(3, 12686), (Start: 5 @12707 has 83 MA's), (15, 12797), (18, 12836), (21, 12872), (30, 12932), (34, 12980), (35, 12995), (47, 13163), (50, 13208), (52, 13259), (53, 13262), (62, 13346), (76, 13532), (81, 13568), (83, 13580), (91, 13622), (127, 13931), (145, 14024), (148, 14042), (149, 14048), (161, 14129), (163, 14135), (169, 14162), (176, 14192), (187, 14255), (192, 14270), (194, 14279), (195, 14282), (198, 14291), (203, 14315), (206, 14327), (207, 14333), (211, 14348), (212, 14354), (213, 14357), (217, 14378), (219, 14393), (223, 14408), (228, 14426), (229, 14432), (232, 14447), (235, 14456), (236, 14465), (242, 14498), (243, 14501), (246, 14513), (248, 14519), (251, 14531), (262, 14597), (263, 14612), (269, 14642), (271, 14651), (290, 14762), (296, 14798), (299, 14819), (308, 14894), (309, 14897), (315, 14951), (318, 14990), (326, 15047), (328, 15071), (334, 15113), (338, 15140), (348, 15209),

Gene: Greenhouse\_18 Start: 12631, Stop: 15192, Start Num: 5

Candidate Starts for Greenhouse\_18:

(3, 12610), (Start: 5 @12631 has 83 MA's), (15, 12721), (18, 12760), (24, 12817), (30, 12856), (34, 12904), (35, 12919), (47, 13087), (50, 13132), (52, 13183), (56, 13216), (71, 13411), (77, 13477), (81, 13492), (83, 13504), (91, 13546), (103, 13657), (111, 13744), (127, 13855), (133, 13888), (145, 13948), (149, 13972), (150, 13975), (161, 14053), (163, 14059), (164, 14062), (169, 14086), (176, 14116), (187, 14179), (192, 14194), (193, 14200), (194, 14203), (198, 14215), (203, 14239), (206, 14251), (207, 14257), (211, 14272), (212, 14278), (213, 14281), (217, 14302), (219, 14317), (223, 14332), (228, 14350), (229, 14356), (232, 14371), (235, 14380), (242, 14422), (243, 14425), (246, 14437), (248, 14443), (251, 14455), (259, 14503), (262, 14521), (263, 14536), (269, 14566), (271, 14575), (290, 14686), (296, 14722), (299, 14743), (308, 14818), (309, 14821), (315, 14875), (318, 14914), (326, 14971), (328, 14995), (334, 15037), (338, 15064), (348, 15133),

Gene: Halsey\_16 Start: 10335, Stop: 12755, Start Num: 6

Candidate Starts for Halsey\_16:

(Start: 6 @10335 has 19 MA's), (17, 10422), (26, 10527), (29, 10539), (34, 10599), (41, 10710), (48, 10791), (57, 10917), (60, 10932), (65, 10986), (77, 11160), (95, 11244), (98, 11265), (102, 11307), (119, 11433), (123, 11454), (128, 11487), (140, 11544), (146, 11586), (150, 11601), (157, 11652), (169, 11688), (171, 11694), (194, 11796), (200, 11817), (209, 11859), (222, 11919), (223, 11925), (235, 11973), (260, 12069), (292, 12246), (294, 12258), (302, 12309), (311, 12390), (318, 12459), (323, 12495), (333, 12576), (336, 12591), (346, 12663), (349, 12687),

Gene: HarperAnne\_12 Start: 7528, Stop: 9633, Start Num: 11

Candidate Starts for HarperAnne\_12:

(Start: 11 @7528 has 123 MA's), (Start: 13 @7549 has 3 MA's), (32, 7726), (34, 7735), (37, 7759), (39, 7831), (42, 7855), (49, 7954), (54, 8032), (55, 8044), (57, 8053), (72, 8260), (75, 8278), (104, 8365), (125, 8434), (129, 8446), (140, 8494), (150, 8524), (155, 8539), (182, 8623), (183, 8626), (188, 8647), (197, 8677), (203, 8704), (211, 8737), (218, 8776), (225, 8803), (226, 8809), (230, 8824), (233, 8839), (246, 8869), (253, 8890), (255, 8902), (256, 8908), (263, 8956), (270, 8992), (281, 9040), (286, 9067), (287, 9088), (297, 9151), (301, 9175), (307, 9232), (320, 9337), (322, 9358), (328, 9412), (332, 9433), (334, 9454),

Gene: HeadNerd\_14 Start: 9720, Stop: 12287, Start Num: 5

Candidate Starts for HeadNerd\_14:

(3, 9699), (Start: 5 @9720 has 83 MA's), (10, 9768), (18, 9849), (20, 9873), (30, 9945), (34, 9993), (35, 10008), (36, 10014), (47, 10176), (51, 10269), (52, 10272), (53, 10275), (56, 10305), (63, 10362), (71, 10500), (72, 10521), (77, 10566), (83, 10593), (89, 10626), (92, 10644), (98, 10686), (103, 10743), (141, 11007), (145, 11034), (148, 11052), (149, 11058), (152, 11082), (155, 11103), (161, 11139), (167, 11166), (175, 11196), (176, 11202), (184, 11253), (193, 11286), (203, 11325), (204, 11331),

(206, 11337), (208, 11346), (211, 11358), (212, 11364), (217, 11388), (221, 11409), (223, 11418), (232, 11457), (236, 11475), (242, 11508), (243, 11511), (246, 11523), (250, 11538), (259, 11589), (263, 11622), (266, 11640), (272, 11664), (281, 11706), (290, 11772), (292, 11784), (299, 11829), (308, 11904), (309, 11907), (315, 11961), (318, 12000), (322, 12027), (326, 12057), (327, 12069), (328, 12081), (329, 12090), (338, 12156), (345, 12198), (348, 12228),

Gene: Herb\_14 Start: 9744, Stop: 12302, Start Num: 5

Candidate Starts for Herb\_14:

(Start: 5 @9744 has 83 MA's), (7, 9753), (8, 9783), (18, 9873), (21, 9909), (34, 10017), (35, 10032), (47, 10200), (52, 10296), (76, 10569), (77, 10590), (84, 10620), (89, 10650), (100, 10737), (112, 10860), (122, 10935), (133, 10998), (141, 11031), (144, 11052), (145, 11058), (148, 11076), (149, 11082), (152, 11106), (158, 11148), (161, 11163), (163, 11169), (169, 11196), (182, 11247), (185, 11280), (187, 11289), (193, 11310), (197, 11322), (203, 11349), (206, 11361), (208, 11370), (211, 11382), (212, 11388), (213, 11391), (217, 11412), (223, 11442), (228, 11460), (232, 11481), (235, 11490), (236, 11499), (242, 11532), (243, 11535), (246, 11547), (250, 11562), (263, 11646), (264, 11652), (272, 11688), (284, 11745), (285, 11754), (290, 11796), (299, 11853), (308, 11928), (309, 11931), (312, 11961), (315, 11985), (321, 12042), (325, 12072), (326, 12081), (328, 12105), (330, 12117), (348, 12243),

Gene: Hernandez44\_12 Start: 7641, Stop: 9746, Start Num: 11

Candidate Starts for Hernandez44\_12:

(Start: 11 @7641 has 123 MA's), (Start: 13 @7662 has 3 MA's), (32, 7839), (34, 7848), (37, 7872), (39, 7944), (42, 7968), (43, 7974), (51, 8124), (54, 8145), (55, 8157), (57, 8166), (72, 8373), (75, 8391), (104, 8478), (125, 8547), (129, 8559), (140, 8607), (150, 8637), (155, 8652), (170, 8688), (176, 8715), (182, 8736), (188, 8760), (195, 8784), (197, 8790), (203, 8817), (211, 8850), (218, 8889), (225, 8916), (230, 8937), (233, 8952), (245, 8979), (246, 8982), (253, 9003), (255, 9015), (256, 9021), (263, 9069), (279, 9144), (281, 9153), (286, 9180), (287, 9201), (297, 9264), (301, 9288), (307, 9345), (320, 9450), (322, 9471), (324, 9483), (328, 9525), (332, 9546), (334, 9567),

Gene: Honk\_14 Start: 9008, Stop: 11266, Start Num: 6

Candidate Starts for Honk\_14:

(Start: 6 @9008 has 19 MA's), (21, 9167), (25, 9191), (29, 9203), (31, 9245), (37, 9287), (44, 9395), (47, 9446), (48, 9455), (55, 9572), (59, 9587), (61, 9596), (65, 9650), (68, 9713), (74, 9797), (75, 9809), (77, 9812), (79, 9821), (98, 9872), (115, 9986), (138, 10082), (147, 10124), (179, 10223), (187, 10256), (190, 10265), (211, 10349), (246, 10481), (254, 10511), (256, 10520), (270, 10604), (272, 10610), (274, 10619), (280, 10646), (281, 10652), (295, 10751), (306, 10832), (321, 10964), (326, 11003), (327, 11015), (334, 11069), (337, 11084), (340, 11111),

Gene: Horacetta\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Horacetta\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Huckleberry\_14 Start: 9720, Stop: 12287, Start Num: 5

Candidate Starts for Huckleberry\_14:

(3, 9699), (Start: 5 @9720 has 83 MA's), (10, 9768), (18, 9849), (20, 9873), (30, 9945), (34, 9993), (35, 10008), (36, 10014), (47, 10176), (51, 10269), (52, 10272), (53, 10275), (56, 10305), (63, 10362), (71, 10500), (72, 10521), (77, 10566), (83, 10593), (89, 10626), (92, 10644), (98, 10686), (103, 10743),

(141, 11007), (145, 11034), (148, 11052), (149, 11058), (152, 11082), (155, 11103), (161, 11139), (167, 11166), (175, 11196), (176, 11202), (184, 11253), (193, 11286), (203, 11325), (204, 11331), (206, 11337), (208, 11346), (211, 11358), (212, 11364), (217, 11388), (221, 11409), (223, 11418), (232, 11457), (236, 11475), (242, 11508), (243, 11511), (246, 11523), (250, 11538), (259, 11589), (263, 11622), (266, 11640), (272, 11664), (281, 11706), (290, 11772), (292, 11784), (299, 11829), (308, 11904), (309, 11907), (315, 11961), (318, 12000), (322, 12027), (326, 12057), (327, 12069), (328, 12081), (329, 12090), (338, 12156), (345, 12198), (348, 12228),

Gene: Hulk\_12 Start: 7553, Stop: 9658, Start Num: 11

Candidate Starts for Hulk\_12:

(Start: 11 @7553 has 123 MA's), (Start: 13 @7574 has 3 MA's), (32, 7751), (34, 7760), (37, 7784), (39, 7856), (42, 7880), (43, 7886), (51, 8036), (54, 8057), (55, 8069), (57, 8078), (72, 8285), (75, 8303), (104, 8390), (125, 8459), (129, 8471), (140, 8519), (150, 8549), (155, 8564), (170, 8600), (176, 8627), (182, 8648), (188, 8672), (195, 8696), (197, 8702), (203, 8729), (211, 8762), (218, 8801), (225, 8828), (230, 8849), (233, 8864), (245, 8891), (246, 8894), (253, 8915), (255, 8927), (256, 8933), (263, 8981), (279, 9056), (281, 9065), (286, 9092), (287, 9113), (297, 9176), (307, 9257), (320, 9362), (322, 9383), (324, 9395), (328, 9437), (332, 9458), (334, 9479), (350, 9608),

Gene: HunterDalle\_14 Start: 9738, Stop: 12296, Start Num: 5

Candidate Starts for HunterDalle\_14:

(Start: 5 @9738 has 83 MA's), (7, 9747), (8, 9777), (18, 9867), (30, 9963), (35, 10026), (47, 10194), (52, 10290), (53, 10293), (54, 10308), (64, 10395), (67, 10461), (81, 10599), (82, 10602), (95, 10686), (133, 10992), (145, 11052), (148, 11070), (149, 11076), (154, 11109), (155, 11121), (161, 11157), (167, 11184), (173, 11208), (175, 11214), (184, 11271), (191, 11295), (193, 11304), (198, 11319), (203, 11343), (206, 11355), (211, 11376), (212, 11382), (216, 11403), (221, 11427), (223, 11436), (228, 11454), (232, 11475), (234, 11481), (236, 11493), (242, 11526), (243, 11529), (246, 11541), (250, 11556), (251, 11559), (264, 11646), (283, 11736), (284, 11739), (290, 11790), (299, 11847), (300, 11856), (303, 11868), (308, 11922), (309, 11925), (315, 11979), (318, 12018), (325, 12066), (326, 12075), (328, 12099), (330, 12111), (345, 12207), (348, 12237),

Gene: Huntingdon\_18 Start: 12617, Stop: 15178, Start Num: 5

Candidate Starts for Huntingdon\_18:

(3, 12596), (Start: 5 @12617 has 83 MA's), (15, 12707), (18, 12746), (21, 12782), (30, 12842), (35, 12905), (47, 13073), (50, 13118), (51, 13166), (52, 13169), (53, 13172), (62, 13256), (63, 13259), (71, 13397), (77, 13463), (83, 13490), (91, 13532), (127, 13841), (133, 13874), (145, 13934), (149, 13958), (161, 14039), (163, 14045), (164, 14048), (169, 14072), (176, 14102), (182, 14123), (189, 14171), (193, 14186), (198, 14201), (203, 14225), (206, 14237), (207, 14243), (211, 14258), (212, 14264), (219, 14303), (221, 14309), (223, 14318), (228, 14336), (229, 14342), (231, 14354), (232, 14357), (235, 14366), (238, 14384), (242, 14408), (243, 14411), (246, 14423), (251, 14441), (262, 14507), (263, 14522), (269, 14552), (271, 14561), (284, 14621), (290, 14672), (296, 14708), (308, 14804), (309, 14807), (315, 14861), (318, 14900), (322, 14927), (326, 14957), (328, 14981), (334, 15023), (338, 15050), (348, 15119),

Gene: IAmGroot\_15 Start: 10840, Stop: 13191, Start Num: 6

Candidate Starts for IAmGroot\_15:

(Start: 6 @10840 has 19 MA's), (25, 11023), (44, 11239), (48, 11299), (51, 11383), (57, 11425), (65, 11494), (68, 11557), (75, 11653), (77, 11656), (90, 11707), (98, 11758), (110, 11872), (113, 11881), (118, 11920), (166, 12109), (187, 12193), (199, 12232), (203, 12253), (218, 12328), (249, 12430), (252, 12442), (256, 12463), (277, 12577), (280, 12592), (281, 12598), (308, 12799), (326, 12949), (334, 13015),

Gene: Immaculata\_18 Start: 12618, Stop: 15179, Start Num: 5

Candidate Starts for Immaculata\_18:



(3, 12597), (Start: 5 @12618 has 83 MA's), (10, 12666), (14, 12699), (18, 12747), (20, 12771), (21, 12783), (30, 12843), (34, 12891), (35, 12906), (36, 12912), (45, 13032), (47, 13074), (51, 13167), (52, 13170), (53, 13173), (56, 13203), (62, 13257), (71, 13398), (72, 13419), (76, 13443), (77, 13464), (79, 13473), (89, 13524), (92, 13542), (96, 13566), (111, 13728), (133, 13872), (141, 13905), (145, 13932), (148, 13950), (149, 13956), (152, 13980), (154, 13989), (161, 14037), (167, 14064), (173, 14088), (175, 14094), (176, 14100), (184, 14151), (188, 14166), (192, 14178), (193, 14184), (194, 14187), (197, 14196), (203, 14223), (206, 14235), (208, 14244), (211, 14256), (212, 14262), (216, 14283), (223, 14316), (232, 14355), (242, 14406), (243, 14409), (245, 14418), (246, 14421), (250, 14436), (263, 14520), (264, 14526), (272, 14562), (290, 14670), (292, 14682), (296, 14706), (308, 14802), (309, 14805), (315, 14859), (318, 14898), (325, 14946), (326, 14955), (328, 14979), (331, 14997), (338, 15048), (342, 15072), (345, 15090), (348, 15120),

Gene: IzzyPants24\_11 Start: 7579, Stop: 9684, Start Num: 11

Candidate Starts for IzzyPants24\_11:

(Start: 11 @7579 has 123 MA's), (Start: 13 @7600 has 3 MA's), (32, 7777), (34, 7786), (37, 7810), (39, 7882), (42, 7906), (49, 8005), (54, 8083), (55, 8095), (57, 8104), (72, 8311), (75, 8329), (104, 8416), (125, 8485), (129, 8497), (140, 8545), (150, 8575), (155, 8590), (174, 8644), (182, 8674), (183, 8677), (188, 8698), (197, 8728), (203, 8755), (211, 8788), (218, 8827), (225, 8854), (226, 8860), (230, 8875), (233, 8890), (245, 8917), (246, 8920), (253, 8941), (255, 8953), (256, 8959), (263, 9007), (270, 9043), (281, 9091), (286, 9118), (287, 9139), (297, 9202), (301, 9226), (307, 9283), (320, 9388), (322, 9409), (328, 9463), (332, 9484), (334, 9505),

Gene: JRok\_12 Start: 7531, Stop: 9636, Start Num: 11

Candidate Starts for JRok\_12:

(Start: 11 @7531 has 123 MA's), (Start: 13 @7552 has 3 MA's), (32, 7729), (34, 7738), (37, 7762), (39, 7834), (42, 7858), (43, 7864), (51, 8014), (54, 8035), (55, 8047), (57, 8056), (72, 8263), (75, 8281), (104, 8368), (125, 8437), (129, 8449), (140, 8497), (150, 8527), (155, 8542), (176, 8605), (182, 8626), (183, 8629), (197, 8680), (203, 8707), (211, 8740), (218, 8779), (225, 8806), (230, 8827), (233, 8842), (245, 8869), (253, 8893), (255, 8905), (256, 8911), (263, 8959), (281, 9043), (286, 9070), (287, 9091), (297, 9154), (301, 9178), (305, 9202), (306, 9223), (320, 9340), (322, 9361), (324, 9373), (328, 9415), (332, 9436), (334, 9457), (350, 9586),

Gene: Jahseh\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Jahseh\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: JaimeB\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for JaimeB\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Jannah\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Jannah\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466),

Gene: Jerky\_12 Start: 7627, Stop: 9732, Start Num: 11

Candidate Starts for Jerky\_12:

(Start: 11 @7627 has 123 MA's), (Start: 13 @7648 has 3 MA's), (32, 7825), (34, 7834), (37, 7858), (39, 7930), (42, 7954), (43, 7960), (51, 8110), (54, 8131), (55, 8143), (57, 8152), (72, 8359), (75, 8377), (104, 8464), (125, 8533), (129, 8545), (140, 8593), (150, 8623), (155, 8638), (176, 8701), (182, 8722), (188, 8746), (195, 8770), (197, 8776), (203, 8803), (211, 8836), (218, 8875), (225, 8902), (230, 8923), (233, 8938), (245, 8965), (246, 8968), (253, 8989), (255, 9001), (256, 9007), (263, 9055), (270, 9091), (279, 9130), (281, 9139), (286, 9166), (287, 9187), (297, 9250), (301, 9274), (307, 9331), (320, 9436), (322, 9457), (324, 9469), (328, 9511), (332, 9532), (334, 9553), (350, 9682),

Gene: JoBros\_12 Start: 7541, Stop: 9646, Start Num: 11

Candidate Starts for JoBros\_12:

(Start: 11 @7541 has 123 MA's), (Start: 13 @7562 has 3 MA's), (32, 7739), (34, 7748), (37, 7772), (39, 7844), (42, 7868), (43, 7874), (51, 8024), (54, 8045), (55, 8057), (57, 8066), (72, 8273), (75, 8291), (104, 8378), (125, 8447), (129, 8459), (140, 8507), (150, 8537), (155, 8552), (170, 8588), (176, 8615), (182, 8636), (188, 8660), (195, 8684), (197, 8690), (203, 8717), (211, 8750), (218, 8789), (225, 8816), (230, 8837), (233, 8852), (245, 8879), (246, 8882), (253, 8903), (255, 8915), (256, 8921), (263, 8969), (270, 9005), (281, 9053), (286, 9080), (287, 9101), (297, 9164), (301, 9188), (307, 9245), (320, 9350), (322, 9371), (324, 9383), (328, 9425), (332, 9446), (334, 9467), (350, 9596),

Gene: Joann\_18 Start: 12611, Stop: 15172, Start Num: 5

Candidate Starts for Joann\_18:

(3, 12590), (Start: 5 @12611 has 83 MA's), (15, 12701), (18, 12740), (21, 12776), (30, 12836), (34, 12884), (35, 12899), (47, 13067), (50, 13112), (52, 13163), (53, 13166), (62, 13250), (77, 13457), (79, 13466), (83, 13484), (91, 13526), (127, 13835), (133, 13868), (145, 13928), (149, 13952), (161, 14033), (163, 14039), (164, 14042), (169, 14066), (176, 14096), (182, 14117), (193, 14180), (198, 14195), (203, 14219), (206, 14231), (207, 14237), (211, 14252), (212, 14258), (213, 14261), (217, 14282), (219, 14297), (223, 14312), (228, 14330), (229, 14336), (232, 14351), (235, 14360), (236, 14369), (242, 14402), (243, 14405), (246, 14417), (248, 14423), (251, 14435), (262, 14501), (263, 14516), (284, 14615), (290, 14666), (292, 14678), (295, 14699), (308, 14798), (309, 14801), (315, 14855), (318, 14894), (326, 14951), (328, 14975), (334, 15017), (338, 15044), (348, 15113),

Gene: JooneeDee\_12 Start: 7572, Stop: 9677, Start Num: 11

Candidate Starts for JooneeDee\_12:

(1, 7476), (Start: 11 @7572 has 123 MA's), (Start: 13 @7593 has 3 MA's), (29, 7719), (32, 7770), (34, 7779), (37, 7803), (39, 7875), (42, 7899), (49, 7998), (54, 8076), (55, 8088), (57, 8097), (72, 8304), (75, 8322), (104, 8409), (125, 8478), (129, 8490), (140, 8538), (150, 8568), (155, 8583), (174, 8637), (182, 8667), (183, 8670), (188, 8691), (197, 8721), (203, 8748), (211, 8781), (218, 8820), (225, 8847), (226, 8853), (230, 8868), (233, 8883), (245, 8910), (246, 8913), (253, 8934), (255, 8946), (256, 8952), (263, 9000), (270, 9036), (281, 9084), (286, 9111), (287, 9132), (297, 9195), (301, 9219), (307, 9276), (320, 9381), (322, 9402), (324, 9414), (328, 9456), (332, 9477), (334, 9498),

Gene: Josuke\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Josuke\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: Jumboset\_18 Start: 12567, Stop: 15128, Start Num: 5

Candidate Starts for Jumboset\_18:

(3, 12546), (Start: 5 @12567 has 83 MA's), (10, 12615), (14, 12648), (18, 12696), (20, 12720), (21, 12732), (30, 12792), (34, 12840), (35, 12855), (36, 12861), (45, 12981), (47, 13023), (52, 13119), (53, 13122), (56, 13152), (62, 13206), (63, 13209), (71, 13347), (72, 13368), (76, 13392), (77, 13413), (79, 13422), (89, 13473), (92, 13491), (111, 13677), (133, 13821), (141, 13854), (145, 13881), (148, 13899), (149, 13905), (152, 13929), (154, 13938), (161, 13986), (167, 14013), (168, 14016), (173, 14037), (175, 14043), (176, 14049), (184, 14100), (188, 14115), (192, 14127), (193, 14133), (194, 14136), (197, 14145), (203, 14172), (206, 14184), (208, 14193), (211, 14205), (212, 14211), (216, 14232), (223, 14265), (232, 14304), (242, 14355), (243, 14358), (245, 14367), (246, 14370), (250, 14385), (264, 14475), (272, 14511), (290, 14619), (296, 14655), (308, 14751), (309, 14754), (315, 14808), (318, 14847), (325, 14895), (326, 14904), (328, 14928), (331, 14946), (338, 14997), (342, 15021), (345, 15039), (348, 15069),

Gene: Kaijohn\_12 Start: 7545, Stop: 9650, Start Num: 11

Candidate Starts for Kaijohn\_12:

(Start: 11 @7545 has 123 MA's), (Start: 13 @7566 has 3 MA's), (32, 7743), (34, 7752), (37, 7776), (39, 7848), (42, 7872), (43, 7878), (49, 7971), (51, 8028), (54, 8049), (55, 8061), (57, 8070), (72, 8277), (75, 8295), (104, 8382), (125, 8451), (129, 8463), (140, 8511), (150, 8541), (155, 8556), (170, 8592), (176, 8619), (182, 8640), (188, 8664), (195, 8688), (197, 8694), (203, 8721), (211, 8754), (218, 8793), (225, 8820), (230, 8841), (233, 8856), (245, 8883), (246, 8886), (253, 8907), (255, 8919), (256, 8925), (263, 8973), (281, 9057), (286, 9084), (287, 9105), (297, 9168), (307, 9249), (320, 9354), (324, 9387), (328, 9429), (332, 9450), (334, 9471), (350, 9600),

Gene: Kalimba\_16 Start: 10244, Stop: 12664, Start Num: 6

Candidate Starts for Kalimba\_16:

(Start: 6 @10244 has 19 MA's), (17, 10331), (20, 10388), (26, 10436), (29, 10448), (34, 10508), (41, 10619), (48, 10700), (57, 10826), (60, 10841), (65, 10895), (77, 11069), (95, 11153), (98, 11174), (99, 11195), (102, 11216), (109, 11267), (119, 11342), (123, 11363), (128, 11396), (140, 11453), (146, 11495), (150, 11510), (157, 11561), (169, 11597), (194, 11705), (200, 11726), (209, 11768), (212, 11780), (223, 11834), (235, 11882), (260, 11978), (288, 12134), (292, 12155), (294, 12167), (302, 12218), (318, 12368), (323, 12404), (327, 12437), (349, 12596),

Gene: Kalizoi\_18 Start: 12566, Stop: 15127, Start Num: 5

Candidate Starts for Kalizoi\_18:

(3, 12545), (Start: 5 @12566 has 83 MA's), (10, 12614), (14, 12647), (18, 12695), (20, 12719), (21, 12731), (30, 12791), (34, 12839), (35, 12854), (36, 12860), (45, 12980), (47, 13022), (52, 13118), (53, 13121), (56, 13151), (62, 13205), (71, 13346), (72, 13367), (76, 13391), (77, 13412), (79, 13421), (89, 13472), (92, 13490), (111, 13676), (133, 13820), (141, 13853), (145, 13880), (148, 13898), (149, 13904), (152, 13928), (154, 13937), (161, 13985), (167, 14012), (168, 14015), (173, 14036), (176, 14048), (184, 14099), (188, 14114), (192, 14126), (194, 14135), (197, 14144), (203, 14171), (206, 14183), (208, 14192), (211, 14204), (212, 14210), (216, 14231), (221, 14255), (223, 14264), (232, 14303), (242, 14354), (243, 14357), (245, 14366), (246, 14369), (250, 14384), (264, 14474), (272, 14510), (290, 14618), (296, 14654), (308, 14750), (309, 14753), (315, 14807), (318, 14846), (325, 14894), (326, 14903), (328, 14927), (331, 14945), (338, 14996), (342, 15020), (345, 15038), (348,

15068),

Gene: KayPaulus\_12 Start: 7533, Stop: 9638, Start Num: 11

Candidate Starts for KayPaulus\_12:

(Start: 11 @7533 has 123 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (42, 7860), (43, 7866), (49, 7959), (51, 8016), (54, 8037), (55, 8049), (57, 8058), (72, 8265), (75, 8283), (104, 8370), (125, 8439), (129, 8451), (140, 8499), (150, 8529), (155, 8544), (170, 8580), (176, 8607), (183, 8631), (188, 8652), (195, 8676), (197, 8682), (203, 8709), (211, 8742), (218, 8781), (225, 8808), (230, 8829), (233, 8844), (245, 8871), (246, 8874), (255, 8907), (256, 8913), (263, 8961), (270, 8997), (281, 9045), (286, 9072), (287, 9093), (297, 9156), (301, 9180), (307, 9237), (320, 9342), (322, 9363), (324, 9375), (328, 9417), (332, 9438), (334, 9459), (350, 9588),

Gene: Kevanna\_12 Start: 7533, Stop: 9638, Start Num: 11

Candidate Starts for Kevanna\_12:

(Start: 11 @7533 has 123 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (42, 7860), (43, 7866), (49, 7959), (51, 8016), (54, 8037), (55, 8049), (57, 8058), (72, 8265), (75, 8283), (104, 8370), (125, 8439), (129, 8451), (140, 8499), (150, 8529), (155, 8544), (170, 8580), (176, 8607), (183, 8631), (188, 8652), (195, 8676), (197, 8682), (203, 8709), (211, 8742), (218, 8781), (225, 8808), (230, 8829), (233, 8844), (245, 8871), (246, 8874), (255, 8907), (256, 8913), (263, 8961), (270, 8997), (281, 9045), (286, 9072), (287, 9093), (297, 9156), (301, 9180), (307, 9237), (320, 9342), (322, 9363), (324, 9375), (328, 9417), (332, 9438), (334, 9459), (350, 9588),

Gene: KillerTomato\_12 Start: 7586, Stop: 9691, Start Num: 11

Candidate Starts for KillerTomato\_12:

(Start: 11 @7586 has 123 MA's), (Start: 13 @7607 has 3 MA's), (32, 7784), (34, 7793), (37, 7817), (39, 7889), (42, 7913), (43, 7919), (49, 8012), (51, 8069), (54, 8090), (55, 8102), (57, 8111), (72, 8318), (75, 8336), (104, 8423), (125, 8492), (129, 8504), (140, 8552), (150, 8582), (155, 8597), (170, 8633), (176, 8660), (183, 8684), (188, 8705), (195, 8729), (197, 8735), (203, 8762), (211, 8795), (218, 8834), (225, 8861), (230, 8882), (233, 8897), (245, 8924), (246, 8927), (253, 8948), (255, 8960), (256, 8966), (263, 9014), (270, 9050), (281, 9098), (286, 9125), (287, 9146), (297, 9209), (301, 9233), (307, 9290), (320, 9395), (322, 9416), (324, 9428), (328, 9470), (332, 9491), (334, 9512), (350, 9641),

Gene: KingBob\_14 Start: 9744, Stop: 12302, Start Num: 5

Candidate Starts for KingBob\_14:

(Start: 5 @9744 has 83 MA's), (7, 9753), (8, 9783), (18, 9873), (21, 9909), (34, 10017), (35, 10032), (47, 10200), (52, 10296), (76, 10569), (77, 10590), (84, 10620), (89, 10650), (100, 10737), (112, 10860), (122, 10935), (133, 10998), (141, 11031), (144, 11052), (145, 11058), (148, 11076), (149, 11082), (152, 11106), (158, 11148), (161, 11163), (163, 11169), (169, 11196), (182, 11247), (185, 11280), (187, 11289), (193, 11310), (197, 11322), (203, 11349), (206, 11361), (208, 11370), (211, 11382), (212, 11388), (213, 11391), (217, 11412), (223, 11442), (228, 11460), (232, 11481), (235, 11490), (236, 11499), (242, 11532), (243, 11535), (246, 11547), (250, 11562), (263, 11646), (264, 11652), (272, 11688), (284, 11745), (285, 11754), (290, 11796), (299, 11853), (308, 11928), (309, 11931), (312, 11961), (315, 11985), (321, 12042), (325, 12072), (326, 12081), (328, 12105), (330, 12117), (348, 12243),

Gene: Kittykat\_14 Start: 9756, Stop: 12314, Start Num: 5

Candidate Starts for Kittykat\_14:

(3, 9735), (Start: 5 @9756 has 83 MA's), (10, 9804), (18, 9885), (30, 9981), (33, 10026), (35, 10044), (36, 10050), (46, 10191), (47, 10212), (50, 10257), (52, 10308), (53, 10311), (56, 10341), (62, 10395), (70, 10524), (77, 10602), (79, 10611), (81, 10617), (83, 10629), (89, 10662), (95, 10704), (100, 10749), (111, 10869), (112, 10872), (122, 10947), (133, 11010), (145, 11070), (148, 11088), (149, 11094), (151, 11106), (153, 11124), (161, 11175), (163, 11181), (168, 11205), (172, 11223), (176, 11238), (179, 11247), (185, 11292), (187, 11301), (193, 11322), (197, 11334), (198, 11337), (202, 11358),

(203, 11361), (204, 11367), (206, 11373), (211, 11394), (212, 11400), (216, 11421), (221, 11445), (223, 11454), (226, 11466), (228, 11472), (232, 11493), (242, 11544), (243, 11547), (245, 11556), (246, 11559), (264, 11664), (266, 11676), (271, 11697), (285, 11766), (290, 11808), (292, 11820), (293, 11823), (295, 11841), (296, 11844), (308, 11940), (309, 11943), (315, 11997), (318, 12036), (321, 12054), (325, 12084), (326, 12093), (331, 12135), (348, 12255),

Gene: Kojax4\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Kojax4\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: Korra\_19 Start: 12572, Stop: 15133, Start Num: 5

Candidate Starts for Korra\_19:

(3, 12551), (Start: 5 @12572 has 83 MA's), (10, 12620), (14, 12653), (18, 12701), (20, 12725), (21, 12737), (30, 12797), (34, 12845), (35, 12860), (36, 12866), (45, 12986), (47, 13028), (52, 13124), (53, 13127), (56, 13157), (62, 13211), (71, 13352), (72, 13373), (76, 13397), (77, 13418), (79, 13427), (89, 13478), (92, 13496), (111, 13682), (133, 13826), (141, 13859), (145, 13886), (148, 13904), (149, 13910), (152, 13934), (154, 13943), (161, 13991), (167, 14018), (168, 14021), (173, 14042), (176, 14054), (184, 14105), (188, 14120), (192, 14132), (194, 14141), (197, 14150), (203, 14177), (206, 14189), (208, 14198), (211, 14210), (212, 14216), (216, 14237), (221, 14261), (223, 14270), (232, 14309), (242, 14360), (243, 14363), (245, 14372), (246, 14375), (250, 14390), (264, 14480), (272, 14516), (290, 14624), (296, 14660), (308, 14756), (309, 14759), (315, 14813), (318, 14852), (325, 14900), (326, 14909), (328, 14933), (331, 14951), (338, 15002), (342, 15026), (348, 15074),

Gene: KyriosFaba\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for KyriosFaba\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Lakshmi\_18 Start: 12636, Stop: 15197, Start Num: 5

Candidate Starts for Lakshmi\_18:

(3, 12615), (Start: 5 @12636 has 83 MA's), (15, 12726), (18, 12765), (21, 12801), (30, 12861), (34, 12909), (35, 12924), (47, 13092), (50, 13137), (52, 13188), (53, 13191), (62, 13275), (76, 13461), (81, 13497), (83, 13509), (91, 13551), (103, 13662), (127, 13860), (145, 13953), (149, 13977), (150, 13980), (161, 14058), (163, 14064), (169, 14091), (176, 14121), (187, 14184), (192, 14199), (194, 14208), (195, 14211), (198, 14220), (203, 14244), (206, 14256), (207, 14262), (211, 14277), (212, 14283), (213, 14286), (217, 14307), (219, 14322), (223, 14337), (228, 14355), (229, 14361), (232, 14376), (235, 14385), (236, 14394), (242, 14427), (243, 14430), (246, 14442), (248, 14448), (251, 14460), (262, 14526), (263, 14541), (269, 14571), (271, 14580), (290, 14691), (296, 14727), (299, 14748), (308, 14823), (309, 14826), (315, 14880), (317, 14895), (318, 14919), (326, 14976), (328, 15000), (334, 15042), (338, 15069), (348, 15138),

Gene: Lasagna\_14 Start: 9717, Stop: 12278, Start Num: 5

Candidate Starts for Lasagna\_14:

(3, 9696), (Start: 5 @9717 has 83 MA's), (10, 9765), (18, 9846), (20, 9870), (30, 9942), (34, 9990), (35, 10005), (36, 10011), (45, 10131), (47, 10173), (52, 10269), (53, 10272), (56, 10302), (67, 10440), (72, 10518), (77, 10563), (79, 10572), (89, 10623), (92, 10641), (93, 10653), (97, 10677), (120, 10893), (137, 10983), (141, 11004), (145, 11031), (148, 11049), (149, 11055), (152, 11079), (154, 11088), (161, 11136), (167, 11163), (175, 11193), (184, 11250), (188, 11265), (192, 11277), (193, 11283), (194, 11286), (197, 11295), (203, 11322), (206, 11334), (208, 11343), (211, 11355), (212, 11361), (217, 11385), (221, 11406), (223, 11415), (227, 11430), (232, 11454), (242, 11505), (243, 11508), (246, 11520), (260, 11595), (264, 11625), (272, 11661), (290, 11769), (292, 11781), (296, 11805), (308, 11901), (309, 11904), (313, 11937), (315, 11958), (318, 11997), (321, 12015), (325, 12045), (326, 12054), (328, 12078), (339, 12153), (348, 12219),

Gene: LaviMo\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for LaviMo\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: Leafy\_12 Start: 7556, Stop: 9661, Start Num: 11

Candidate Starts for Leafy\_12:

(Start: 11 @7556 has 123 MA's), (Start: 13 @7577 has 3 MA's), (32, 7754), (34, 7763), (37, 7787), (39, 7859), (42, 7883), (43, 7889), (49, 7982), (51, 8039), (54, 8060), (55, 8072), (57, 8081), (72, 8288), (75, 8306), (104, 8393), (125, 8462), (129, 8474), (140, 8522), (150, 8552), (155, 8567), (176, 8630), (183, 8654), (188, 8675), (195, 8699), (197, 8705), (203, 8732), (211, 8765), (218, 8804), (226, 8837), (230, 8852), (233, 8867), (245, 8894), (246, 8897), (255, 8930), (256, 8936), (263, 8984), (281, 9068), (286, 9095), (287, 9116), (297, 9179), (301, 9203), (307, 9260), (320, 9365), (322, 9386), (324, 9398), (328, 9440), (332, 9461), (334, 9482), (350, 9611),

Gene: LemonPepper\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for LemonPepper\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Lennox\_14 Start: 9717, Stop: 12278, Start Num: 5

Candidate Starts for Lennox\_14:

(3, 9696), (Start: 5 @9717 has 83 MA's), (10, 9765), (18, 9846), (20, 9870), (30, 9942), (34, 9990), (35, 10005), (36, 10011), (47, 10173), (52, 10269), (56, 10302), (67, 10440), (72, 10518), (77, 10563), (79, 10572), (89, 10623), (92, 10641), (93, 10653), (97, 10677), (120, 10893), (137, 10983), (141, 11004), (145, 11031), (148, 11049), (149, 11055), (152, 11079), (154, 11088), (161, 11136), (167, 11163), (175, 11193), (184, 11250), (188, 11265), (192, 11277), (193, 11283), (194, 11286), (197, 11295), (203, 11322), (206, 11334), (208, 11343), (211, 11355), (212, 11361), (217, 11385), (221, 11406), (223, 11415), (227, 11430), (232, 11454), (242, 11505), (243, 11508), (246, 11520), (264, 11625), (272, 11661), (290, 11769), (292, 11781), (296, 11805), (308, 11901), (309, 11904), (313, 11937), (315, 11958), (318, 11997), (321, 12015), (325, 12045), (326, 12054), (328, 12078), (339, 12153),

(348, 12219),

Gene: LilStuart\_14 Start: 9717, Stop: 12278, Start Num: 5

Candidate Starts for LilStuart\_14:

(3, 9696), (Start: 5 @9717 has 83 MA's), (10, 9765), (18, 9846), (20, 9870), (30, 9942), (34, 9990), (35, 10005), (36, 10011), (47, 10173), (52, 10269), (56, 10302), (67, 10440), (72, 10518), (77, 10563), (79, 10572), (89, 10623), (92, 10641), (93, 10653), (97, 10677), (120, 10893), (137, 10983), (141, 11004), (145, 11031), (148, 11049), (149, 11055), (152, 11079), (154, 11088), (161, 11136), (167, 11163), (175, 11193), (184, 11250), (188, 11265), (192, 11277), (193, 11283), (194, 11286), (197, 11295), (203, 11322), (206, 11334), (208, 11343), (211, 11355), (212, 11361), (217, 11385), (221, 11406), (223, 11415), (227, 11430), (232, 11454), (242, 11505), (243, 11508), (246, 11520), (264, 11625), (272, 11661), (290, 11769), (292, 11781), (296, 11805), (308, 11901), (309, 11904), (313, 11937), (315, 11958), (318, 11997), (321, 12015), (325, 12045), (326, 12054), (328, 12078), (339, 12153), (348, 12219),

Gene: LionelHutz\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for LionelHutz\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Litotes\_18 Start: 12597, Stop: 15152, Start Num: 5

Candidate Starts for Litotes\_18:

(3, 12576), (Start: 5 @12597 has 83 MA's), (10, 12645), (18, 12726), (20, 12750), (30, 12822), (34, 12870), (35, 12885), (36, 12891), (47, 13053), (52, 13149), (53, 13152), (56, 13182), (67, 13320), (77, 13443), (89, 13503), (92, 13521), (94, 13536), (100, 13587), (127, 13818), (142, 13887), (145, 13911), (148, 13929), (149, 13935), (156, 13989), (158, 14001), (163, 14022), (168, 14046), (185, 14133), (192, 14157), (193, 14163), (194, 14166), (198, 14178), (202, 14199), (203, 14202), (204, 14208), (206, 14214), (210, 14232), (211, 14235), (212, 14241), (221, 14286), (223, 14295), (228, 14313), (232, 14334), (235, 14343), (236, 14352), (242, 14385), (243, 14388), (245, 14397), (246, 14400), (257, 14451), (290, 14649), (292, 14661), (295, 14682), (296, 14685), (308, 14781), (309, 14784), (315, 14838), (318, 14877), (326, 14934), (331, 14976), (338, 15024), (345, 15066), (348, 15096),

Gene: Livingwater\_12 Start: 7533, Stop: 9638, Start Num: 11

Candidate Starts for Livingwater\_12:

(Start: 11 @7533 has 123 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (42, 7860), (43, 7866), (49, 7959), (51, 8016), (54, 8037), (55, 8049), (57, 8058), (72, 8265), (75, 8283), (104, 8370), (125, 8439), (129, 8451), (140, 8499), (150, 8529), (155, 8544), (176, 8607), (183, 8631), (188, 8652), (195, 8676), (197, 8682), (203, 8709), (211, 8742), (218, 8781), (230, 8829), (233, 8844), (245, 8871), (246, 8874), (255, 8907), (256, 8913), (263, 8961), (281, 9045), (286, 9072), (287, 9093), (297, 9156), (301, 9180), (307, 9237), (320, 9342), (322, 9363), (324, 9375), (328, 9417), (332, 9438), (334, 9459), (350, 9588),

Gene: Loca\_12 Start: 7559, Stop: 9664, Start Num: 11

Candidate Starts for Loca\_12:

(Start: 11 @7559 has 123 MA's), (Start: 13 @7580 has 3 MA's), (32, 7757), (34, 7766), (37, 7790), (39, 7862), (42, 7886), (43, 7892), (49, 7985), (51, 8042), (54, 8063), (55, 8075), (57, 8084), (72, 8291), (75, 8309), (104, 8396), (125, 8465), (129, 8477), (140, 8525), (150, 8555), (155, 8570), (176, 8633), (188, 8678), (195, 8702), (197, 8708), (203, 8735), (211, 8768), (218, 8807), (230, 8855), (233, 8870), (245,

8897), (246, 8900), (255, 8933), (256, 8939), (263, 8987), (281, 9071), (286, 9098), (287, 9119), (297, 9182), (301, 9206), (307, 9263), (320, 9368), (322, 9389), (324, 9401), (328, 9443), (332, 9464), (334, 9485), (350, 9614),

Gene: Lola20\_12 Start: 7538, Stop: 9646, Start Num: 11

Candidate Starts for Lola20\_12:

(Start: 11 @7538 has 123 MA's), (Start: 13 @7559 has 3 MA's), (32, 7736), (34, 7745), (37, 7769), (39, 7841), (42, 7865), (43, 7871), (49, 7964), (51, 8021), (54, 8042), (55, 8054), (57, 8063), (72, 8270), (75, 8288), (104, 8375), (125, 8444), (129, 8456), (140, 8504), (150, 8534), (155, 8549), (170, 8585), (176, 8612), (188, 8657), (195, 8681), (197, 8687), (203, 8714), (211, 8747), (218, 8786), (225, 8813), (230, 8834), (233, 8849), (245, 8876), (246, 8879), (255, 8912), (256, 8918), (263, 8966), (270, 9002), (281, 9050), (286, 9077), (287, 9098), (297, 9161), (301, 9185), (307, 9242), (320, 9347), (322, 9368), (324, 9380), (328, 9422), (334, 9464), (350, 9596),

Gene: Lucy\_14 Start: 9709, Stop: 12270, Start Num: 5

Candidate Starts for Lucy\_14:

(3, 9688), (Start: 5 @9709 has 83 MA's), (10, 9757), (18, 9838), (20, 9862), (30, 9934), (34, 9982), (35, 9997), (36, 10003), (47, 10165), (52, 10261), (53, 10264), (56, 10294), (67, 10432), (72, 10510), (77, 10555), (79, 10564), (89, 10615), (92, 10633), (93, 10645), (97, 10669), (120, 10885), (137, 10975), (141, 10996), (145, 11023), (148, 11041), (149, 11047), (152, 11071), (154, 11080), (161, 11128), (167, 11155), (175, 11185), (184, 11242), (188, 11257), (192, 11269), (193, 11275), (194, 11278), (197, 11287), (203, 11314), (206, 11326), (208, 11335), (211, 11347), (212, 11353), (217, 11377), (221, 11398), (223, 11407), (227, 11422), (232, 11446), (236, 11464), (242, 11497), (243, 11500), (246, 11512), (260, 11587), (264, 11617), (272, 11653), (290, 11761), (292, 11773), (296, 11797), (308, 11893), (309, 11896), (315, 11950), (318, 11989), (321, 12007), (325, 12037), (326, 12046), (328, 12070), (339, 12145), (342, 12163), (348, 12211),

Gene: Lunatic\_12 Start: 7531, Stop: 9636, Start Num: 11

Candidate Starts for Lunatic\_12:

(Start: 11 @7531 has 123 MA's), (Start: 13 @7552 has 3 MA's), (32, 7729), (34, 7738), (37, 7762), (39, 7834), (42, 7858), (49, 7957), (51, 8014), (54, 8035), (55, 8047), (57, 8056), (72, 8263), (75, 8281), (104, 8368), (125, 8437), (129, 8449), (140, 8497), (150, 8527), (155, 8542), (182, 8626), (183, 8629), (188, 8650), (197, 8680), (203, 8707), (211, 8740), (218, 8779), (225, 8806), (226, 8812), (230, 8827), (233, 8842), (246, 8872), (253, 8893), (255, 8905), (256, 8911), (263, 8959), (270, 8995), (281, 9043), (286, 9070), (287, 9091), (297, 9154), (301, 9178), (307, 9235), (320, 9340), (322, 9361), (328, 9415), (332, 9436), (334, 9457),

Gene: Luxx\_12 Start: 7564, Stop: 9669, Start Num: 11

Candidate Starts for Luxx\_12:

(Start: 11 @7564 has 123 MA's), (Start: 13 @7585 has 3 MA's), (32, 7762), (34, 7771), (37, 7795), (39, 7867), (42, 7891), (43, 7897), (51, 8047), (54, 8068), (55, 8080), (57, 8089), (72, 8296), (75, 8314), (104, 8401), (125, 8470), (129, 8482), (140, 8530), (150, 8560), (155, 8575), (170, 8611), (176, 8638), (182, 8659), (188, 8683), (195, 8707), (197, 8713), (203, 8740), (211, 8773), (218, 8812), (225, 8839), (230, 8860), (233, 8875), (245, 8902), (246, 8905), (253, 8926), (255, 8938), (256, 8944), (263, 8992), (279, 9067), (281, 9076), (286, 9103), (287, 9124), (297, 9187), (301, 9211), (307, 9268), (320, 9373), (322, 9394), (324, 9406), (328, 9448), (332, 9469), (334, 9490),

Gene: Madebyisha\_14 Start: 7627, Stop: 9732, Start Num: 11

Candidate Starts for Madebyisha\_14:

(Start: 11 @7627 has 123 MA's), (Start: 13 @7648 has 3 MA's), (32, 7825), (34, 7834), (37, 7858), (39, 7930), (42, 7954), (43, 7960), (51, 8110), (54, 8131), (55, 8143), (57, 8152), (72, 8359), (75, 8377), (104, 8464), (125, 8533), (129, 8545), (140, 8593), (150, 8623), (155, 8638), (176, 8701), (182, 8722), (188, 8746), (195, 8770), (197, 8776), (203, 8803), (211, 8836), (218, 8875), (225, 8902), (230, 8923),



(233, 8938), (245, 8965), (246, 8968), (253, 8989), (255, 9001), (256, 9007), (263, 9055), (270, 9091), (279, 9130), (281, 9139), (286, 9166), (287, 9187), (297, 9250), (301, 9274), (307, 9331), (320, 9436), (322, 9457), (324, 9469), (328, 9511), (332, 9532), (334, 9553), (350, 9682),

Gene: Majesty\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for Majesty\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Makoto\_14 Start: 9718, Stop: 12279, Start Num: 5

Candidate Starts for Makoto\_14:

(3, 9697), (Start: 5 @9718 has 83 MA's), (10, 9766), (18, 9847), (20, 9871), (30, 9943), (34, 9991), (35, 10006), (36, 10012), (47, 10174), (52, 10270), (56, 10303), (67, 10441), (72, 10519), (77, 10564), (79, 10573), (89, 10624), (92, 10642), (93, 10654), (97, 10678), (120, 10894), (141, 11005), (145, 11032), (148, 11050), (149, 11056), (152, 11080), (154, 11089), (161, 11137), (167, 11164), (175, 11194), (184, 11251), (188, 11266), (192, 11278), (193, 11284), (194, 11287), (197, 11296), (203, 11323), (206, 11335), (208, 11344), (211, 11356), (212, 11362), (217, 11386), (221, 11407), (223, 11416), (227, 11431), (232, 11455), (242, 11506), (243, 11509), (246, 11521), (260, 11596), (264, 11626), (272, 11662), (290, 11770), (292, 11782), (296, 11806), (308, 11902), (309, 11905), (313, 11938), (315, 11959), (321, 12016), (325, 12046), (326, 12055), (328, 12079), (339, 12154), (348, 12220),

Gene: MamaPearl\_14 Start: 9752, Stop: 12301, Start Num: 5

Candidate Starts for MamaPearl\_14:

(2, 9722), (Start: 5 @9752 has 83 MA's), (18, 9881), (21, 9917), (34, 10025), (35, 10040), (46, 10187), (47, 10208), (52, 10304), (63, 10394), (69, 10487), (77, 10598), (89, 10658), (91, 10667), (124, 10940), (133, 10994), (141, 11027), (144, 11048), (145, 11054), (148, 11072), (161, 11159), (176, 11222), (185, 11276), (187, 11285), (193, 11306), (197, 11318), (198, 11321), (203, 11345), (204, 11351), (206, 11357), (208, 11366), (211, 11378), (212, 11384), (216, 11405), (223, 11438), (227, 11453), (228, 11456), (232, 11477), (234, 11483), (236, 11495), (242, 11528), (243, 11531), (245, 11540), (246, 11543), (250, 11558), (263, 11642), (271, 11681), (290, 11792), (292, 11804), (299, 11849), (308, 11924), (309, 11927), (315, 11981), (325, 12068), (326, 12077), (328, 12101), (330, 12113), (338, 12170), (339, 12176), (348, 12242), (351, 12284),

Gene: ManAs\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for ManAs\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Maneater\_12 Start: 7528, Stop: 9633, Start Num: 11

Candidate Starts for Maneater\_12:

(Start: 11 @7528 has 123 MA's), (Start: 13 @7549 has 3 MA's), (32, 7726), (34, 7735), (37, 7759), (39, 7831), (42, 7855), (43, 7861), (51, 8011), (54, 8032), (55, 8044), (57, 8053), (72, 8260), (75, 8278), (104, 8365), (125, 8434), (129, 8446), (140, 8494), (150, 8524), (155, 8539), (170, 8575), (176, 8602),

(182, 8623), (188, 8647), (195, 8671), (197, 8677), (203, 8704), (211, 8737), (218, 8776), (225, 8803), (230, 8824), (233, 8839), (245, 8866), (246, 8869), (253, 8890), (255, 8902), (256, 8908), (263, 8956), (279, 9031), (281, 9040), (286, 9067), (287, 9088), (297, 9151), (301, 9175), (307, 9232), (320, 9337), (322, 9358), (324, 9370), (328, 9412), (332, 9433), (334, 9454),

Gene: Maria1952\_14 Start: 9744, Stop: 12302, Start Num: 5

Candidate Starts for Maria1952\_14:

(Start: 5 @9744 has 83 MA's), (7, 9753), (8, 9783), (18, 9873), (21, 9909), (34, 10017), (35, 10032), (47, 10200), (52, 10296), (76, 10569), (77, 10590), (84, 10620), (89, 10650), (100, 10737), (112, 10860), (122, 10935), (133, 10998), (141, 11031), (144, 11052), (145, 11058), (148, 11076), (149, 11082), (152, 11106), (158, 11148), (161, 11163), (163, 11169), (169, 11196), (182, 11247), (185, 11280), (187, 11289), (193, 11310), (197, 11322), (203, 11349), (206, 11361), (208, 11370), (211, 11382), (212, 11388), (213, 11391), (217, 11412), (223, 11442), (228, 11460), (232, 11481), (235, 11490), (236, 11499), (242, 11532), (243, 11535), (246, 11547), (250, 11562), (263, 11646), (264, 11652), (272, 11688), (284, 11745), (285, 11754), (290, 11796), (299, 11853), (308, 11928), (309, 11931), (312, 11961), (315, 11985), (321, 12042), (325, 12072), (326, 12081), (328, 12105), (330, 12117), (348, 12243),

Gene: MasterPitts\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for MasterPitts\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472), (350, 9601),

Gene: McShie\_12 Start: 7529, Stop: 9634, Start Num: 11

Candidate Starts for McShie\_12:

(Start: 11 @7529 has 123 MA's), (Start: 13 @7550 has 3 MA's), (32, 7727), (34, 7736), (37, 7760), (39, 7832), (42, 7856), (43, 7862), (49, 7955), (51, 8012), (54, 8033), (55, 8045), (57, 8054), (72, 8261), (75, 8279), (104, 8366), (125, 8435), (129, 8447), (140, 8495), (150, 8525), (155, 8540), (176, 8603), (182, 8624), (183, 8627), (197, 8678), (203, 8705), (211, 8738), (218, 8777), (225, 8804), (230, 8825), (233, 8840), (245, 8867), (253, 8891), (255, 8903), (256, 8909), (263, 8957), (281, 9041), (286, 9068), (287, 9089), (297, 9152), (301, 9176), (307, 9233), (320, 9338), (322, 9359), (324, 9371), (328, 9413), (332, 9434), (334, 9455), (350, 9584),

Gene: Megan\_30 Start: 21999, Stop: 24323, Start Num: 6

Candidate Starts for Megan\_30:

(2, 21969), (Start: 6 @21999 has 19 MA's), (22, 22179), (24, 22188), (29, 22215), (34, 22275), (40, 22383), (47, 22461), (51, 22554), (53, 22560), (56, 22590), (69, 22737), (86, 22860), (88, 22872), (105, 22938), (107, 22959), (123, 23064), (124, 23070), (132, 23118), (163, 23202), (174, 23250), (214, 23409), (218, 23433), (226, 23466), (240, 23502), (244, 23517), (245, 23523), (256, 23565), (262, 23598), (263, 23613), (265, 23625), (270, 23649), (274, 23664), (281, 23697), (287, 23745), (289, 23757), (297, 23808), (298, 23811), (305, 23856), (308, 23895), (312, 23928), (326, 24045), (328, 24069), (329, 24078), (352, 24279), (353, 24309), (354, 24312),

Gene: MeganNoll\_18 Start: 12624, Stop: 15185, Start Num: 5

Candidate Starts for MeganNoll\_18:

(3, 12603), (Start: 5 @12624 has 83 MA's), (10, 12672), (14, 12705), (18, 12753), (20, 12777), (21, 12789), (30, 12849), (34, 12897), (35, 12912), (36, 12918), (45, 13038), (47, 13080), (52, 13176), (53, 13179), (56, 13209), (62, 13263), (63, 13266), (71, 13404), (72, 13425), (76, 13449), (77, 13470), (79,

13479), (89, 13530), (92, 13548), (111, 13734), (133, 13878), (141, 13911), (145, 13938), (148, 13956), (149, 13962), (152, 13986), (154, 13995), (161, 14043), (167, 14070), (168, 14073), (173, 14094), (175, 14100), (176, 14106), (184, 14157), (188, 14172), (192, 14184), (193, 14190), (194, 14193), (197, 14202), (203, 14229), (206, 14241), (208, 14250), (211, 14262), (212, 14268), (216, 14289), (223, 14322), (232, 14361), (242, 14412), (243, 14415), (245, 14424), (246, 14427), (250, 14442), (264, 14532), (272, 14568), (290, 14676), (296, 14712), (308, 14808), (309, 14811), (315, 14865), (318, 14904), (325, 14952), (326, 14961), (328, 14985), (331, 15003), (338, 15054), (342, 15078), (345, 15096), (348, 15126),

Gene: MelBee03\_12 Start: 7533, Stop: 9638, Start Num: 11

Candidate Starts for MelBee03\_12:

(Start: 11 @7533 has 123 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (42, 7860), (43, 7866), (49, 7959), (51, 8016), (54, 8037), (55, 8049), (57, 8058), (72, 8265), (75, 8283), (104, 8370), (125, 8439), (129, 8451), (140, 8499), (150, 8529), (155, 8544), (170, 8580), (176, 8607), (183, 8631), (188, 8652), (195, 8676), (197, 8682), (203, 8709), (211, 8742), (218, 8781), (225, 8808), (230, 8829), (233, 8844), (245, 8871), (246, 8874), (255, 8907), (256, 8913), (263, 8961), (270, 8997), (281, 9045), (286, 9072), (287, 9093), (297, 9156), (301, 9180), (307, 9237), (320, 9342), (322, 9363), (324, 9375), (328, 9417), (332, 9438), (334, 9459), (350, 9588),

Gene: Miaurora\_12 Start: 7648, Stop: 9753, Start Num: 11

Candidate Starts for Miaurora\_12:

(Start: 11 @7648 has 123 MA's), (Start: 13 @7669 has 3 MA's), (32, 7846), (34, 7855), (37, 7879), (39, 7951), (42, 7975), (49, 8074), (51, 8131), (54, 8152), (55, 8164), (57, 8173), (72, 8380), (75, 8398), (104, 8485), (125, 8554), (129, 8566), (140, 8614), (150, 8644), (155, 8659), (174, 8713), (182, 8743), (183, 8746), (188, 8767), (197, 8797), (203, 8824), (211, 8857), (218, 8896), (225, 8923), (226, 8929), (230, 8944), (233, 8959), (245, 8986), (246, 8989), (253, 9010), (255, 9022), (256, 9028), (263, 9076), (270, 9112), (281, 9160), (286, 9187), (287, 9208), (297, 9271), (301, 9295), (307, 9352), (320, 9457), (322, 9478), (328, 9532), (332, 9553), (334, 9574),

Gene: Minima\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Minima\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: MirimarMandM\_12 Start: 7615, Stop: 9720, Start Num: 11

Candidate Starts for MirimarMandM\_12:

(Start: 11 @7615 has 123 MA's), (Start: 13 @7636 has 3 MA's), (32, 7813), (34, 7822), (37, 7846), (39, 7918), (42, 7942), (49, 8041), (51, 8098), (54, 8119), (55, 8131), (57, 8140), (72, 8347), (75, 8365), (104, 8452), (125, 8521), (129, 8533), (140, 8581), (150, 8611), (155, 8626), (174, 8680), (182, 8710), (183, 8713), (188, 8734), (197, 8764), (203, 8791), (211, 8824), (218, 8863), (225, 8890), (226, 8896), (230, 8911), (233, 8926), (246, 8956), (253, 8977), (255, 8989), (256, 8995), (263, 9043), (270, 9079), (281, 9127), (286, 9154), (287, 9175), (297, 9238), (301, 9262), (307, 9319), (320, 9424), (322, 9445), (324, 9457), (328, 9499), (332, 9520), (334, 9541),

Gene: Misaeng\_18 Start: 12684, Stop: 15242, Start Num: 5

Candidate Starts for Misaeng\_18:

(3, 12663), (Start: 5 @12684 has 83 MA's), (15, 12774), (18, 12813), (21, 12849), (35, 12972), (47, 13140), (50, 13185), (52, 13236), (53, 13239), (62, 13323), (77, 13530), (79, 13539), (83, 13557), (84,

13560), (91, 13599), (112, 13800), (117, 13851), (127, 13905), (145, 13998), (149, 14022), (159, 14091), (161, 14103), (163, 14109), (164, 14112), (169, 14136), (176, 14166), (182, 14187), (189, 14235), (193, 14250), (195, 14256), (198, 14265), (203, 14289), (206, 14301), (207, 14307), (211, 14322), (212, 14328), (213, 14331), (219, 14367), (221, 14373), (223, 14382), (228, 14400), (229, 14406), (232, 14421), (235, 14430), (238, 14448), (242, 14472), (243, 14475), (246, 14487), (251, 14505), (262, 14571), (263, 14586), (269, 14616), (271, 14625), (275, 14640), (284, 14685), (290, 14736), (296, 14772), (308, 14868), (309, 14871), (315, 14925), (318, 14964), (326, 15021), (328, 15045), (334, 15087), (338, 15114), (348, 15183),

Gene: Moki\_14 Start: 9720, Stop: 12287, Start Num: 5

Candidate Starts for Moki\_14:

(3, 9699), (Start: 5 @9720 has 83 MA's), (10, 9768), (18, 9849), (20, 9873), (30, 9945), (34, 9993), (35, 10008), (36, 10014), (47, 10176), (51, 10269), (52, 10272), (53, 10275), (56, 10305), (63, 10362), (71, 10500), (72, 10521), (77, 10566), (83, 10593), (89, 10626), (92, 10644), (98, 10686), (103, 10743), (141, 11007), (145, 11034), (148, 11052), (149, 11058), (152, 11082), (155, 11103), (161, 11139), (167, 11166), (175, 11196), (176, 11202), (184, 11253), (193, 11286), (203, 11325), (204, 11331), (206, 11337), (208, 11346), (211, 11358), (212, 11364), (217, 11388), (221, 11409), (223, 11418), (232, 11457), (236, 11475), (242, 11508), (243, 11511), (246, 11523), (250, 11538), (259, 11589), (263, 11622), (266, 11640), (272, 11664), (281, 11706), (290, 11772), (292, 11784), (299, 11829), (308, 11904), (309, 11907), (315, 11961), (318, 12000), (322, 12027), (326, 12057), (327, 12069), (328, 12081), (329, 12090), (338, 12156), (345, 12198), (348, 12228),

Gene: Moss\_16 Start: 10335, Stop: 12755, Start Num: 6

Candidate Starts for Moss\_16:

(Start: 6 @10335 has 19 MA's), (17, 10422), (26, 10527), (29, 10539), (34, 10599), (41, 10710), (48, 10791), (57, 10917), (60, 10932), (65, 10986), (77, 11160), (95, 11244), (98, 11265), (102, 11307), (119, 11433), (123, 11454), (128, 11487), (140, 11544), (146, 11586), (150, 11601), (157, 11652), (169, 11688), (171, 11694), (194, 11796), (200, 11817), (209, 11859), (222, 11919), (223, 11925), (235, 11973), (260, 12069), (292, 12246), (294, 12258), (302, 12309), (311, 12390), (318, 12459), (323, 12495), (333, 12576), (336, 12591), (346, 12663), (349, 12687),

Gene: MrGloopy\_18 Start: 12558, Stop: 15119, Start Num: 5

Candidate Starts for MrGloopy\_18:

(3, 12537), (Start: 5 @12558 has 83 MA's), (10, 12606), (14, 12639), (18, 12687), (20, 12711), (21, 12723), (30, 12783), (34, 12831), (35, 12846), (36, 12852), (45, 12972), (47, 13014), (52, 13110), (53, 13113), (56, 13143), (62, 13197), (71, 13338), (72, 13359), (76, 13383), (77, 13404), (79, 13413), (89, 13464), (92, 13482), (111, 13668), (133, 13812), (141, 13845), (145, 13872), (148, 13890), (149, 13896), (152, 13920), (154, 13929), (161, 13977), (167, 14004), (175, 14034), (176, 14040), (184, 14091), (188, 14106), (192, 14118), (193, 14124), (194, 14127), (197, 14136), (203, 14163), (206, 14175), (208, 14184), (211, 14196), (212, 14202), (216, 14223), (223, 14256), (232, 14295), (242, 14346), (243, 14349), (245, 14358), (246, 14361), (250, 14376), (264, 14466), (272, 14502), (290, 14610), (296, 14646), (308, 14742), (309, 14745), (315, 14799), (318, 14838), (325, 14886), (326, 14895), (328, 14919), (331, 14937), (338, 14988), (342, 15012), (345, 15030), (348, 15060),

Gene: MrGreen\_12 Start: 7553, Stop: 9658, Start Num: 11

Candidate Starts for MrGreen\_12:

(Start: 11 @7553 has 123 MA's), (Start: 13 @7574 has 3 MA's), (32, 7751), (34, 7760), (37, 7784), (39, 7856), (42, 7880), (43, 7886), (49, 7979), (51, 8036), (54, 8057), (55, 8069), (57, 8078), (72, 8285), (75, 8303), (104, 8390), (125, 8459), (129, 8471), (140, 8519), (150, 8549), (155, 8564), (176, 8627), (183, 8651), (188, 8672), (195, 8696), (197, 8702), (203, 8729), (211, 8762), (218, 8801), (226, 8834), (230, 8849), (233, 8864), (245, 8891), (255, 8927), (256, 8933), (263, 8981), (281, 9065), (286, 9092), (287, 9113), (297, 9176), (301, 9200), (307, 9257), (320, 9362), (322, 9383), (324, 9395), (328, 9437), (332, 9458), (334, 9479), (350, 9608),

Gene: Myram\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Myram\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Mysterium\_16 Start: 10336, Stop: 12756, Start Num: 6

Candidate Starts for Mysterium\_16:

(Start: 6 @10336 has 19 MA's), (17, 10423), (26, 10528), (29, 10540), (34, 10600), (41, 10711), (48, 10792), (57, 10918), (60, 10933), (65, 10987), (77, 11161), (95, 11245), (98, 11266), (102, 11308), (119, 11434), (123, 11455), (128, 11488), (140, 11545), (146, 11587), (150, 11602), (157, 11653), (169, 11689), (171, 11695), (194, 11797), (200, 11818), (209, 11860), (222, 11920), (223, 11926), (235, 11974), (260, 12070), (288, 12226), (292, 12247), (294, 12259), (302, 12310), (318, 12460), (323, 12496), (333, 12577), (346, 12664), (349, 12688),

Gene: Naby\_12 Start: 7240, Stop: 9339, Start Num: 11

Candidate Starts for Naby\_12:

(Start: 11 @7240 has 123 MA's), (12, 7255), (Start: 13 @7261 has 3 MA's), (19, 7321), (26, 7375), (32, 7438), (34, 7447), (37, 7471), (39, 7543), (42, 7567), (49, 7666), (51, 7723), (55, 7756), (57, 7765), (87, 8032), (104, 8077), (126, 8149), (134, 8179), (150, 8236), (155, 8251), (178, 8320), (190, 8365), (195, 8383), (197, 8389), (211, 8449), (212, 8455), (215, 8470), (218, 8488), (225, 8515), (240, 8557), (253, 8602), (256, 8620), (261, 8647), (278, 8734), (281, 8752), (286, 8779), (291, 8821), (297, 8863), (298, 8866), (301, 8887), (314, 8998), (322, 9070), (324, 9082), (327, 9112), (328, 9124), (332, 9145), (335, 9169), (347, 9253), (350, 9289),

Gene: Namsahir\_12 Start: 7603, Stop: 9708, Start Num: 11

Candidate Starts for Namsahir\_12:

(Start: 11 @7603 has 123 MA's), (Start: 13 @7624 has 3 MA's), (32, 7801), (34, 7810), (37, 7834), (39, 7906), (42, 7930), (49, 8029), (54, 8107), (55, 8119), (57, 8128), (72, 8335), (75, 8353), (104, 8440), (125, 8509), (129, 8521), (140, 8569), (150, 8599), (155, 8614), (174, 8668), (182, 8698), (183, 8701), (188, 8722), (197, 8752), (203, 8779), (211, 8812), (218, 8851), (225, 8878), (226, 8884), (230, 8899), (233, 8914), (245, 8941), (246, 8944), (253, 8965), (255, 8977), (256, 8983), (263, 9031), (270, 9067), (281, 9115), (286, 9142), (287, 9163), (297, 9226), (301, 9250), (307, 9307), (320, 9412), (322, 9433), (328, 9487), (332, 9508), (334, 9529),

Gene: Nancia\_14 Start: 9717, Stop: 12278, Start Num: 5

Candidate Starts for Nancia\_14:

(3, 9696), (Start: 5 @9717 has 83 MA's), (10, 9765), (18, 9846), (20, 9870), (30, 9942), (34, 9990), (35, 10005), (36, 10011), (45, 10131), (47, 10173), (52, 10269), (53, 10272), (56, 10302), (67, 10440), (72, 10518), (77, 10563), (79, 10572), (89, 10623), (92, 10641), (93, 10653), (97, 10677), (120, 10893), (137, 10983), (141, 11004), (145, 11031), (148, 11049), (149, 11055), (152, 11079), (154, 11088), (161, 11136), (167, 11163), (175, 11193), (184, 11250), (188, 11265), (192, 11277), (193, 11283), (194, 11286), (197, 11295), (203, 11322), (206, 11334), (208, 11343), (211, 11355), (212, 11361), (217, 11385), (221, 11406), (223, 11415), (227, 11430), (232, 11454), (242, 11505), (243, 11508), (246, 11520), (260, 11595), (264, 11625), (272, 11661), (290, 11769), (292, 11781), (296, 11805), (308, 11901), (309, 11904), (313, 11937), (315, 11958), (318, 11997), (321, 12015), (325, 12045), (326, 12054), (328, 12078), (339, 12153), (348, 12219),

Gene: NeumannU\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for NeumannU\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Niffler\_12 Start: 7621, Stop: 9726, Start Num: 11

Candidate Starts for Niffler\_12:

(Start: 11 @7621 has 123 MA's), (Start: 13 @7642 has 3 MA's), (32, 7819), (34, 7828), (37, 7852), (39, 7924), (42, 7948), (49, 8047), (51, 8104), (54, 8125), (55, 8137), (57, 8146), (72, 8353), (75, 8371), (104, 8458), (125, 8527), (129, 8539), (140, 8587), (150, 8617), (155, 8632), (182, 8716), (183, 8719), (188, 8740), (197, 8770), (203, 8797), (211, 8830), (218, 8869), (225, 8896), (226, 8902), (230, 8917), (233, 8932), (246, 8962), (253, 8983), (255, 8995), (256, 9001), (263, 9049), (270, 9085), (281, 9133), (286, 9160), (287, 9181), (297, 9244), (301, 9268), (307, 9325), (320, 9430), (322, 9451), (328, 9505), (332, 9526), (334, 9547),

Gene: Nobel\_12 Start: 7648, Stop: 9753, Start Num: 11

Candidate Starts for Nobel\_12:

(Start: 11 @7648 has 123 MA's), (Start: 13 @7669 has 3 MA's), (32, 7846), (34, 7855), (37, 7879), (39, 7951), (42, 7975), (49, 8074), (51, 8131), (54, 8152), (55, 8164), (57, 8173), (72, 8380), (75, 8398), (104, 8485), (125, 8554), (129, 8566), (140, 8614), (150, 8644), (155, 8659), (182, 8743), (183, 8746), (188, 8767), (197, 8797), (203, 8824), (211, 8857), (218, 8896), (225, 8923), (226, 8929), (230, 8944), (233, 8959), (246, 8989), (253, 9010), (255, 9022), (256, 9028), (263, 9076), (270, 9112), (281, 9160), (286, 9187), (287, 9208), (297, 9271), (301, 9295), (307, 9352), (320, 9457), (322, 9478), (328, 9532), (332, 9553), (334, 9574),

Gene: Noelani\_12 Start: 7514, Stop: 9619, Start Num: 11

Candidate Starts for Noelani\_12:

(Start: 11 @7514 has 123 MA's), (Start: 13 @7535 has 3 MA's), (31, 7703), (32, 7712), (37, 7745), (39, 7817), (42, 7841), (51, 7997), (54, 8018), (57, 8039), (72, 8246), (75, 8264), (104, 8351), (125, 8420), (140, 8480), (150, 8510), (155, 8525), (170, 8561), (176, 8588), (182, 8609), (188, 8633), (195, 8657), (197, 8663), (203, 8690), (218, 8762), (225, 8789), (230, 8810), (233, 8825), (245, 8852), (246, 8855), (253, 8876), (255, 8888), (256, 8894), (263, 8942), (279, 9017), (281, 9026), (286, 9053), (287, 9074), (297, 9137), (301, 9161), (305, 9185), (307, 9218), (314, 9272), (322, 9344), (324, 9356), (328, 9398), (332, 9419), (334, 9440), (344, 9518), (350, 9569),

Gene: Nubia\_18 Start: 12596, Stop: 15157, Start Num: 5

Candidate Starts for Nubia\_18:

(3, 12575), (Start: 5 @12596 has 83 MA's), (15, 12686), (18, 12725), (21, 12761), (30, 12821), (34, 12869), (35, 12884), (47, 13052), (50, 13097), (52, 13148), (53, 13151), (62, 13235), (76, 13421), (81, 13457), (83, 13469), (91, 13511), (127, 13820), (145, 13913), (148, 13931), (149, 13937), (161, 14018), (163, 14024), (169, 14051), (176, 14081), (187, 14144), (192, 14159), (193, 14165), (194, 14168), (198, 14180), (203, 14204), (206, 14216), (207, 14222), (211, 14237), (212, 14243), (213, 14246), (217, 14267), (219, 14282), (221, 14288), (223, 14297), (228, 14315), (229, 14321), (232, 14336), (235, 14345), (236, 14354), (242, 14387), (243, 14390), (246, 14402), (248, 14408), (251, 14420), (259, 14468), (262, 14486), (263, 14501), (269, 14531), (271, 14540), (284, 14600), (290, 14651), (296, 14687), (299, 14708), (308, 14783), (309, 14786), (315, 14840), (318, 14879), (326, 14936), (328, 14960), (334, 15002), (338, 15029), (348, 15098),

Gene: OMalley\_14 Start: 9738, Stop: 12296, Start Num: 5

Candidate Starts for OMalley\_14:

(Start: 5 @9738 has 83 MA's), (7, 9747), (8, 9777), (18, 9867), (30, 9963), (33, 10008), (35, 10026), (47, 10194), (52, 10290), (53, 10293), (54, 10308), (64, 10395), (81, 10599), (82, 10602), (95, 10686), (133, 10992), (145, 11052), (148, 11070), (149, 11076), (154, 11109), (155, 11121), (161, 11157), (167, 11184), (173, 11208), (175, 11214), (184, 11271), (191, 11295), (193, 11304), (198, 11319), (203, 11343), (206, 11355), (211, 11376), (212, 11382), (216, 11403), (221, 11427), (223, 11436), (228, 11454), (232, 11475), (234, 11481), (236, 11493), (242, 11526), (243, 11529), (246, 11541), (250, 11556), (251, 11559), (264, 11646), (283, 11736), (284, 11739), (290, 11790), (299, 11847), (300, 11856), (303, 11868), (308, 11922), (309, 11925), (315, 11979), (318, 12018), (325, 12066), (326, 12075), (328, 12099), (330, 12111), (345, 12207), (348, 12237),

Gene: Oaklynn\_12 Start: 7555, Stop: 9639, Start Num: 13

Candidate Starts for Oaklynn\_12:

(Start: 11 @7534 has 123 MA's), (Start: 13 @7555 has 3 MA's), (32, 7732), (34, 7741), (37, 7765), (39, 7837), (42, 7861), (43, 7867), (51, 8017), (54, 8038), (55, 8050), (57, 8059), (72, 8266), (75, 8284), (104, 8371), (125, 8440), (129, 8452), (140, 8500), (150, 8530), (155, 8545), (176, 8608), (182, 8629), (183, 8632), (197, 8683), (203, 8710), (211, 8743), (218, 8782), (225, 8809), (230, 8830), (233, 8845), (245, 8872), (253, 8896), (255, 8908), (256, 8914), (263, 8962), (281, 9046), (286, 9073), (287, 9094), (297, 9157), (301, 9181), (305, 9205), (306, 9226), (320, 9343), (322, 9364), (324, 9376), (328, 9418), (332, 9439), (334, 9460), (350, 9589),

Gene: Octopus\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Octopus\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Otwor\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Otwor\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: OurGirlNessie\_14 Start: 9709, Stop: 12270, Start Num: 5

Candidate Starts for OurGirlNessie\_14:

(3, 9688), (Start: 5 @9709 has 83 MA's), (10, 9757), (18, 9838), (20, 9862), (30, 9934), (34, 9982), (35, 9997), (36, 10003), (47, 10165), (52, 10261), (56, 10294), (67, 10432), (72, 10510), (76, 10534), (77, 10555), (79, 10564), (89, 10615), (92, 10633), (93, 10645), (97, 10669), (120, 10885), (137, 10975), (141, 10996), (145, 11023), (148, 11041), (149, 11047), (152, 11071), (154, 11080), (161, 11128), (167, 11155), (175, 11185), (184, 11242), (188, 11257), (192, 11269), (193, 11275), (194, 11278), (197, 11287), (203, 11314), (206, 11326), (208, 11335), (211, 11347), (212, 11353), (217, 11377), (221, 11398), (223, 11407), (227, 11422), (232, 11446), (236, 11464), (242, 11497), (243, 11500), (246, 11512), (260, 11587), (264, 11617), (272, 11653), (277, 11674), (290, 11761), (292, 11773), (295, 11794), (296, 11797), (308, 11893), (309, 11896), (313, 11929), (315, 11950), (318, 11989),

(321, 12007), (325, 12037), (326, 12046), (339, 12145), (348, 12211),

Gene: Owens\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for Owens\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Oxynfrius\_18 Start: 12609, Stop: 15170, Start Num: 5

Candidate Starts for Oxynfrius\_18:

(3, 12588), (Start: 5 @12609 has 83 MA's), (15, 12699), (18, 12738), (21, 12774), (30, 12834), (34, 12882), (35, 12897), (47, 13065), (50, 13110), (52, 13161), (53, 13164), (62, 13248), (76, 13434), (81, 13470), (83, 13482), (91, 13524), (103, 13635), (127, 13833), (145, 13926), (149, 13950), (150, 13953), (161, 14031), (163, 14037), (169, 14064), (176, 14094), (187, 14157), (192, 14172), (194, 14181), (195, 14184), (198, 14193), (203, 14217), (206, 14229), (207, 14235), (211, 14250), (212, 14256), (213, 14259), (217, 14280), (219, 14295), (223, 14310), (228, 14328), (229, 14334), (232, 14349), (235, 14358), (236, 14367), (242, 14400), (243, 14403), (246, 14415), (248, 14421), (251, 14433), (262, 14499), (263, 14514), (269, 14544), (271, 14553), (290, 14664), (296, 14700), (299, 14721), (308, 14796), (309, 14799), (315, 14853), (318, 14892), (326, 14949), (328, 14973), (334, 15015), (338, 15042), (348, 15111),

Gene: PaoPu\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for PaoPu\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: PartyCup\_18 Start: 12644, Stop: 15199, Start Num: 5

Candidate Starts for PartyCup\_18:

(3, 12623), (Start: 5 @12644 has 83 MA's), (10, 12692), (18, 12773), (20, 12797), (30, 12869), (34, 12917), (35, 12932), (36, 12938), (47, 13100), (50, 13145), (52, 13196), (53, 13199), (56, 13229), (67, 13367), (77, 13490), (89, 13550), (92, 13568), (94, 13583), (100, 13634), (127, 13865), (142, 13934), (145, 13958), (148, 13976), (149, 13982), (156, 14036), (158, 14048), (163, 14069), (168, 14093), (185, 14180), (192, 14204), (193, 14210), (194, 14213), (198, 14225), (202, 14246), (203, 14249), (204, 14255), (206, 14261), (210, 14279), (211, 14282), (212, 14288), (221, 14333), (223, 14342), (228, 14360), (232, 14381), (235, 14390), (236, 14399), (242, 14432), (243, 14435), (245, 14444), (246, 14447), (257, 14498), (272, 14588), (290, 14696), (292, 14708), (295, 14729), (296, 14732), (308, 14828), (309, 14831), (315, 14885), (318, 14924), (326, 14981), (331, 15023), (338, 15071), (345, 15113), (348, 15143),

Gene: Picnic\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Picnic\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614),



(182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: PinkFriday\_14 Start: 9750, Stop: 12308, Start Num: 5

Candidate Starts for PinkFriday\_14:

(Start: 5 @9750 has 83 MA's), (7, 9759), (18, 9879), (34, 10023), (35, 10038), (47, 10206), (52, 10302), (58, 10347), (63, 10392), (76, 10575), (77, 10596), (79, 10605), (81, 10611), (83, 10623), (89, 10656), (100, 10743), (141, 11037), (144, 11058), (145, 11064), (148, 11082), (149, 11088), (152, 11112), (161, 11169), (167, 11196), (175, 11226), (176, 11232), (184, 11283), (188, 11298), (192, 11310), (194, 11319), (197, 11328), (203, 11355), (206, 11367), (208, 11376), (211, 11388), (212, 11394), (223, 11448), (228, 11466), (231, 11484), (232, 11487), (235, 11496), (236, 11505), (239, 11517), (242, 11538), (243, 11541), (246, 11553), (250, 11568), (263, 11652), (264, 11658), (272, 11694), (284, 11751), (290, 11802), (292, 11814), (299, 11859), (308, 11934), (309, 11937), (312, 11967), (313, 11970), (318, 12030), (321, 12048), (325, 12078), (326, 12087), (328, 12111), (330, 12123), (345, 12219), (348, 12249),

Gene: PitaDog\_14 Start: 9708, Stop: 12269, Start Num: 5

Candidate Starts for PitaDog\_14:

(3, 9687), (Start: 5 @9708 has 83 MA's), (10, 9756), (18, 9837), (20, 9861), (30, 9933), (34, 9981), (35, 9996), (36, 10002), (47, 10164), (52, 10260), (56, 10293), (67, 10431), (72, 10509), (77, 10554), (79, 10563), (89, 10614), (92, 10632), (97, 10668), (120, 10884), (137, 10974), (141, 10995), (145, 11022), (148, 11040), (149, 11046), (152, 11070), (154, 11079), (161, 11127), (167, 11154), (175, 11184), (184, 11241), (188, 11256), (192, 11268), (193, 11274), (194, 11277), (197, 11286), (203, 11313), (206, 11325), (208, 11334), (211, 11346), (212, 11352), (217, 11376), (221, 11397), (223, 11406), (227, 11421), (232, 11445), (236, 11463), (242, 11496), (243, 11499), (246, 11511), (264, 11616), (272, 11652), (290, 11760), (292, 11772), (296, 11796), (308, 11892), (309, 11895), (313, 11928), (315, 11949), (318, 11988), (321, 12006), (325, 12036), (326, 12045), (328, 12069), (339, 12144), (348, 12210),

Gene: PoRanda\_12 Start: 7615, Stop: 9720, Start Num: 11

Candidate Starts for PoRanda\_12:

(Start: 11 @7615 has 123 MA's), (Start: 13 @7636 has 3 MA's), (32, 7813), (34, 7822), (37, 7846), (39, 7918), (42, 7942), (49, 8041), (51, 8098), (54, 8119), (55, 8131), (57, 8140), (72, 8347), (75, 8365), (104, 8452), (125, 8521), (129, 8533), (140, 8581), (150, 8611), (155, 8626), (174, 8680), (182, 8710), (183, 8713), (188, 8734), (197, 8764), (203, 8791), (211, 8824), (218, 8863), (225, 8890), (226, 8896), (230, 8911), (233, 8926), (246, 8956), (253, 8977), (255, 8989), (256, 8995), (263, 9043), (270, 9079), (281, 9127), (286, 9154), (287, 9175), (297, 9238), (301, 9262), (307, 9319), (320, 9424), (322, 9445), (324, 9457), (328, 9499), (332, 9520), (334, 9541),

Gene: Pondwater\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Pondwater\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Potatoes\_18 Start: 12619, Stop: 15180, Start Num: 5

Candidate Starts for Potatoes\_18:

(3, 12598), (Start: 5 @12619 has 83 MA's), (10, 12667), (14, 12700), (18, 12748), (20, 12772), (21, 12784), (30, 12844), (34, 12892), (35, 12907), (36, 12913), (45, 13033), (47, 13075), (51, 13168), (52, 13171), (53, 13174), (56, 13204), (62, 13258), (71, 13399), (72, 13420), (76, 13444), (77, 13465), (79, 13474), (89, 13525), (92, 13543), (96, 13567), (111, 13729), (133, 13873), (141, 13906), (145, 13933), (148, 13951), (149, 13957), (152, 13981), (154, 13990), (161, 14038), (167, 14065), (173, 14089), (175, 14095), (176, 14101), (184, 14152), (188, 14167), (192, 14179), (193, 14185), (194, 14188), (197, 14197), (203, 14224), (206, 14236), (208, 14245), (211, 14257), (212, 14263), (216, 14284), (223, 14317), (232, 14356), (242, 14407), (243, 14410), (245, 14419), (246, 14422), (250, 14437), (263, 14521), (264, 14527), (272, 14563), (290, 14671), (292, 14683), (296, 14707), (308, 14803), (309, 14806), (315, 14860), (318, 14899), (325, 14947), (326, 14956), (328, 14980), (331, 14998), (338, 15049), (342, 15073), (345, 15091), (348, 15121),

Gene: Preamble\_14 Start: 9721, Stop: 12279, Start Num: 5

Candidate Starts for Preamble\_14:

(3, 9700), (Start: 5 @9721 has 83 MA's), (10, 9769), (18, 9850), (30, 9946), (33, 9991), (35, 10009), (36, 10015), (46, 10156), (47, 10177), (50, 10222), (52, 10273), (53, 10276), (56, 10306), (70, 10489), (77, 10567), (79, 10576), (81, 10582), (83, 10594), (89, 10627), (95, 10669), (100, 10714), (111, 10834), (112, 10837), (133, 10975), (145, 11035), (148, 11053), (149, 11059), (153, 11089), (161, 11140), (163, 11146), (172, 11188), (176, 11203), (179, 11212), (185, 11257), (187, 11266), (193, 11287), (197, 11299), (198, 11302), (202, 11323), (203, 11326), (204, 11332), (206, 11338), (211, 11359), (212, 11365), (216, 11386), (221, 11410), (223, 11419), (228, 11437), (232, 11458), (242, 11509), (243, 11512), (245, 11521), (246, 11524), (264, 11629), (267, 11644), (271, 11662), (285, 11731), (290, 11773), (292, 11785), (295, 11806), (296, 11809), (308, 11905), (309, 11908), (315, 11962), (318, 12001), (321, 12019), (325, 12049), (326, 12058), (331, 12100), (348, 12220),

Gene: Pterodactyl\_14 Start: 9710, Stop: 12271, Start Num: 5

Candidate Starts for Pterodactyl\_14:

(3, 9689), (Start: 5 @9710 has 83 MA's), (10, 9758), (18, 9839), (20, 9863), (30, 9935), (34, 9983), (35, 9998), (36, 10004), (47, 10166), (52, 10262), (56, 10295), (67, 10433), (72, 10511), (77, 10556), (79, 10565), (89, 10616), (92, 10634), (93, 10646), (97, 10670), (120, 10886), (141, 10997), (145, 11024), (148, 11042), (149, 11048), (152, 11072), (154, 11081), (161, 11129), (167, 11156), (175, 11186), (184, 11243), (188, 11258), (192, 11270), (193, 11276), (194, 11279), (197, 11288), (203, 11315), (206, 11327), (208, 11336), (211, 11348), (212, 11354), (217, 11378), (221, 11399), (223, 11408), (227, 11423), (232, 11447), (242, 11498), (243, 11501), (246, 11513), (260, 11588), (264, 11618), (272, 11654), (290, 11762), (292, 11774), (296, 11798), (308, 11894), (309, 11897), (313, 11930), (315, 11951), (318, 11990), (321, 12008), (325, 12038), (326, 12047), (339, 12146), (348, 12212),

Gene: Publix\_12 Start: 7603, Stop: 9708, Start Num: 11

Candidate Starts for Publix\_12:

(Start: 11 @7603 has 123 MA's), (Start: 13 @7624 has 3 MA's), (32, 7801), (34, 7810), (37, 7834), (39, 7906), (42, 7930), (49, 8029), (54, 8107), (55, 8119), (57, 8128), (72, 8335), (75, 8353), (104, 8440), (125, 8509), (129, 8521), (140, 8569), (150, 8599), (155, 8614), (174, 8668), (182, 8698), (183, 8701), (188, 8722), (197, 8752), (203, 8779), (211, 8812), (218, 8851), (225, 8878), (226, 8884), (230, 8899), (233, 8914), (245, 8941), (246, 8944), (253, 8965), (255, 8977), (256, 8983), (263, 9031), (270, 9067), (281, 9115), (286, 9142), (287, 9163), (297, 9226), (301, 9250), (307, 9307), (320, 9412), (322, 9433), (328, 9487), (332, 9508), (334, 9529),

Gene: Puddles3\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Puddles3\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815),

(230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: PuffyCat\_12 Start: 7573, Stop: 9678, Start Num: 11

Candidate Starts for PuffyCat\_12:

(Start: 11 @7573 has 123 MA's), (Start: 13 @7594 has 3 MA's), (32, 7771), (34, 7780), (37, 7804), (39, 7876), (42, 7900), (49, 7999), (51, 8056), (54, 8077), (55, 8089), (57, 8098), (72, 8305), (75, 8323), (104, 8410), (125, 8479), (129, 8491), (140, 8539), (150, 8569), (155, 8584), (182, 8668), (183, 8671), (188, 8692), (197, 8722), (203, 8749), (211, 8782), (218, 8821), (225, 8848), (226, 8854), (230, 8869), (233, 8884), (246, 8914), (253, 8935), (255, 8947), (256, 8953), (263, 9001), (270, 9037), (281, 9085), (286, 9112), (287, 9133), (297, 9196), (301, 9220), (307, 9277), (320, 9382), (322, 9403), (328, 9457), (332, 9478), (334, 9499),

Gene: Pumancara\_14 Start: 9749, Stop: 12307, Start Num: 5

Candidate Starts for Pumancara\_14:

(Start: 5 @9749 has 83 MA's), (7, 9758), (18, 9878), (34, 10022), (35, 10037), (47, 10205), (52, 10301), (58, 10346), (63, 10391), (76, 10574), (77, 10595), (79, 10604), (81, 10610), (83, 10622), (89, 10655), (100, 10742), (112, 10865), (122, 10940), (133, 11003), (141, 11036), (144, 11057), (145, 11063), (148, 11081), (149, 11087), (152, 11111), (158, 11153), (161, 11168), (163, 11174), (182, 11252), (185, 11285), (187, 11294), (193, 11315), (197, 11327), (203, 11354), (206, 11366), (208, 11375), (211, 11387), (212, 11393), (213, 11396), (217, 11417), (223, 11447), (228, 11465), (231, 11483), (232, 11486), (235, 11495), (236, 11504), (242, 11537), (243, 11540), (246, 11552), (250, 11567), (263, 11651), (264, 11657), (272, 11693), (284, 11750), (290, 11801), (292, 11813), (299, 11858), (308, 11933), (309, 11936), (312, 11966), (318, 12029), (325, 12077), (326, 12086), (328, 12110), (330, 12122), (348, 12248),

Gene: Quaker\_12 Start: 7533, Stop: 9638, Start Num: 11

Candidate Starts for Quaker\_12:

(Start: 11 @7533 has 123 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (42, 7860), (43, 7866), (49, 7959), (51, 8016), (54, 8037), (55, 8049), (57, 8058), (72, 8265), (75, 8283), (104, 8370), (125, 8439), (129, 8451), (140, 8499), (150, 8529), (155, 8544), (176, 8607), (183, 8631), (188, 8652), (195, 8676), (197, 8682), (203, 8709), (211, 8742), (218, 8781), (230, 8829), (233, 8844), (245, 8871), (246, 8874), (255, 8907), (256, 8913), (263, 8961), (281, 9045), (286, 9072), (287, 9093), (297, 9156), (301, 9180), (307, 9237), (320, 9342), (322, 9363), (324, 9375), (328, 9417), (332, 9438), (334, 9459), (350, 9588),

Gene: RAP15\_18 Start: 12624, Stop: 15185, Start Num: 5

Candidate Starts for RAP15\_18:

(3, 12603), (Start: 5 @12624 has 83 MA's), (10, 12672), (14, 12705), (18, 12753), (20, 12777), (21, 12789), (30, 12849), (34, 12897), (35, 12912), (36, 12918), (45, 13038), (47, 13080), (52, 13176), (53, 13179), (56, 13209), (62, 13263), (63, 13266), (71, 13404), (72, 13425), (76, 13449), (77, 13470), (79, 13479), (89, 13530), (92, 13548), (111, 13734), (133, 13878), (141, 13911), (145, 13938), (148, 13956), (149, 13962), (152, 13986), (154, 13995), (161, 14043), (167, 14070), (168, 14073), (173, 14094), (175, 14100), (176, 14106), (184, 14157), (188, 14172), (192, 14184), (193, 14190), (194, 14193), (197, 14202), (203, 14229), (206, 14241), (208, 14250), (211, 14262), (212, 14268), (216, 14289), (223, 14322), (232, 14361), (242, 14412), (243, 14415), (245, 14424), (246, 14427), (250, 14442), (264, 14532), (272, 14568), (290, 14676), (296, 14712), (308, 14808), (309, 14811), (315, 14865), (318, 14904), (325, 14952), (326, 14961), (328, 14985), (331, 15003), (338, 15054), (342, 15078), (345, 15096), (348, 15126),

Gene: RcigaStruga\_18 Start: 12617, Stop: 15178, Start Num: 5

Candidate Starts for RcigaStruga\_18:

(3, 12596), (Start: 5 @12617 has 83 MA's), (15, 12707), (18, 12746), (21, 12782), (30, 12842), (35, 12905), (47, 13073), (50, 13118), (51, 13166), (52, 13169), (53, 13172), (62, 13256), (63, 13259), (71, 13397), (77, 13463), (83, 13490), (91, 13532), (127, 13841), (133, 13874), (145, 13934), (149, 13958), (161, 14039), (163, 14045), (164, 14048), (169, 14072), (176, 14102), (182, 14123), (189, 14171), (193, 14186), (198, 14201), (203, 14225), (206, 14237), (207, 14243), (211, 14258), (212, 14264), (219, 14303), (221, 14309), (223, 14318), (228, 14336), (229, 14342), (231, 14354), (232, 14357), (235, 14366), (238, 14384), (242, 14408), (243, 14411), (246, 14423), (251, 14441), (262, 14507), (263, 14522), (269, 14552), (271, 14561), (284, 14621), (290, 14672), (296, 14708), (308, 14804), (309, 14807), (315, 14861), (318, 14900), (322, 14927), (326, 14957), (328, 14981), (334, 15023), (338, 15050), (348, 15119),

Gene: Rhogar\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for Rhogar\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Rhysand\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Rhysand\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: Riovina\_14 Start: 9738, Stop: 12296, Start Num: 5

Candidate Starts for Riovina\_14:

(Start: 5 @9738 has 83 MA's), (7, 9747), (8, 9777), (18, 9867), (30, 9963), (33, 10008), (35, 10026), (47, 10194), (52, 10290), (53, 10293), (54, 10308), (64, 10395), (81, 10599), (82, 10602), (95, 10686), (133, 10992), (145, 11052), (148, 11070), (149, 11076), (154, 11109), (155, 11121), (161, 11157), (167, 11184), (173, 11208), (175, 11214), (184, 11271), (191, 11295), (193, 11304), (198, 11319), (203, 11343), (206, 11355), (211, 11376), (212, 11382), (216, 11403), (221, 11427), (223, 11436), (228, 11454), (232, 11475), (234, 11481), (236, 11493), (242, 11526), (243, 11529), (246, 11541), (250, 11556), (251, 11559), (264, 11646), (283, 11736), (284, 11739), (290, 11790), (299, 11847), (300, 11856), (303, 11868), (308, 11922), (309, 11925), (315, 11979), (318, 12018), (325, 12066), (326, 12075), (328, 12099), (330, 12111), (345, 12207), (348, 12237),

Gene: Riverdale\_18 Start: 12554, Stop: 15115, Start Num: 5

Candidate Starts for Riverdale\_18:

(3, 12533), (Start: 5 @12554 has 83 MA's), (10, 12602), (14, 12635), (18, 12683), (20, 12707), (21, 12719), (30, 12779), (34, 12827), (35, 12842), (36, 12848), (45, 12968), (47, 13010), (52, 13106), (53, 13109), (56, 13139), (62, 13193), (71, 13334), (72, 13355), (76, 13379), (77, 13400), (79, 13409), (89, 13460), (92, 13478), (133, 13808), (141, 13841), (145, 13868), (148, 13886), (149, 13892), (152, 13916), (154, 13925), (161, 13973), (167, 14000), (175, 14030), (176, 14036), (184, 14087), (188, 14102), (192, 14114), (193, 14120), (194, 14123), (203, 14159), (206, 14171), (208, 14180), (211, 14192), (212, 14198), (216, 14219), (223, 14252), (232, 14291), (236, 14309), (242, 14342), (243, 14345), (245, 14354), (246, 14357), (250, 14372), (264, 14462), (272, 14498), (290, 14606), (296,

14642), (299, 14663), (308, 14738), (309, 14741), (315, 14795), (318, 14834), (325, 14882), (326, 14891), (328, 14915), (331, 14933), (338, 14984), (342, 15008), (345, 15026), (348, 15056),

Gene: RoscoWindex\_12 Start: 7553, Stop: 9658, Start Num: 11

Candidate Starts for RoscoWindex\_12:

(Start: 11 @7553 has 123 MA's), (Start: 13 @7574 has 3 MA's), (32, 7751), (34, 7760), (37, 7784), (39, 7856), (42, 7880), (43, 7886), (51, 8036), (54, 8057), (55, 8069), (57, 8078), (72, 8285), (75, 8303), (104, 8390), (125, 8459), (129, 8471), (140, 8519), (150, 8549), (155, 8564), (170, 8600), (176, 8627), (182, 8648), (188, 8672), (195, 8696), (197, 8702), (203, 8729), (211, 8762), (218, 8801), (225, 8828), (230, 8849), (233, 8864), (245, 8891), (246, 8894), (253, 8915), (255, 8927), (256, 8933), (263, 8981), (279, 9056), (281, 9065), (286, 9092), (287, 9113), (297, 9176), (301, 9200), (307, 9257), (320, 9362), (322, 9383), (324, 9395), (328, 9437), (332, 9458), (334, 9479),

Gene: Rozby\_18 Start: 12555, Stop: 15116, Start Num: 5

Candidate Starts for Rozby\_18:

(3, 12534), (Start: 5 @12555 has 83 MA's), (10, 12603), (14, 12636), (18, 12684), (20, 12708), (21, 12720), (30, 12780), (34, 12828), (35, 12843), (36, 12849), (45, 12969), (47, 13011), (52, 13107), (53, 13110), (56, 13140), (62, 13194), (71, 13335), (72, 13356), (76, 13380), (77, 13401), (79, 13410), (89, 13461), (92, 13479), (111, 13665), (133, 13809), (141, 13842), (145, 13869), (148, 13887), (149, 13893), (152, 13917), (154, 13926), (161, 13974), (167, 14001), (175, 14031), (176, 14037), (184, 14088), (188, 14103), (192, 14115), (193, 14121), (194, 14124), (203, 14160), (206, 14172), (208, 14181), (211, 14193), (212, 14199), (216, 14220), (223, 14253), (232, 14292), (236, 14310), (242, 14343), (243, 14346), (245, 14355), (246, 14358), (250, 14373), (264, 14463), (272, 14499), (290, 14607), (296, 14643), (299, 14664), (308, 14739), (309, 14742), (315, 14796), (318, 14835), (325, 14883), (326, 14892), (328, 14916), (331, 14934), (338, 14985), (342, 15009), (345, 15027), (348, 15057),

Gene: Sage7\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Sage7\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: SantasSleigh\_12 Start: 7576, Stop: 9681, Start Num: 11

Candidate Starts for SantasSleigh\_12:

(Start: 11 @7576 has 123 MA's), (Start: 13 @7597 has 3 MA's), (32, 7774), (34, 7783), (37, 7807), (39, 7879), (42, 7903), (43, 7909), (51, 8059), (54, 8080), (55, 8092), (57, 8101), (72, 8308), (75, 8326), (104, 8413), (125, 8482), (129, 8494), (140, 8542), (150, 8572), (155, 8587), (170, 8623), (176, 8650), (182, 8671), (188, 8695), (195, 8719), (197, 8725), (203, 8752), (211, 8785), (218, 8824), (225, 8851), (230, 8872), (233, 8887), (245, 8914), (246, 8917), (253, 8938), (255, 8950), (256, 8956), (263, 9004), (279, 9079), (281, 9088), (286, 9115), (287, 9136), (297, 9199), (301, 9223), (307, 9280), (320, 9385), (322, 9406), (324, 9418), (328, 9460), (332, 9481), (334, 9502),

Gene: Sara\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for Sara\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815),

(230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Savage2526\_18 Start: 12618, Stop: 15179, Start Num: 5

Candidate Starts for Savage2526\_18:

(3, 12597), (Start: 5 @12618 has 83 MA's), (10, 12666), (14, 12699), (18, 12747), (20, 12771), (21, 12783), (30, 12843), (34, 12891), (35, 12906), (36, 12912), (45, 13032), (47, 13074), (52, 13170), (53, 13173), (56, 13203), (62, 13257), (71, 13398), (72, 13419), (76, 13443), (77, 13464), (79, 13473), (89, 13524), (92, 13542), (111, 13728), (133, 13872), (141, 13905), (145, 13932), (148, 13950), (149, 13956), (152, 13980), (154, 13989), (161, 14037), (167, 14064), (175, 14094), (176, 14100), (184, 14151), (188, 14166), (192, 14178), (193, 14184), (194, 14187), (197, 14196), (203, 14223), (206, 14235), (208, 14244), (211, 14256), (212, 14262), (216, 14283), (221, 14307), (223, 14316), (232, 14355), (236, 14373), (242, 14406), (243, 14409), (245, 14418), (246, 14421), (250, 14436), (264, 14526), (272, 14562), (290, 14670), (296, 14706), (308, 14802), (309, 14805), (315, 14859), (318, 14898), (325, 14946), (326, 14955), (328, 14979), (331, 14997), (338, 15048), (342, 15072), (345, 15090), (348, 15120),

Gene: Scamander\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Scamander\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: Scrunchy\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for Scrunchy\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Scuttle\_18 Start: 12623, Stop: 15184, Start Num: 5

Candidate Starts for Scuttle\_18:

(3, 12602), (Start: 5 @12623 has 83 MA's), (10, 12671), (14, 12704), (18, 12752), (20, 12776), (21, 12788), (30, 12848), (34, 12896), (35, 12911), (36, 12917), (45, 13037), (47, 13079), (52, 13175), (53, 13178), (56, 13208), (62, 13262), (71, 13403), (72, 13424), (76, 13448), (77, 13469), (79, 13478), (89, 13529), (92, 13547), (96, 13571), (111, 13733), (133, 13877), (141, 13910), (145, 13937), (148, 13955), (149, 13961), (152, 13985), (154, 13994), (161, 14042), (167, 14069), (173, 14093), (175, 14099), (176, 14105), (184, 14156), (188, 14171), (192, 14183), (193, 14189), (194, 14192), (197, 14201), (203, 14228), (206, 14240), (208, 14249), (211, 14261), (212, 14267), (216, 14288), (223, 14321), (232, 14360), (242, 14411), (243, 14414), (245, 14423), (246, 14426), (250, 14441), (263, 14525), (264, 14531), (272, 14567), (290, 14675), (296, 14711), (308, 14807), (309, 14810), (315, 14864), (318, 14903), (325, 14951), (326, 14960), (328, 14984), (331, 15002), (338, 15053), (342, 15077), (345, 15095), (348, 15125),

Gene: SeaWolves\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for SeaWolves\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Sergei\_14 Start: 9744, Stop: 12302, Start Num: 5

Candidate Starts for Sergei\_14:

(Start: 5 @9744 has 83 MA's), (7, 9753), (8, 9783), (18, 9873), (21, 9909), (34, 10017), (35, 10032), (47, 10200), (52, 10296), (76, 10569), (77, 10590), (84, 10620), (89, 10650), (100, 10737), (112, 10860), (122, 10935), (133, 10998), (141, 11031), (144, 11052), (145, 11058), (148, 11076), (149, 11082), (152, 11106), (158, 11148), (161, 11163), (163, 11169), (169, 11196), (182, 11247), (185, 11280), (187, 11289), (193, 11310), (197, 11322), (203, 11349), (206, 11361), (208, 11370), (211, 11382), (212, 11388), (213, 11391), (217, 11412), (223, 11442), (228, 11460), (232, 11481), (235, 11490), (236, 11499), (242, 11532), (243, 11535), (246, 11547), (250, 11562), (263, 11646), (264, 11652), (272, 11688), (284, 11745), (285, 11754), (290, 11796), (299, 11853), (308, 11928), (309, 11931), (312, 11961), (315, 11985), (321, 12042), (325, 12072), (326, 12081), (328, 12105), (330, 12117), (348, 12243),

Gene: Sippinontea\_12 Start: 7533, Stop: 9638, Start Num: 11

Candidate Starts for Sippinontea\_12:

(Start: 11 @7533 has 123 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (42, 7860), (43, 7866), (49, 7959), (51, 8016), (54, 8037), (55, 8049), (57, 8058), (72, 8265), (75, 8283), (104, 8370), (125, 8439), (129, 8451), (140, 8499), (150, 8529), (155, 8544), (170, 8580), (176, 8607), (183, 8631), (188, 8652), (195, 8676), (197, 8682), (203, 8709), (211, 8742), (218, 8781), (225, 8808), (230, 8829), (233, 8844), (245, 8871), (246, 8874), (255, 8907), (256, 8913), (263, 8961), (270, 8997), (281, 9045), (286, 9072), (287, 9093), (297, 9156), (301, 9180), (307, 9237), (320, 9342), (322, 9363), (324, 9375), (328, 9417), (332, 9438), (334, 9459), (350, 9588),

Gene: Slentz\_12 Start: 7546, Stop: 9651, Start Num: 11

Candidate Starts for Slentz\_12:

(Start: 11 @7546 has 123 MA's), (Start: 13 @7567 has 3 MA's), (32, 7744), (34, 7753), (37, 7777), (39, 7849), (42, 7873), (43, 7879), (51, 8029), (54, 8050), (55, 8062), (57, 8071), (72, 8278), (75, 8296), (104, 8383), (125, 8452), (129, 8464), (140, 8512), (150, 8542), (155, 8557), (170, 8593), (176, 8620), (182, 8641), (188, 8665), (195, 8689), (197, 8695), (203, 8722), (211, 8755), (218, 8794), (225, 8821), (230, 8842), (233, 8857), (245, 8884), (246, 8887), (253, 8908), (255, 8920), (256, 8926), (263, 8974), (279, 9049), (281, 9058), (286, 9085), (287, 9106), (297, 9169), (301, 9193), (307, 9250), (320, 9355), (322, 9376), (324, 9388), (328, 9430), (332, 9451), (334, 9472),

Gene: Slizam\_12 Start: 7579, Stop: 9684, Start Num: 11

Candidate Starts for Slizam\_12:

(Start: 11 @7579 has 123 MA's), (Start: 13 @7600 has 3 MA's), (32, 7777), (34, 7786), (37, 7810), (39, 7882), (42, 7906), (49, 8005), (54, 8083), (55, 8095), (57, 8104), (72, 8311), (75, 8329), (104, 8416), (125, 8485), (129, 8497), (140, 8545), (150, 8575), (155, 8590), (174, 8644), (182, 8674), (183, 8677), (188, 8698), (197, 8728), (203, 8755), (211, 8788), (218, 8827), (225, 8854), (226, 8860), (230, 8875), (233, 8890), (245, 8917), (246, 8920), (253, 8941), (255, 8953), (256, 8959), (263, 9007), (270, 9043), (281, 9091), (286, 9118), (287, 9139), (297, 9202), (301, 9226), (307, 9283), (320, 9388), (322, 9409), (328, 9463), (332, 9484), (334, 9505),

Gene: Snuffles\_13 Start: 7751, Stop: 9856, Start Num: 11

Candidate Starts for Snuffles\_13:

(Start: 11 @7751 has 123 MA's), (Start: 13 @7772 has 3 MA's), (32, 7949), (34, 7958), (37, 7982), (39, 8054), (42, 8078), (49, 8177), (54, 8255), (55, 8267), (57, 8276), (72, 8483), (75, 8501), (104, 8588), (125, 8657), (129, 8669), (140, 8717), (150, 8747), (155, 8762), (174, 8816), (182, 8846), (183, 8849), (188, 8870), (197, 8900), (203, 8927), (211, 8960), (218, 8999), (225, 9026), (226, 9032), (230, 9047), (233, 9062), (245, 9089), (246, 9092), (253, 9113), (255, 9125), (256, 9131), (263, 9179), (270, 9215), (281, 9263), (286, 9290), (287, 9311), (297, 9374), (301, 9398), (307, 9455), (320, 9560), (322, 9581), (328, 9635), (332, 9656), (334, 9677),

Gene: Sooty\_16 Start: 10245, Stop: 12665, Start Num: 6

Candidate Starts for Sooty\_16:

(Start: 6 @10245 has 19 MA's), (17, 10332), (20, 10389), (26, 10437), (29, 10449), (34, 10509), (41, 10620), (48, 10701), (57, 10827), (60, 10842), (65, 10896), (77, 11070), (95, 11154), (98, 11175), (99, 11196), (102, 11217), (109, 11268), (119, 11343), (123, 11364), (128, 11397), (140, 11454), (146, 11496), (150, 11511), (157, 11562), (169, 11598), (194, 11706), (200, 11727), (209, 11769), (212, 11781), (223, 11835), (235, 11883), (260, 11979), (288, 12135), (292, 12156), (294, 12168), (302, 12219), (318, 12369), (323, 12405), (327, 12438), (349, 12597),

Gene: SpecialK\_16 Start: 10242, Stop: 12662, Start Num: 6

Candidate Starts for SpecialK\_16:

(Start: 6 @10242 has 19 MA's), (17, 10329), (26, 10434), (29, 10446), (34, 10506), (41, 10617), (48, 10698), (57, 10824), (60, 10839), (65, 10893), (77, 11067), (95, 11151), (98, 11172), (102, 11214), (119, 11340), (123, 11361), (128, 11394), (140, 11451), (146, 11493), (150, 11508), (157, 11559), (169, 11595), (171, 11601), (194, 11703), (200, 11724), (209, 11766), (222, 11826), (223, 11832), (235, 11880), (260, 11976), (292, 12153), (294, 12165), (302, 12216), (311, 12297), (318, 12366), (323, 12402), (333, 12483), (336, 12498), (346, 12570), (349, 12594),

Gene: Stem\_12 Start: 7579, Stop: 9684, Start Num: 11

Candidate Starts for Stem\_12:

(Start: 11 @7579 has 123 MA's), (Start: 13 @7600 has 3 MA's), (32, 7777), (34, 7786), (37, 7810), (39, 7882), (42, 7906), (49, 8005), (51, 8062), (54, 8083), (55, 8095), (57, 8104), (72, 8311), (75, 8329), (104, 8416), (125, 8485), (129, 8497), (140, 8545), (150, 8575), (155, 8590), (174, 8644), (182, 8674), (183, 8677), (188, 8698), (197, 8728), (203, 8755), (211, 8788), (218, 8827), (225, 8854), (226, 8860), (230, 8875), (233, 8890), (245, 8917), (246, 8920), (253, 8941), (255, 8953), (256, 8959), (263, 9007), (270, 9043), (281, 9091), (286, 9118), (287, 9139), (297, 9202), (301, 9226), (307, 9283), (320, 9388), (322, 9409), (328, 9463), (332, 9484), (334, 9505),

Gene: Supakev\_14 Start: 9740, Stop: 12298, Start Num: 5

Candidate Starts for Supakev\_14:

(Start: 5 @9740 has 83 MA's), (7, 9749), (8, 9779), (18, 9869), (30, 9965), (33, 10010), (35, 10028), (47, 10196), (52, 10292), (53, 10295), (54, 10310), (64, 10397), (81, 10601), (82, 10604), (95, 10688), (133, 10994), (145, 11054), (148, 11072), (149, 11078), (154, 11111), (155, 11123), (161, 11159), (167, 11186), (173, 11210), (175, 11216), (184, 11273), (191, 11297), (193, 11306), (198, 11321), (203, 11345), (206, 11357), (211, 11378), (212, 11384), (216, 11405), (221, 11429), (223, 11438), (228, 11456), (232, 11477), (234, 11483), (236, 11495), (242, 11528), (243, 11531), (246, 11543), (250, 11558), (251, 11561), (264, 11648), (283, 11738), (284, 11741), (290, 11792), (299, 11849), (300, 11858), (308, 11924), (309, 11927), (315, 11981), (318, 12020), (325, 12068), (326, 12077), (328, 12101), (330, 12113), (345, 12209), (348, 12239),

Gene: Suppi\_18 Start: 12647, Stop: 15202, Start Num: 5

Candidate Starts for Suppi\_18:

(3, 12626), (Start: 5 @12647 has 83 MA's), (10, 12695), (18, 12776), (20, 12800), (30, 12872), (34, 12920), (35, 12935), (36, 12941), (47, 13103), (50, 13148), (52, 13199), (53, 13202), (56, 13232), (67,



13370), (77, 13493), (89, 13553), (92, 13571), (94, 13586), (100, 13637), (127, 13868), (142, 13937), (145, 13961), (148, 13979), (149, 13985), (156, 14039), (158, 14051), (163, 14072), (168, 14096), (185, 14183), (192, 14207), (193, 14213), (194, 14216), (198, 14228), (202, 14249), (203, 14252), (204, 14258), (206, 14264), (208, 14273), (210, 14282), (211, 14285), (212, 14291), (217, 14315), (221, 14336), (223, 14345), (228, 14363), (232, 14384), (235, 14393), (236, 14402), (242, 14435), (243, 14438), (245, 14447), (246, 14450), (257, 14501), (272, 14591), (290, 14699), (292, 14711), (295, 14732), (296, 14735), (308, 14831), (309, 14834), (315, 14888), (318, 14927), (326, 14984), (331, 15026), (338, 15074), (345, 15116), (348, 15146),

Gene: TattModd\_18 Start: 12617, Stop: 15178, Start Num: 5

Candidate Starts for TattModd\_18:

(3, 12596), (Start: 5 @12617 has 83 MA's), (10, 12665), (14, 12698), (18, 12746), (20, 12770), (21, 12782), (30, 12842), (34, 12890), (35, 12905), (36, 12911), (45, 13031), (47, 13073), (52, 13169), (53, 13172), (56, 13202), (62, 13256), (71, 13397), (72, 13418), (76, 13442), (77, 13463), (79, 13472), (89, 13523), (92, 13541), (111, 13727), (133, 13871), (141, 13904), (145, 13931), (148, 13949), (149, 13955), (152, 13979), (154, 13988), (161, 14036), (167, 14063), (175, 14093), (176, 14099), (184, 14150), (188, 14165), (192, 14177), (193, 14183), (194, 14186), (197, 14195), (203, 14222), (206, 14234), (208, 14243), (211, 14255), (212, 14261), (216, 14282), (221, 14306), (223, 14315), (232, 14354), (236, 14372), (242, 14405), (243, 14408), (245, 14417), (246, 14420), (250, 14435), (264, 14525), (272, 14561), (290, 14669), (296, 14705), (308, 14801), (309, 14804), (315, 14858), (318, 14897), (325, 14945), (326, 14954), (328, 14978), (331, 14996), (338, 15047), (342, 15071), (345, 15089), (348, 15119),

Gene: TeddyBoy\_12 Start: 7547, Stop: 9652, Start Num: 11

Candidate Starts for TeddyBoy\_12:

(Start: 11 @7547 has 123 MA's), (Start: 13 @7568 has 3 MA's), (32, 7745), (34, 7754), (37, 7778), (39, 7850), (42, 7874), (43, 7880), (51, 8030), (54, 8051), (55, 8063), (57, 8072), (72, 8279), (75, 8297), (104, 8384), (125, 8453), (129, 8465), (140, 8513), (150, 8543), (155, 8558), (170, 8594), (176, 8621), (182, 8642), (188, 8666), (195, 8690), (197, 8696), (203, 8723), (211, 8756), (218, 8795), (225, 8822), (230, 8843), (233, 8858), (245, 8885), (246, 8888), (253, 8909), (255, 8921), (256, 8927), (263, 8975), (279, 9050), (281, 9059), (286, 9086), (287, 9107), (297, 9170), (301, 9194), (307, 9251), (320, 9356), (322, 9377), (324, 9389), (328, 9431), (332, 9452), (334, 9473),

Gene: Temper16\_14 Start: 9744, Stop: 12302, Start Num: 5

Candidate Starts for Temper16\_14:

(Start: 5 @9744 has 83 MA's), (7, 9753), (8, 9783), (18, 9873), (21, 9909), (34, 10017), (35, 10032), (47, 10200), (52, 10296), (76, 10569), (77, 10590), (84, 10620), (89, 10650), (100, 10737), (112, 10860), (122, 10935), (133, 10998), (141, 11031), (144, 11052), (145, 11058), (148, 11076), (149, 11082), (152, 11106), (158, 11148), (161, 11163), (163, 11169), (169, 11196), (182, 11247), (185, 11280), (187, 11289), (193, 11310), (197, 11322), (203, 11349), (206, 11361), (208, 11370), (211, 11382), (212, 11388), (213, 11391), (217, 11412), (223, 11442), (228, 11460), (232, 11481), (235, 11490), (236, 11499), (242, 11532), (243, 11535), (246, 11547), (250, 11562), (263, 11646), (264, 11652), (272, 11688), (284, 11745), (285, 11754), (290, 11796), (299, 11853), (308, 11928), (309, 11931), (312, 11961), (315, 11985), (321, 12042), (325, 12072), (326, 12081), (328, 12105), (330, 12117), (348, 12243),

Gene: TimoTea\_12 Start: 7528, Stop: 9633, Start Num: 11

Candidate Starts for TimoTea\_12:

(Start: 11 @7528 has 123 MA's), (Start: 13 @7549 has 3 MA's), (32, 7726), (34, 7735), (37, 7759), (39, 7831), (42, 7855), (43, 7861), (51, 8011), (54, 8032), (55, 8044), (57, 8053), (72, 8260), (75, 8278), (104, 8365), (125, 8434), (129, 8446), (140, 8494), (150, 8524), (155, 8539), (170, 8575), (176, 8602), (182, 8623), (188, 8647), (195, 8671), (197, 8677), (203, 8704), (211, 8737), (218, 8776), (225, 8803), (230, 8824), (233, 8839), (245, 8866), (246, 8869), (253, 8890), (255, 8902), (256, 8908), (263, 8956),

(279, 9031), (281, 9040), (286, 9067), (287, 9088), (297, 9151), (301, 9175), (307, 9232), (320, 9337), (322, 9358), (324, 9370), (328, 9412), (332, 9433), (334, 9454),

Gene: TinyTruffula\_12 Start: 7648, Stop: 9753, Start Num: 11

Candidate Starts for TinyTruffula\_12:

(Start: 11 @7648 has 123 MA's), (Start: 13 @7669 has 3 MA's), (32, 7846), (34, 7855), (37, 7879), (39, 7951), (42, 7975), (49, 8074), (51, 8131), (54, 8152), (55, 8164), (57, 8173), (72, 8380), (75, 8398), (104, 8485), (125, 8554), (129, 8566), (140, 8614), (150, 8644), (155, 8659), (182, 8743), (183, 8746), (188, 8767), (197, 8797), (203, 8824), (211, 8857), (218, 8896), (225, 8923), (226, 8929), (230, 8944), (233, 8959), (246, 8989), (253, 9010), (255, 9022), (256, 9028), (263, 9076), (270, 9112), (281, 9160), (286, 9187), (287, 9208), (297, 9271), (301, 9295), (307, 9352), (320, 9457), (322, 9478), (328, 9532), (332, 9553), (334, 9574),

Gene: TomBrady12\_12 Start: 7580, Stop: 9685, Start Num: 11

Candidate Starts for TomBrady12\_12:

(Start: 11 @7580 has 123 MA's), (Start: 13 @7601 has 3 MA's), (32, 7778), (34, 7787), (37, 7811), (39, 7883), (42, 7907), (49, 8006), (54, 8084), (55, 8096), (57, 8105), (72, 8312), (75, 8330), (104, 8417), (125, 8486), (129, 8498), (140, 8546), (150, 8576), (155, 8591), (174, 8645), (182, 8675), (183, 8678), (188, 8699), (197, 8729), (203, 8756), (211, 8789), (218, 8828), (225, 8855), (226, 8861), (230, 8876), (233, 8891), (245, 8918), (246, 8921), (253, 8942), (255, 8954), (256, 8960), (263, 9008), (270, 9044), (281, 9092), (286, 9119), (287, 9140), (297, 9203), (301, 9227), (307, 9284), (320, 9389), (322, 9410), (328, 9464), (332, 9485), (334, 9506),

Gene: Trackstar\_11 Start: 7648, Stop: 9753, Start Num: 11

Candidate Starts for Trackstar\_11:

(Start: 11 @7648 has 123 MA's), (Start: 13 @7669 has 3 MA's), (32, 7846), (34, 7855), (37, 7879), (39, 7951), (42, 7975), (49, 8074), (51, 8131), (54, 8152), (55, 8164), (57, 8173), (72, 8380), (75, 8398), (104, 8485), (125, 8554), (129, 8566), (140, 8614), (150, 8644), (155, 8659), (174, 8713), (182, 8743), (183, 8746), (188, 8767), (197, 8797), (203, 8824), (211, 8857), (218, 8896), (225, 8923), (226, 8929), (230, 8944), (233, 8959), (246, 8989), (253, 9010), (255, 9022), (256, 9028), (263, 9076), (270, 9112), (281, 9160), (286, 9187), (287, 9208), (297, 9271), (301, 9295), (307, 9352), (320, 9457), (322, 9478), (328, 9532), (332, 9553), (334, 9574),

Gene: Trireme\_12 Start: 7646, Stop: 9751, Start Num: 11

Candidate Starts for Trireme\_12:

(Start: 11 @7646 has 123 MA's), (Start: 13 @7667 has 3 MA's), (32, 7844), (34, 7853), (37, 7877), (39, 7949), (42, 7973), (49, 8072), (51, 8129), (54, 8150), (55, 8162), (57, 8171), (72, 8378), (75, 8396), (104, 8483), (125, 8552), (129, 8564), (140, 8612), (150, 8642), (155, 8657), (174, 8711), (182, 8741), (183, 8744), (188, 8765), (197, 8795), (203, 8822), (211, 8855), (218, 8894), (225, 8921), (226, 8927), (230, 8942), (233, 8957), (246, 8987), (253, 9008), (255, 9020), (256, 9026), (263, 9074), (270, 9110), (281, 9158), (286, 9185), (287, 9206), (297, 9269), (301, 9293), (307, 9350), (320, 9455), (322, 9476), (328, 9530), (332, 9551), (334, 9572),

Gene: Upsilon\_12 Start: 7615, Stop: 9720, Start Num: 11

Candidate Starts for Upsilon\_12:

(Start: 11 @7615 has 123 MA's), (Start: 13 @7636 has 3 MA's), (32, 7813), (34, 7822), (37, 7846), (39, 7918), (42, 7942), (49, 8041), (51, 8098), (54, 8119), (55, 8131), (57, 8140), (72, 8347), (75, 8365), (104, 8452), (125, 8521), (129, 8533), (140, 8581), (150, 8611), (155, 8626), (174, 8680), (182, 8710), (183, 8713), (188, 8734), (197, 8764), (203, 8791), (211, 8824), (218, 8863), (225, 8890), (226, 8896), (230, 8911), (233, 8926), (246, 8956), (253, 8977), (255, 8989), (256, 8995), (263, 9043), (270, 9079), (281, 9127), (286, 9154), (287, 9175), (297, 9238), (301, 9262), (307, 9319), (320, 9424), (322, 9445), (324, 9457), (328, 9499), (332, 9520), (334, 9541),

Gene: Urla\_14 Start: 9754, Stop: 12303, Start Num: 5

Candidate Starts for Urla\_14:

(Start: 5 @9754 has 83 MA's), (18, 9883), (21, 9919), (34, 10027), (35, 10042), (46, 10189), (47, 10210), (52, 10306), (63, 10396), (77, 10600), (89, 10660), (91, 10669), (133, 10996), (144, 11050), (145, 11056), (148, 11074), (154, 11113), (161, 11161), (176, 11224), (185, 11278), (192, 11302), (193, 11308), (203, 11347), (206, 11359), (210, 11377), (211, 11380), (212, 11386), (213, 11389), (216, 11407), (223, 11440), (228, 11458), (232, 11479), (235, 11488), (236, 11497), (242, 11530), (243, 11533), (245, 11542), (246, 11545), (250, 11560), (263, 11644), (272, 11686), (290, 11794), (292, 11806), (299, 11851), (300, 11860), (308, 11926), (309, 11929), (315, 11983), (318, 12022), (325, 12070), (326, 12079), (328, 12103), (330, 12115), (338, 12172), (339, 12178), (348, 12244), (351, 12286),

Gene: UtzChips\_14 Start: 9915, Stop: 12263, Start Num: 6

Candidate Starts for UtzChips\_14:

(Start: 6 @9915 has 19 MA's), (25, 10098), (37, 10194), (44, 10302), (48, 10362), (65, 10557), (68, 10620), (74, 10704), (75, 10716), (77, 10719), (90, 10770), (98, 10821), (108, 10908), (116, 10968), (121, 10992), (135, 11073), (149, 11133), (162, 11154), (176, 11214), (182, 11235), (184, 11244), (199, 11295), (217, 11382), (218, 11391), (247, 11487), (249, 11493), (256, 11526), (273, 11622), (281, 11661), (301, 11799), (308, 11862), (321, 11973), (334, 12078), (338, 12114),

Gene: VResidence\_16 Start: 10828, Stop: 13143, Start Num: 6

Candidate Starts for VResidence\_16:

(Start: 6 @10828 has 19 MA's), (9, 10861), (17, 10915), (21, 10984), (37, 11116), (38, 11143), (44, 11224), (47, 11275), (48, 11284), (51, 11368), (65, 11479), (66, 11530), (73, 11620), (77, 11644), (85, 11671), (101, 11764), (130, 11956), (136, 11983), (144, 12016), (150, 12049), (163, 12067), (165, 12073), (175, 12115), (177, 12124), (181, 12136), (196, 12190), (203, 12214), (213, 12256), (214, 12262), (224, 12310), (235, 12355), (242, 12373), (245, 12385), (257, 12430), (267, 12496), (269, 12505), (306, 12730), (308, 12748), (309, 12751), (316, 12817), (321, 12862), (323, 12880), (326, 12901), (341, 13012), (349, 13078),

Gene: Vallejo\_18 Start: 12556, Stop: 15117, Start Num: 5

Candidate Starts for Vallejo\_18:

(3, 12535), (Start: 5 @12556 has 83 MA's), (10, 12604), (14, 12637), (18, 12685), (20, 12709), (21, 12721), (30, 12781), (34, 12829), (35, 12844), (36, 12850), (45, 12970), (47, 13012), (52, 13108), (53, 13111), (56, 13141), (62, 13195), (63, 13198), (71, 13336), (72, 13357), (76, 13381), (77, 13402), (79, 13411), (89, 13462), (92, 13480), (111, 13666), (133, 13810), (141, 13843), (145, 13870), (148, 13888), (149, 13894), (152, 13918), (154, 13927), (161, 13975), (167, 14002), (168, 14005), (173, 14026), (175, 14032), (176, 14038), (184, 14089), (188, 14104), (192, 14116), (193, 14122), (194, 14125), (197, 14134), (203, 14161), (206, 14173), (208, 14182), (211, 14194), (212, 14200), (216, 14221), (223, 14254), (232, 14293), (242, 14344), (243, 14347), (245, 14356), (246, 14359), (250, 14374), (264, 14464), (272, 14500), (290, 14608), (296, 14644), (308, 14740), (309, 14743), (315, 14797), (318, 14836), (325, 14884), (326, 14893), (328, 14917), (331, 14935), (338, 14986), (342, 15010), (345, 15028), (348, 15058),

Gene: Vanisius\_12 Start: 7552, Stop: 9657, Start Num: 11

Candidate Starts for Vanisius\_12:

(Start: 11 @7552 has 123 MA's), (Start: 13 @7573 has 3 MA's), (32, 7750), (34, 7759), (37, 7783), (39, 7855), (42, 7879), (43, 7885), (51, 8035), (54, 8056), (55, 8068), (57, 8077), (72, 8284), (75, 8302), (104, 8389), (125, 8458), (129, 8470), (140, 8518), (150, 8548), (155, 8563), (170, 8599), (176, 8626), (182, 8647), (188, 8671), (195, 8695), (197, 8701), (203, 8728), (211, 8761), (218, 8800), (225, 8827), (230, 8848), (233, 8863), (245, 8890), (246, 8893), (253, 8914), (255, 8926), (256, 8932), (263, 8980), (279, 9055), (281, 9064), (286, 9091), (287, 9112), (297, 9175), (301, 9199), (307, 9256), (320, 9361), (322, 9382), (324, 9394), (328, 9436), (332, 9457), (334, 9478),

Gene: VitulaEligans\_12 Start: 7636, Stop: 9741, Start Num: 11

Candidate Starts for VitulaEligans\_12:

(Start: 11 @7636 has 123 MA's), (Start: 13 @7657 has 3 MA's), (32, 7834), (34, 7843), (37, 7867), (39, 7939), (42, 7963), (43, 7969), (51, 8119), (54, 8140), (55, 8152), (57, 8161), (72, 8368), (75, 8386), (104, 8473), (125, 8542), (129, 8554), (140, 8602), (150, 8632), (155, 8647), (176, 8710), (182, 8731), (188, 8755), (195, 8779), (197, 8785), (203, 8812), (211, 8845), (218, 8884), (225, 8911), (230, 8932), (233, 8947), (245, 8974), (246, 8977), (253, 8998), (255, 9010), (256, 9016), (263, 9064), (270, 9100), (279, 9139), (281, 9148), (286, 9175), (287, 9196), (297, 9259), (301, 9283), (307, 9340), (320, 9445), (322, 9466), (324, 9478), (328, 9520), (332, 9541), (334, 9562), (350, 9691),

Gene: Vulture\_14 Start: 9738, Stop: 12296, Start Num: 5

Candidate Starts for Vulture\_14:

(Start: 5 @9738 has 83 MA's), (7, 9747), (8, 9777), (18, 9867), (30, 9963), (35, 10026), (47, 10194), (52, 10290), (53, 10293), (54, 10308), (64, 10395), (67, 10461), (81, 10599), (82, 10602), (95, 10686), (133, 10992), (145, 11052), (148, 11070), (149, 11076), (154, 11109), (155, 11121), (161, 11157), (167, 11184), (173, 11208), (175, 11214), (184, 11271), (191, 11295), (193, 11304), (198, 11319), (203, 11343), (206, 11355), (211, 11376), (212, 11382), (216, 11403), (221, 11427), (223, 11436), (228, 11454), (232, 11475), (234, 11481), (236, 11493), (242, 11526), (243, 11529), (246, 11541), (250, 11556), (251, 11559), (264, 11646), (283, 11736), (284, 11739), (290, 11790), (299, 11847), (300, 11856), (303, 11868), (308, 11922), (309, 11925), (315, 11979), (318, 12018), (325, 12066), (326, 12075), (328, 12099), (330, 12111), (345, 12207), (348, 12237),

Gene: Wawa\_18 Start: 12593, Stop: 15154, Start Num: 5

Candidate Starts for Wawa\_18:

(3, 12572), (Start: 5 @12593 has 83 MA's), (10, 12641), (14, 12674), (18, 12722), (20, 12746), (21, 12758), (30, 12818), (34, 12866), (35, 12881), (36, 12887), (45, 13007), (47, 13049), (52, 13145), (53, 13148), (56, 13178), (62, 13232), (71, 13373), (72, 13394), (76, 13418), (77, 13439), (79, 13448), (89, 13499), (92, 13517), (111, 13703), (133, 13847), (141, 13880), (145, 13907), (148, 13925), (149, 13931), (152, 13955), (154, 13964), (161, 14012), (167, 14039), (168, 14042), (173, 14063), (175, 14069), (176, 14075), (184, 14126), (188, 14141), (192, 14153), (193, 14159), (194, 14162), (197, 14171), (203, 14198), (206, 14210), (208, 14219), (211, 14231), (212, 14237), (216, 14258), (223, 14291), (232, 14330), (242, 14381), (243, 14384), (245, 14393), (246, 14396), (250, 14411), (264, 14501), (272, 14537), (290, 14645), (296, 14681), (308, 14777), (309, 14780), (315, 14834), (318, 14873), (325, 14921), (326, 14930), (328, 14954), (331, 14972), (338, 15023), (342, 15047), (345, 15065), (348, 15095),

Gene: Wayne\_18 Start: 12693, Stop: 15248, Start Num: 5

Candidate Starts for Wayne\_18:

(3, 12672), (Start: 5 @12693 has 83 MA's), (10, 12741), (18, 12822), (20, 12846), (30, 12918), (34, 12966), (35, 12981), (36, 12987), (47, 13149), (50, 13194), (52, 13245), (53, 13248), (56, 13278), (67, 13416), (77, 13539), (89, 13599), (92, 13617), (94, 13632), (100, 13683), (127, 13914), (142, 13983), (145, 14007), (148, 14025), (149, 14031), (156, 14085), (158, 14097), (163, 14118), (168, 14142), (185, 14229), (192, 14253), (193, 14259), (194, 14262), (198, 14274), (202, 14295), (203, 14298), (204, 14304), (206, 14310), (210, 14328), (211, 14331), (212, 14337), (221, 14382), (223, 14391), (228, 14409), (232, 14430), (235, 14439), (236, 14448), (242, 14481), (243, 14484), (245, 14493), (246, 14496), (257, 14547), (272, 14637), (290, 14745), (292, 14757), (295, 14778), (296, 14781), (308, 14877), (309, 14880), (315, 14934), (318, 14973), (326, 15030), (331, 15072), (338, 15120), (345, 15162), (348, 15192),

Gene: Witch\_12 Start: 7541, Stop: 9646, Start Num: 11

Candidate Starts for Witch\_12:

(Start: 11 @7541 has 123 MA's), (Start: 13 @7562 has 3 MA's), (32, 7739), (34, 7748), (37, 7772), (39, 7844), (42, 7868), (43, 7874), (51, 8024), (54, 8045), (55, 8057), (57, 8066), (72, 8273), (75, 8291), (104, 8378), (125, 8447), (129, 8459), (140, 8507), (150, 8537), (155, 8552), (170, 8588), (176, 8615), (182, 8636), (188, 8660), (195, 8684), (197, 8690), (203, 8717), (211, 8750), (218, 8789), (225, 8816), (230, 8837), (233, 8852), (245, 8879), (246, 8882), (253, 8903), (255, 8915), (256, 8921), (263, 8969), (270, 9005), (281, 9053), (286, 9080), (287, 9101), (297, 9164), (301, 9188), (307, 9245), (320, 9350), (322, 9371), (324, 9383), (328, 9425), (332, 9446), (334, 9467), (350, 9596),

Gene: Wolfpack\_12 Start: 7533, Stop: 9638, Start Num: 11

Candidate Starts for Wolfpack\_12:

(Start: 11 @7533 has 123 MA's), (Start: 13 @7554 has 3 MA's), (32, 7731), (34, 7740), (37, 7764), (39, 7836), (42, 7860), (43, 7866), (49, 7959), (51, 8016), (54, 8037), (55, 8049), (57, 8058), (72, 8265), (75, 8283), (104, 8370), (125, 8439), (129, 8451), (140, 8499), (150, 8529), (155, 8544), (170, 8580), (176, 8607), (183, 8631), (188, 8652), (195, 8676), (197, 8682), (203, 8709), (211, 8742), (218, 8781), (225, 8808), (230, 8829), (233, 8844), (245, 8871), (246, 8874), (255, 8907), (256, 8913), (263, 8961), (270, 8997), (281, 9045), (286, 9072), (287, 9093), (297, 9156), (301, 9180), (307, 9237), (320, 9342), (322, 9363), (324, 9375), (328, 9417), (332, 9438), (334, 9459), (350, 9588),

Gene: WonderBoy\_14 Start: 9710, Stop: 12271, Start Num: 5

Candidate Starts for WonderBoy\_14:

(3, 9689), (Start: 5 @9710 has 83 MA's), (10, 9758), (18, 9839), (20, 9863), (30, 9935), (34, 9983), (35, 9998), (36, 10004), (47, 10166), (52, 10262), (53, 10265), (56, 10295), (67, 10433), (72, 10511), (77, 10556), (79, 10565), (89, 10616), (92, 10634), (93, 10646), (97, 10670), (120, 10886), (137, 10976), (141, 10997), (145, 11024), (148, 11042), (149, 11048), (152, 11072), (154, 11081), (161, 11129), (167, 11156), (175, 11186), (184, 11243), (188, 11258), (192, 11270), (193, 11276), (194, 11279), (197, 11288), (203, 11315), (206, 11327), (208, 11336), (211, 11348), (212, 11354), (217, 11378), (221, 11399), (223, 11408), (227, 11423), (232, 11447), (242, 11498), (243, 11501), (246, 11513), (251, 11531), (264, 11618), (272, 11654), (290, 11762), (292, 11774), (295, 11795), (296, 11798), (299, 11819), (308, 11894), (309, 11897), (313, 11930), (315, 11951), (318, 11990), (321, 12008), (325, 12038), (326, 12047), (339, 12146), (348, 12212),

Gene: Yami\_12 Start: 7552, Stop: 9636, Start Num: 13

Candidate Starts for Yami\_12:

(Start: 11 @7531 has 123 MA's), (Start: 13 @7552 has 3 MA's), (32, 7729), (34, 7738), (37, 7762), (39, 7834), (42, 7858), (49, 7957), (51, 8014), (54, 8035), (55, 8047), (57, 8056), (72, 8263), (75, 8281), (104, 8368), (125, 8437), (129, 8449), (140, 8497), (150, 8527), (155, 8542), (182, 8626), (183, 8629), (188, 8650), (197, 8680), (203, 8707), (211, 8740), (218, 8779), (225, 8806), (226, 8812), (230, 8827), (233, 8842), (246, 8872), (253, 8893), (255, 8905), (256, 8911), (263, 8959), (270, 8995), (281, 9043), (286, 9070), (287, 9091), (297, 9154), (301, 9178), (307, 9235), (320, 9340), (322, 9361), (328, 9415), (332, 9436), (334, 9457),

Gene: Yasuo\_12 Start: 7537, Stop: 9642, Start Num: 11

Candidate Starts for Yasuo\_12:

(Start: 11 @7537 has 123 MA's), (Start: 13 @7558 has 3 MA's), (32, 7735), (34, 7744), (37, 7768), (39, 7840), (42, 7864), (43, 7870), (51, 8020), (54, 8041), (55, 8053), (57, 8062), (72, 8269), (75, 8287), (104, 8374), (125, 8443), (129, 8455), (140, 8503), (150, 8533), (155, 8548), (170, 8584), (176, 8611), (182, 8632), (188, 8656), (195, 8680), (197, 8686), (203, 8713), (211, 8746), (218, 8785), (225, 8812), (230, 8833), (233, 8848), (245, 8875), (246, 8878), (253, 8899), (255, 8911), (256, 8917), (263, 8965), (279, 9040), (281, 9049), (286, 9076), (287, 9097), (297, 9160), (301, 9184), (307, 9241), (320, 9346), (322, 9367), (324, 9379), (328, 9421), (332, 9442), (334, 9463),

Gene: YertPhresh\_12 Start: 7540, Stop: 9645, Start Num: 11

Candidate Starts for YertPhresh\_12:

(Start: 11 @7540 has 123 MA's), (Start: 13 @7561 has 3 MA's), (32, 7738), (34, 7747), (37, 7771), (39, 7843), (42, 7867), (43, 7873), (51, 8023), (54, 8044), (55, 8056), (57, 8065), (72, 8272), (75, 8290), (104, 8377), (125, 8446), (129, 8458), (140, 8506), (150, 8536), (155, 8551), (170, 8587), (176, 8614), (182, 8635), (188, 8659), (195, 8683), (197, 8689), (203, 8716), (211, 8749), (218, 8788), (225, 8815), (230, 8836), (233, 8851), (245, 8878), (246, 8881), (253, 8902), (255, 8914), (256, 8920), (263, 8968), (270, 9004), (281, 9052), (286, 9079), (287, 9100), (297, 9163), (301, 9187), (307, 9244), (320, 9349), (322, 9370), (324, 9382), (328, 9424), (332, 9445), (334, 9466), (350, 9595),

Gene: Yubaba\_12 Start: 7574, Stop: 9679, Start Num: 11

Candidate Starts for Yubaba\_12:

(Start: 11 @7574 has 123 MA's), (Start: 13 @7595 has 3 MA's), (32, 7772), (34, 7781), (37, 7805), (39, 7877), (42, 7901), (43, 7907), (51, 8057), (54, 8078), (55, 8090), (57, 8099), (72, 8306), (75, 8324), (104, 8411), (125, 8480), (129, 8492), (140, 8540), (150, 8570), (155, 8585), (170, 8621), (176, 8648), (182, 8669), (188, 8693), (195, 8717), (197, 8723), (203, 8750), (211, 8783), (218, 8822), (225, 8849), (230, 8870), (233, 8885), (245, 8912), (246, 8915), (253, 8936), (255, 8948), (256, 8954), (263, 9002), (270, 9038), (281, 9086), (286, 9113), (287, 9134), (297, 9197), (301, 9221), (307, 9278), (320, 9383), (322, 9404), (324, 9416), (328, 9458), (332, 9479), (334, 9500), (350, 9629),

Gene: Zahlia\_12 Start: 7645, Stop: 9750, Start Num: 11

Candidate Starts for Zahlia\_12:

(Start: 11 @7645 has 123 MA's), (Start: 13 @7666 has 3 MA's), (32, 7843), (34, 7852), (37, 7876), (39, 7948), (42, 7972), (43, 7978), (51, 8128), (54, 8149), (55, 8161), (57, 8170), (72, 8377), (75, 8395), (104, 8482), (125, 8551), (129, 8563), (140, 8611), (150, 8641), (155, 8656), (170, 8692), (176, 8719), (182, 8740), (188, 8764), (195, 8788), (197, 8794), (203, 8821), (211, 8854), (218, 8893), (225, 8920), (230, 8941), (233, 8956), (245, 8983), (246, 8986), (253, 9007), (255, 9019), (256, 9025), (263, 9073), (279, 9148), (281, 9157), (286, 9184), (287, 9205), (297, 9268), (301, 9292), (307, 9349), (320, 9454), (322, 9475), (324, 9487), (328, 9529), (332, 9550), (334, 9571), (350, 9700),

Gene: Zeta1847\_14 Start: 9068, Stop: 11329, Start Num: 4

Candidate Starts for Zeta1847\_14:

(Start: 4 @9068 has 1 MA's), (16, 9158), (19, 9203), (21, 9230), (25, 9254), (27, 9260), (37, 9350), (44, 9458), (48, 9518), (65, 9713), (68, 9776), (77, 9875), (79, 9884), (106, 9986), (131, 10118), (137, 10139), (147, 10184), (179, 10283), (188, 10319), (190, 10325), (201, 10364), (212, 10415), (218, 10448), (228, 10487), (241, 10523), (256, 10580), (273, 10673), (274, 10679), (281, 10712), (287, 10760), (308, 10910), (310, 10922), (319, 11006), (343, 11186),

Gene: Zorro\_18 Start: 12572, Stop: 15133, Start Num: 5

Candidate Starts for Zorro\_18:

(3, 12551), (Start: 5 @12572 has 83 MA's), (10, 12620), (14, 12653), (18, 12701), (20, 12725), (21, 12737), (30, 12797), (34, 12845), (35, 12860), (36, 12866), (45, 12986), (47, 13028), (52, 13124), (53, 13127), (56, 13157), (62, 13211), (71, 13352), (72, 13373), (76, 13397), (77, 13418), (79, 13427), (89, 13478), (92, 13496), (111, 13682), (133, 13826), (141, 13859), (145, 13886), (148, 13904), (149, 13910), (152, 13934), (154, 13943), (161, 13991), (167, 14018), (168, 14021), (173, 14042), (176, 14054), (184, 14105), (188, 14120), (192, 14132), (194, 14141), (197, 14150), (203, 14177), (206, 14189), (208, 14198), (211, 14210), (212, 14216), (216, 14237), (221, 14261), (223, 14270), (232, 14309), (242, 14360), (243, 14363), (245, 14372), (246, 14375), (250, 14390), (264, 14480), (272, 14516), (290, 14624), (296, 14660), (308, 14756), (309, 14759), (315, 14813), (318, 14852), (325, 14900), (326, 14909), (328, 14933), (331, 14951), (338, 15002), (342, 15026), (345, 15044), (348, 15074),